## 10 CATALOGUE

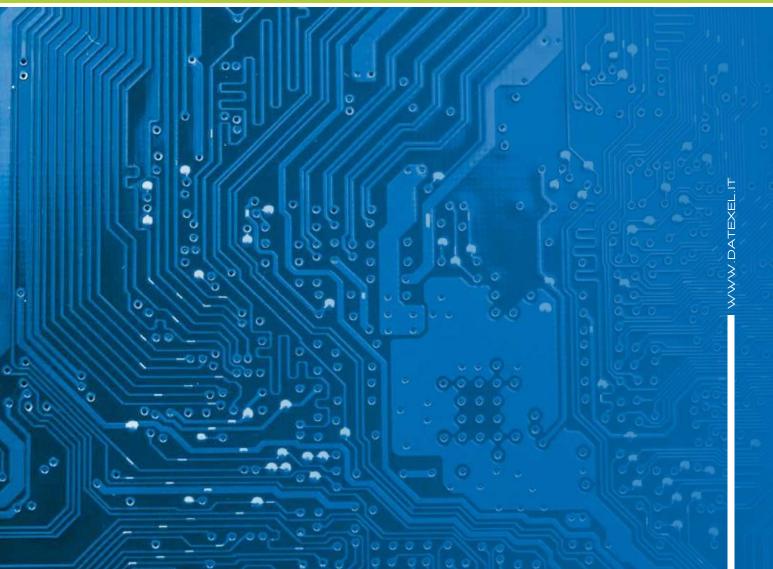








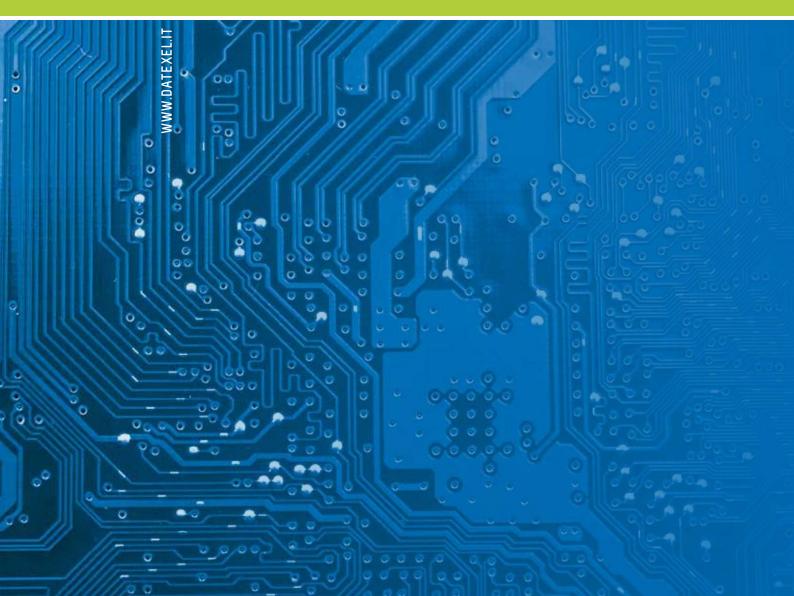
```
EXPERTISE | RELIABILITY | PROFESSIONALISM |
```



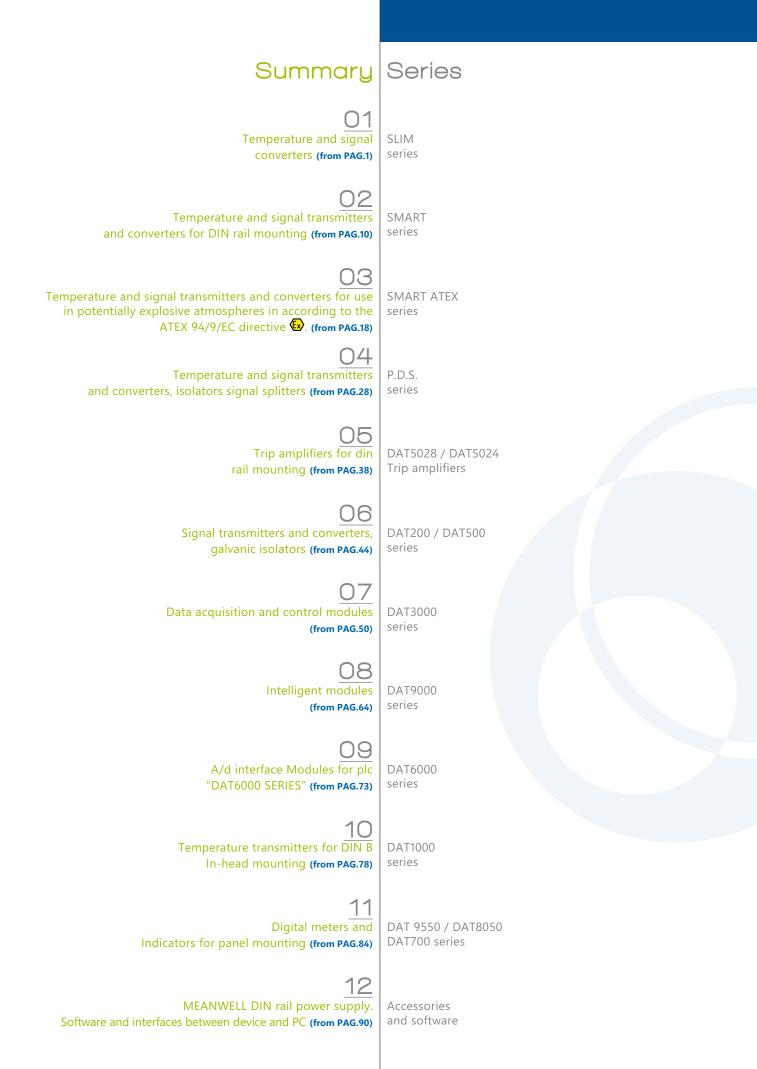
**ODATEXEL** 

ELECTRONIC AND CONTROL PROCESS DEVICES





ELECTRONIC AND CONTROL PROCESS DEVICES



www.datexel.it



Temperature and signal converters **SLIM series** 

(PAG.1 / PAG.9)

Temperature and signal transmitters and converters **SMART series** 

(PAG.10 / PAG.17)



Temperature and signal transmitters and converters for use in potentially explosive atmospheres. ATEX 94/9/EC (PAG.18 / PAG.27)



Temperature and signal transmitters and converters for DIN rail mounting P.D.S. series

(PAG.28 / PAG.37)

Trip amplifiers for din rail mounting DAT5024/5028 series

(PAG.38 / PAG.43)



Signal transmitters and converters DAT200 series Galvanic isolators **DAT500 series** 

(PAG.44 / PAG.49)



#### The Company

### **ODATEXEL**

The success of a company depends on many factors: expertise, reliability, professionalism.

If all this is also true for DATEXEL, nevertheless it is not enough to draw a full picture.

DATEXEL was founded in 1992 on the commitment and ambitions of a few partners as a small provincial company, and through the years became a consolidated entity that today operates on national and international markets as a manufacturer of electronic equipment for industrial automation and process control.









Products that represent innovative solutions capable of satisfying the requirements of the main industrial automation sectors:

- Energy production
- Oil
- Foodstuffs
- Pharmaceutical
- Chemical industry
- Water processing
- Automation & engineering
- Paper

#### A wide range of products

File Edit View Favorites Rock Help CODATEXEL MARKEN The DATEXEL range is vast and complete: Transmitters, Temperature converters (both analogue and digital), Galvanic isolators, Signal splitters, Distributed I/O modules, A/D interface modules for PLC, Trip amplifiers, Power suppliers, Current loop isolators, Digital meters and Indicators.

Products that represent innovative solutions capable of satisfying the requirements of the main industrial automation sectors: energy production, oil, foodstuffs, pharmaceutical, chemical industry, water processing, automation & engineering, paper.



ODATEXEL

#### The DATEXEL range is vast and complete:

- Transmitters
- Temperature converters (both analogue and digital)
- Galvanic isolators
- Signal splitters
- Distributed I/O modules
- A/D interface modules for PLC
- Trip amplifiers
- Power suppliers

DATEXEL

- Current loop isolators
- Digital meters and Indicators

#### The synergy

But behind the equipments and systems branded DATEXEL, there is the dedication and professionalism of our employees. All work processes (design, assembly, testing) are carried out within our company.

#### DATEXEL is organized:

- DESIGN/ RESEARCH & DEVELOPMENT
- PRODUCTION
- SALES ITALY / ABROAD
- ADMINISTRATION and PURCHASING
- QUALITY

#### Constant research and development

V

Technological innovation and the constant search for integrated solutions allow us to offer our customers an exclusive service: the work process is carried out automatically with the use of cutting-edge machinery (pick and place for assembly), and the products are 100% tested, also thanks to the use of specific software applications and instruments regularly subjected to calibration.

#### The team



All departments and offices are perfectly integrated and compatible one with the other. And each one contributes to the company's overall success.

Specifically, the SALES, RESEARCH & DEVELOPMENT– DESIGN, PRODUCTION units play a crucial role. During the design phase, a team of specialized technicians assists the customer, identifying all its specific needs and requirements.

In the PRODUCTION department, duly trained personnel handle the manufacture and finishing of DATEXEL equipment, as well as the final testing (before the delivery). In a constantly evolving sector such as industrial automation, RESEARCH & DEVELOPMENT represents a strategic department capable of acquiring and maintaining COMPETITIVE ADVANTAGES.

#### The ambitions

The company's growth and expansion philosophy translates into a wider and wider product offer.

As a result, qualified personnel are always searching for customers and distributors in order to acquire new markets: not only in Italy, but in EC and non-EC countries too, specifically in developing countries such as Brazil, South Africa, Australia and China.

New and distant horizons then: the same horizons that DATEXEL is striving to reach in the areas of quality and innovation as well.

### **ODAIEXEL**

#### Quality control

DATEXEL invests significantly in RESEARCH & DEVELOPMENT, obtaining first-class results thanks to the contribution of highly specialized researchers and technicians.

And let's not forget the QUALITY factor: DATEXEL has taken on the quality challenge, developing a careful study of production processes and paying great attention to materials and innovative systems.

Operating daily in full compliance with quality standards has made it possible for DATEXEL to obtain its certification according to Standard UNI EN ISO 9001 (1996), subsequently converted into the current standard ISO 9001:2008.

Another important acknowledgement is the ATEX 94/9/EC certification, concerning the type-approval of safety requirements for equipment and protection systems intended for use in potentially explosive atmospheres.

Lastly, in July 2006 DATEXEL conformed to the RoHS Directive (regulation 2002/95/EC) which sets restrictions on the use of certain hazardous substances when building various types of electric and electronic equipment, thus offering environmental guarantees as well with its products.

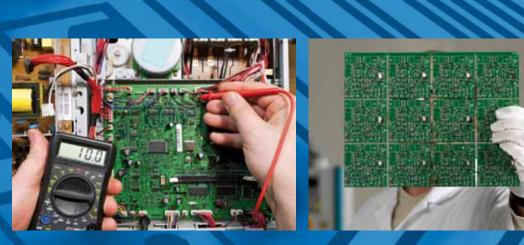




A well-structured organization, operating in facilities that cover a surface area of 450 square meters, with spaces efficiently subdivided into three macro areas: managerial, technical, production.

With regards to the sales area, DATEXEL relies on an in-company division that interacts with Customers on a daily basis in handling the usual commercial activities (issuing proposals or negotiating discounts or delivery times), through a capillary network of distributors (in Italy and abroad) that coordinates and provides assistance with an uninterrupted series of contacts.







The products of Datexel cover several type of applications due to a wide variety of conditions of use and ambient factors:

#### Industries:



#### Food business:



Food production, Cellars, dairies, pasta production, packaging and bottling lines.

#### Energy:

IX



Thermal, hydropower, alternative energy (photovoltaic, solar, geothermal, wind, etc...)

#### **Board Machine - Industrial automation:**



Process control in steel plants, steel works, cement works, pharmaceutical, food and paper industry, etc.

#### Water treatment:

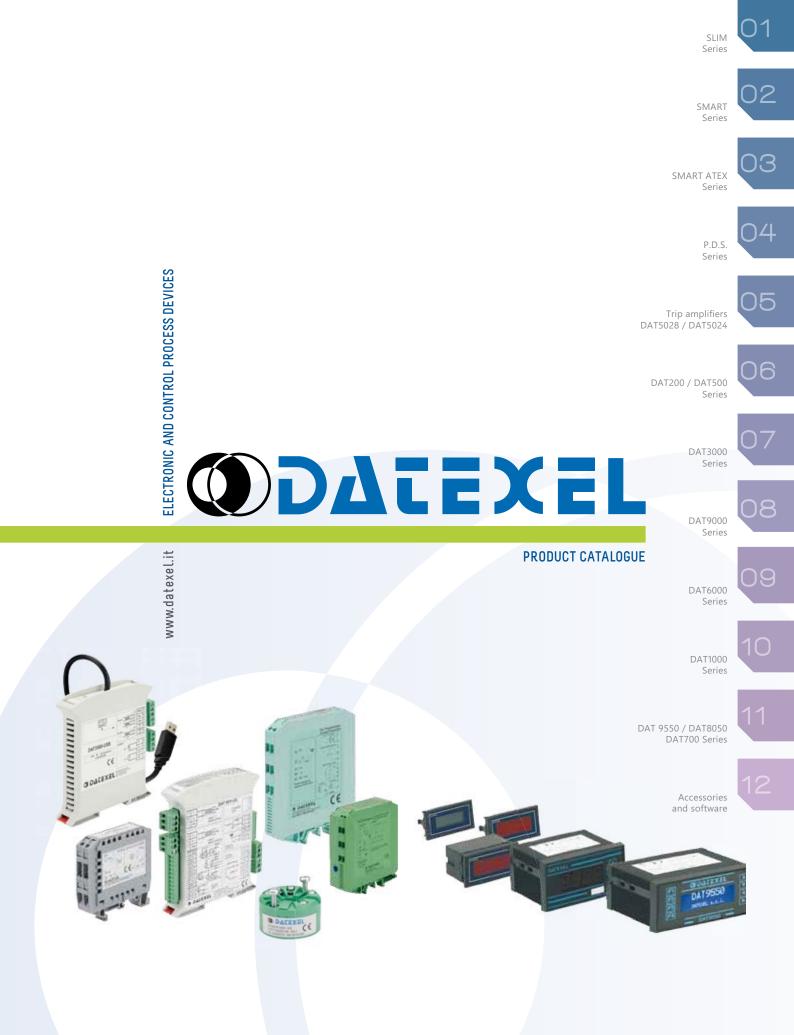


Water recycling, dams, remote control and management, data-logging.

#### **Petrochemical offshore:**



Process control in the petrochemical and offshore sectors.



### **DAIEXEL**

CANELANS RA









#### Temperature and signal converters "SLIM SERIES"

The line of converters "SLIM series" has been designed to provide to the user the highest flexibility in the signals conversion.

- The series is composed of:
- Converters for universal input with double output and trip amplifier (**DAT4530**)
- Single channel converters dedicated for typology of input (DAT4531)
- Double channel converters (two independent inputs and outputs) dedicated for typology of input (**DAT4532**)
- Signal splitters dedicated for typology of input (DAT4631)
- Mathematical modules (DAT4632D)
- Frequency converters (**DAT4540**)

It is possible to program the devices either via dip-switches to set the most common input and output ranges or via Personal Computer using the software DATESOFT by which the user can personalize the input and output ranges for his own necessities.

#### All of these features are available in only 12.5 mm thickness.

#### INDEX

#### 02 · DAT 4530

Universal isolated converter configurable by Dip-Switch or PC double output & trip amplifier

#### 03 · DAT 4531 A

Isolated converter for TC and mV configurable by Dip-Switch or PC **DAT 4531 B** 

Isolated converter for RTD and resistance configurable by Dip-Switch or PC

#### 04 · DAT 4531 C

Isolated converter for PTC/NTC/Pot configurable by Dip-Switch or PC DAT 4531 D

Isolated converter for voltage and current configurable by Dip-Switch or PC

#### 05 · DAT 4532 A

Double channel, isolated converter for TC and mV configurable by Dip-Switch or PC **DAT 4532 B** 

Double channel, isolated converter for RTD and resistance configurable by Dip-Switch or PC

#### 06 • DAT 4532 C

Isolated, double channel converter for PTC/NTC/Pot configurable by Dip-Switch or PC **DAT 4532 D** 

Double channel, isolated converter for voltage and current configurable by Dip-Switch or PC

#### 07 · DAT 4540

Isolated F/V, F/I Converter Configurable by Dip-Switch or PC, Transistor or Relay Outputs **DAT 4631 A** 

Isolated Splitter / Converter for TC and mV configurable by Dip-Switch or PC

#### 08 · DAT 4631 B

Isolated Splitter / Converter for RTD and resistance configurable by Dip-Switch or PC **DAT 4631 C** Isolated, Splitter / Converter for PTC/NTC/Pot configurable by Dip-Switch or PC

#### 09 • DAT 4631 D

Isolated Splitter / Converter for voltage and current configurable by Dip-Switch or PC **DAT 4632 D** Isolated mathematical module for voltage and current input configurable by Dip-Switch or PC

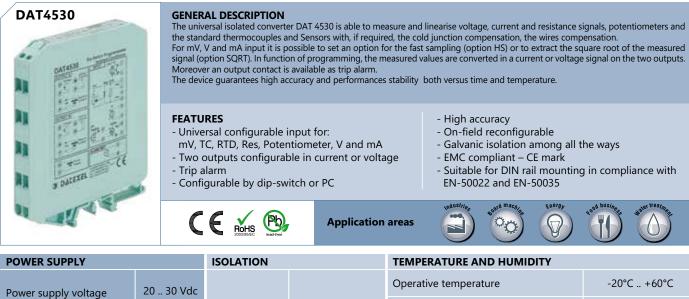
# SLIM SERIES





SLIM Temperature and signal series converters

#### UNIVERSAL ISOLATED CONVERTER CONFIGURABLE BY DIP-SWITCH OR PC DOUBLE OUTPUT & TRIP AMPLIFIER



1500 Vac, Among all the Storage temperature -40°C .. +85°C 50 Hz, 1 min ways 60 Vdc max) Rever. polarity protection 0..90% Humidity (not condensed) **CURRENT CONSUMPTION** EMC (for industrial environments) HOUSING ALARM TRIP DIRECTIVE : 2004 / 108 / EC Contact SPST Material Self-extinguishing plastic 90 mA max. Current output Max Load (resistive): Dimensions Immunity EN 61000-6-2 W x L x H : 90 x 112 x 12.5 (mm) Voltage 48 V (ac/dc) Voltage output 30 mA max. Emission EN 61000-6-4 Weight about 90 g. Current 0.4 A

INPUT	INPUT						
Input type	Min	Мах	Span min				
TC (CJC int./ext.)							
J	-200°C	1200°C	100°C				
К	-200°C	1300°C	100°C				
S	0°C	1750°C	400°C				
R	0°C	1750°C	400°C				
В	0°C	1850°C	400°C				
E	-200°C	1000°C	100°C				
Т	-200°C	400°C	100°C				
N	-200°C	1300°C	100°C				
Voltage							
mV	-100 mV	+90 mV	5 mV				
mV	-100 mV	+200 mV	10 mV				
mV	-100 mV	+800 mV	20 mV				
RTD (2, 3, 4 wires)							
Pt100	-200°C	850°C	50°C				
Pt1000	-85°C	185°C	30°C				
Ni100	-60°C	180°C	50°C				
Ni1000	-60°C	150°C	30°C				
RES. (2, 3, 4 wires)	0 Ω	500 Ω	50 Ω				
RES. (2, 5, 4 WIIES)	0 Ω	2000 Ω	50 Ω				
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %				
Voltage	-10 V	10 V	1 V				
Current	0 mA	20 mA	1 mA				
Calibration (1)							
mV, TC		0.1 % and ±12 uV					
RTD		0.1 % and ±0.2°C					
Res.	the higher of ±	0.1 % and ±0.15					
Potentiometer	± 0.05 % f.s.						
Volt	the higher of $\pm 0.1$ % and $\pm 2$ mV						
mA	the higher of $\pm 0.1$ % and $\pm 6$ uA						
mV, V, mA	± 0.5 % f.s (opt	. HS)					

(1) referred to the input Span (difference between max. and min.)

Linearity (1) TC, RTD ± 0.1 % f.s. ± 0.05 % f.s. mV, V, mA Input impedance TC, mV >= 10 MΩ ~22 Ω mΑ Sensor excitation current RTD, Res 400 uA Voltage Aux. >18 V @ 20 mA Line resistance influence (1) <=0.8 uV/Ohm TC, mV RTD 3 wires  $0.05\%/\Omega$  (50  $\Omega$  max balanced) RTD 4 wires 0.005%/Ω (100 Ω max balanced) Thermal drift (1) ± 0.01 % / °C Full scale CJC ± 0.01 % / °C **CJC** compensation ± 0.5°C

OUTPUT (2 CHANNELS)					
Output type	Min	Max	Span min		
Current	0 mA	20 mA	4 mA		
Voltage	0 V	10 V	1 V		
Output calibration					
Current		± 7 uA			
Voltage		± 5 mV			
Voltage Aux.		>12V @ 20	>12V @ 20 mA		
Burn-out values					
Max. output value	22 mA or 11	22 mA or 11 V			
Min. output value	0 mA or -0.6	5 V			
Output load Resistance -	Rload				
Current output		< 500 Ω	< 500 Ω		
Voltage output		> 10 KΩ	> 10 KΩ		
Short circuit current	30 mA max	30 mA max			
Posponso timo (10 · 00%	about 400 n	ns			
Response time (10÷ 90% of F.S)		100 ms (opt	100 ms (opt. HS)		

SERIES

SLIM

2

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**(D)** DATEXEL

good business

#### ISOLATED CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC

## ∡ 4531 DAT

Rever. polarity protection 60 Vdc max

1500 Vac,

**TEMPERATURE AND HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

Self-extinguishing plastic

DIRECTIVE : 2004 / 108 / EC

50 Hz, 1 min

**CURRENT CONSUMPTION** 

**POWER SUPPLY** 

Current output

Voltage output

ISOLATION

Among all the

Operative temperature

Humidity (not condensed)

Immunity EN 61000-6-2

Storage temperature

ways

Emission

Material

Weight

Ω

4531

DAT

HOUSING

Power supply voltage

#### **GENERAL DESCRIPTION**

The isolated converter DAT 4531 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

- On-field reconfigurable

- EMC compliant – CE mark

- Galvanic isolation among the ways

with EN-50022 and EN-50035

- Suitable for DIN rail mounting in compliance

#### **FEATURES**

- Configurable input for TC and mV
- Configurable output in current or voltage

Min

-200°C

-200°C

0°C

0°C

0°C

-200°C

-200°C

-200°C

-100 mV

-100 mV

-100 mV

± 0.2 % f.s.

+01% fs

>= 10 MΩ

> ± 0.1 % f.s. and ± 12 uV

Max

1200°C

1300°C

1750°C

1750°C

1850°C

1000°C

400°C

1300°C

+90 mV

+200 mV

+800 mV

- Configurable by dip-switch or PC

INPUT

J

К

S

R

В

Ε

т

Ν

mV mV

mV

TC

mV

TC, mV

mV, TC

Linearity (1)

Voltage

18 30 Vdc

-20°C .. +60°C

-40°C .. +85°C

0..90%

35 mA max

20 mA max

Input type

- High accuracy

CE in the B

TC (CJC int./ext.)

**Application** a

π	ion areas			<b>D</b>				
	Line resistance influence (1)							
	Span min	TC, mV		<=0.8 uV/Ohr	m			
		Thermal drift (1)						
	100°C	Full scale		± 0.01% / °C				
	100°C	CJC		± 0.01% / °C				
	400°C	CJC compensation		± 0.5°C				
	400°C	OUTPUT						
	400°C		Min	Max	Coop min			
	100°C	Output type		Max	Span min			
	100°C	Current	0 mA	20 mA	4 mA			
	100°C	Voltage	0 V	10 V	1 V			
		Output calibration						
	5 mV	Current		± 7 uA				
	10 mV	Voltage		± 5 mV	± 5 mV			
	20 mV	Burn-out values						
		Max. output value		22 mA or 11	V			
V		Min. output value		0 mA or -0.	6 V			
		<b>Output load Resist</b>	ance - Rlo	bad				
	Current output			< 500 Ω				
		Voltage output		> 10 KΩ				
		Short circuit current		26 mA max				
		Response time (10÷90	about 500 r	ms				

SLIM SERIES

(1) referred to the input Span (difference between max. and min.)

#### ISOLATED CONVERTER FOR RTD AND RESISTANCE CONFIGURABLE BY DIP-SWITCH OR PC

Input calibration (1)

Input impedance (1)

#### **GENERAL DESCRIPTION**

The isolated converter DAT 4531 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable compensation.

In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

POWER SUPPLY			INPUT				
Power supply voltage 18 30 Vdc		Input type	Min	Мах	Span min		
Rever. polarity protection 60 Vdc max		RTD (2, 3 wire	es)				
CURRENT CONSUMPTION		Pt100	-200°C	850°C	50°C		
Current output		nA max.	Pt1000	-85°C	185°C	30°C	
Voltage output	20 m	nA max.	Ni100	-60°C	180°C	50°C	
ISOLATION			Ni1000	-60°C	150°C	30°C	
			RES. (2, 3	0 Ω	500 Ω	50 Ω	
,	50 Hz, 1 n		wires)	0 Ω	2000 Ω	50 Ω	
TEMPERATURE AND HUMIDITY			Calibration (1)				
Operative tempera	iture	-20°C +60°C	RTD	the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C			
Storage temperatu	ire	-40°C +85°C	Low Res.	the higher of ±0.1 % f.s. and ±0.15 $\Omega$			
Humidity (not cond	densed)	090%	High Res.	the higher of $\pm 0.2$ % f.s. and $\pm 1 \Omega$			
EMC (for industr			Linearity (1)				
DIRECTIVE : 20			RTD	± 0.1 % f.s.			
	51000-6-2	•	Sensor excitation current				
-	51000-6-4		RTD, Res	500 uA			
HOUSING		Line resistance influence (1)					
	extinauis	hing plastic	RTD 3 wires	0.05%/Ω (50	Ω max balan	ced)	
		x 112 x 12.5	Thermal drift (1)				
Weight abou	ut 90 g.		Full scale	± 0.01% / °C			

OUTPUT					
Output type	Min	Max	Span min		
Current	0 mA	20 mA	4 mA		
Voltage	0 V	10 V	1 V		
Output calibration					
Current		± 7 uA			
Voltage		± 5 mV			
Burn-out values					
Max. output value	22 mA or 10.6 V				
Min. output value	0 mA or -0.6	V			
Output load Resista	ance - Rloa	d			
Current output		< 500 Ω			
Voltage output		> 10 KΩ			
Short circuit current	26 mA max				
Response time (10÷90% of f.s.) about 500 ms					
1) referred to the input Span (difference between max. and min.)					

0 O

**FEATURES** - On-field reconfigurable - Galvanic isolation among the ways - Configurable input for RTD and resistance - Configurable output in current or voltage - EMC compliant – CE mark - Configurable by dip-switch or PC - Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035 - High accuracy CE NHS B **Application areas** 

**ODATEXEL** 

**POWER SUPPLY** 

Current output

## υ 4531 DAT

Power supply voltage 18 .. 30 Vdc

Rever. polarity protection 60 Vdc max

35 mA max.

**CURRENT CONSUMPTION** 

#### ISOLATED CONVERTER FOR PTC/NTC/POT CONFIGURABLE BY DIP-SWITCH OR PC

- On-field reconfigurable

- EMC compliant - CE mark

Ö

- Galvanic isolation among the ways

with EN-50022 and EN-50035

- Suitable for DIN rail mounting in compliance

#### GENERAL DESCRIPTION

The isolated converter DAT 4531 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for PTC, NTC and Pot. - Configurable output in current or voltage
- Configurable by dip-switch or PC

Min

-55°C

-55°C

-40°C

-40°C

-10°C

-30°C

0 %

- High accuracy

INPUT

PTC

Input type

КТҮ81-210

KTY81-220

KTY84-130

KTY84-150

Coster 1K

PTC, NTC

PTC, NTC

PTC.NTC

(Rnom.< 50KΩ) Calibration (1)

Linearity (1)

Potentiometer ± 0.05 % f.s.

Sensor excitation current

NTC Coster 10K

Pot.



Span min

50°C

50°C

50°C

50°C

50°C

25°C

10 %

Арр	lica	tion	area

Max

150°C

150°C

300°C

300°C

100°C

40°C

100 %

the higher of ±0.1 % f.s. and ±0.2°C

	A		0				
OUTPUT							
Output type	Min	Max	Span min				
Current	0 mA	20 mA	4 mA				
Voltage	0 V	10 V	1 V				
Output calibration							
Current	± 7 uA						
Voltage	± 5 mV						
Burn-out values							
Max. output value		22 mA or 11 V					
Min. output value		0 mA or -0.6 V					
<b>Output load Resista</b>	ance - Rloa	d					
Current output		< 500 Ω					
Voltage output	> 10 KΩ						
Short circuit current 26 mA max							
Response time (10÷90	)% of f.s.)	about 500 m	S				

Voltage outp	but	20 n	nA max.		
ISOLATION	N				
Among all th		) Vac,			
ways	50 F	łz, 1 n	nin		
TEMPERAT	<b>FURE AI</b>	ND H	IUMIDITY		
Operative ter	nperature	9	-20°C +60°C		
Storage temperature -40°C +85°					
Humidity (not	t condens	ed)	0 90 %		
EMC (for in	dustrial	envir	onments)		
DIRECTIVE	: 2004	/ 108	3 / EC		
Immunity	EN 6100	0-6-2			
Emission	EN 6100	0-6-4			
HOUSING					
Material	Self-extinguishing plastic				
Dim. (mm)	W x L x H : 90 x 112 x 12.5				
Weight	about 90 g.				

2.5	Full scale	± 0.01% / °C	
	(1) referred to th	e input Span (difference between ma	x. and min.)

500 uA

± 0.1 % f.s.

#### ISOLATED CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

Thermal drift (1)

The isolated converter DAT 4531 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal.

- On-field reconfigurable

- EMC compliant - CE mark

EN-50022 and EN-50035

- Galvanic isolation among the ways

- Suitable for DIN rail mounting in compliance with

The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for voltage and current
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- High accuracy
  - CE STORES CONSTRUCTION



Application	area

INPUT					
Input type	Min	Мах	Span min		
Voltage	0 V	10 V	1V		
Current	0 mA	20 mA	1 mA		
Calibration (1	)				
Volt	the higher o	f ±0.1 % f.s. a	nd ± 2 mV		
mA	the higher o	f ±0.1 % f.s. a	nd ± 6 uA		
Linearity (1)					
V, mA	± 0.05 % f.s.	± 0.05 % f.s.			
Input impeda	nce				
Volt	>= 1 MΩ				
Current	<= 50 Ω				
Thermal drift (1)					
Full scale	± 0.01% / °C				
	1				

<u> </u>	<u> </u>	$\sim$	$\sim$			
OUTPUT						
Output type	Min	Мах	Span min			
Current	0 mA	20 mA	4 mA			
Voltage	0 V	10 V	1 V			
Output calibration						
Current		± 7 uA				
Voltage		± 5 mV				
Burn-out values						
Max. output value	22 mA or 10.6 V					
Min. output value	0 mA or -0.6	V				
Output load Resist	ance - Rloa	d				
Current output		< 500 Ω				
Voltage output	> 10 KΩ					
Short circuit current 26 mA max						
Response time (10÷90% of f.s.) about 100 ms						
1) (						

(1) referred to the input Span (difference between max. and min.)

Δ

DAT 4531

POWER SUPPLY

Current output

Voltage output

**ISOLATION** 

Among all the

Operative temperature

Humidity (not condensed)

Immunity EN 61000-6-2

Storage temperature

ways

Emission HOUSING Material

Weight

Power supply voltage 18 .. 30 Vdc

Rever. polarity protection 60 Vdc max

1500 Vac,

**TEMPERATURE AND HUMIDITY** 

**EMC** (for industrial environments) DIRECTIVE : 2004 / 108 / EC

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

Self-extinguishing plastic

50 Hz, 1 min

35 mA max.

20 mA max.

-20°C .. +60°C

-40°C ... +85°C

0..90%

**CURRENT CONSUMPTION** 

**(D)** DATEXEL

400d busines

26 mA max

about 500 ms

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC

## ∢ **DAT 4532** CE

Power supply voltage 18 .. 30 Vdc Rever. polarity protection 60 Vdc max

1500 Vac,

**TEMPERATURE AND HUMIDITY** 

EMC (for industrial environments)

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

Self-extinguishing plastic

CE

about 90 g.

DIRECTIVE : 2004 / 108 / EC

50 Hz, 1 min

55 mA max

25 mA max

-20°C .. +60°C

-40°C .. +85°C

0...90%

**CURRENT CONSUMPTION** 

**POWER SUPPLY** 

Current output

Voltage output

ISOLATION

Among all the

Operative temperature

Humidity (not condensed)

Immunity EN 61000-6-2

Storage temperature

ways

Emission

Material

Weight

Ω

4532

DAT

Weight

HOUSING

#### **GENERAL DESCRIPTION**

The isolated converter DAT 4532 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

High accuracy

- On-field reconfigurable

- Galvanic isolation among the ways - EMC compliant - CE mark

with EN-50022 and EN-50035

- Suitable for DIN rail mounting in compliance

Ö.m.

Energy

(m)

#### FEATURES

- Configurable input for TC and mV - Configurable output in Current or Voltage
- Configuration by PC allows to program the two channels with two independent settings
- Double channel in the same enclosure - Configurable by dip-switch or PC



INPUT (2 C

TC (CJC int

Input type

к

S

R

в

Ε

т

Ν

mV mV

m\

TC

mV

TC, mV

mV, TC

Voltage

Input calib

Linearity (1)

A	ad	lica	tio	n ai	re

HS	lead-free	Арриса	lion areas				$\bigcirc$	
CHANNELS)				Line resistance infl	uence (1)			
	Min	Мах	Span min	TC, mV	<	=0.8 uV/Ohr	n	
t./e	ext.)			Thermal drift (1)				
	-200°C	1200°C	100°C	Full scale	±	: 0.01 % / °C		
	-200°C	1300°C	100°C	CJC	±	: 0.01 % / °C		
	0°C	1750°C	400°C	CJC compensation	±	: 0.5°C		
	0°C	1750°C	400°C	OUTDUT /2 CUANIN				
	0°C	1850°C	400°C	OUTPUT (2 CHANN		Maria	C	
	-200°C	1000°C	100°C	Output type	Min	Max	Span min	
	-200°C	400°C	100°C	Current	0 mA	20 mA	4 mA	
	-200°C	1300°C	100°C	Voltage	0 V	10 V	1 V	
	· ·		·	Output calibration				
	-100 mV	+90 mV	5 mV	Current		±7uA		
	-100 mV	+200 mV	10 mV	Voltage		± 5 mV		
	-100 mV	+800 mV	20 mV	Burn-out values		_		
rat	ion (1)		·	Max. output value		22 mA or 10	0.6 V	
_	the higher of	f ±0.1 % f.s. a	nd ±12 uV	Min. output value 0 mA or -0.6 V				
)				Output load Resistance - Rload				
	± 0.2 % f.s.			Current output		< 500 Ω		
	± 0.1 % f.s.			Voltage output		> 10 KΩ		

Short circuit current

- On-field reconfigurable - Galvanic isolation among the ways

- EMC compliant - CE mark

EN-50022 and EN-50035

ÖÖ

Suitable for DIN rail mounting in compliance with

Response time (10÷90% of f.s.)

## SLIM SERIES

5

(1) referred to the input Span (difference between max. and min.)

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR RTD AND RESISTANCE CONFIGURABLE BY DIP-SWITCH OR PC

>= 10 MΩ

#### GENERAL DESCRIPTION

Input impedance

The isolated double channel converter DAT 4532 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

#### **FEATURES**

- Configurable input for RTD and resistance
- Configurable output in current or voltage
- Double channel in the same enclosure
- Configurable by dip-switch or PC
- High accuracy

App	lica	atio	n area

			2002/96/EC	lead-free						
POWER SUPPLY				INPUT (2 CH	ANNELS)					
Power supply	y voltage		18 30 Vda	с	Input type	Min	Max	Span min		
Rever. polari	ty protect	ion	60 Vdc ma	х	RTD (2, 3 wir	es)				
CURRENT	CONSU	МРТ	ION		Pt100	-200°C	850°C	50°C		
Current outp	ut	55 m	nA max.		Pt1000	-85°C	185°C	30°C		
Voltage outp	out	25 m	nA max.		Ni100	-60°C	180°C	50°C		
ISOLATION	1				Ni1000	-60°C	150°C	30°C		
Among all th		Vac,			RES. (2, 3	0 Ω	500 Ω	50 Ω		
ways		z, 1 n			wires)	0 Ω	2000 Ω	50 Ω		
TEMPERAT	URE AN	ID H	UMIDITY		Calibration (1	)	·	·		
Operative terr	nperature		-20°C +60	0°C	RTD	the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C				
Storage temp	erature		-40°C +85	5°C	Low Res.	the higher of ±0.1 % f.s. and ±0.15 $\Omega$				
Humidity (not	condense	d)	0 90 %		High Res.	High Res. the higher of $\pm 0.2$ % f.s. and $\pm 1 \Omega$				
EMC (for in					Linearity (1)					
DIRECTIVE			,		RTD	± 0.1 % f.s.				
Immunity	EN 6100				Sensor excita	tion curren	t			
Emission	EN 6100				RTD, Res	500 uA	500 uA			
HOUSING					Line resistance	e influence	e (1)			
Material	Self-exti	nauis	hing plastic		RTD 3 wires	0.05 %/Ω (50	) Ω max balaı	nced)		
Dim. (mm)			x 112 x 12.5		Thermal drift	<b>: (</b> 1)				
		X 1.2 X 12.5								

± 0.01 % / °C

Full scale

OUTPUT (2 CHANNELS)								
Output type	Min	Max	Span min					
Current	0 mA	20 mA	4 mA					
Voltage	0 V	10 V	1 V					
Output calibration								
Current		± 7 uA						
Voltage		± 5 mV						
Burn-out values								
Max. output value		22 mA or 10.6 V						
Min. output value		0 mA or -0.6	V					
Output load Resista	ance - Rloa	d						
Current output		< 500 Ω						
Voltage output		> 10 KΩ						
Short circuit current		26 mA max						
Response time (10÷90% of f.s.) about 500 ms								
(1) referred to the input Span (difference between max. and min.)								



**POWER SUPPLY** Power supply voltage

Current output

Voltage output

υ

DAT 4532

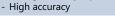
#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR PTC/NTC/POT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

The isolated double channel converter DAT 4532 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

#### FEATURES

- Configurable input for PTC, NTC and Pot.
- Configurable output in current or voltage
- Double channel in the same enclosure
- Configurable by dip-switch or PC



Input type

КТҮ81-210

KTY81-220

KTY84-130

KTY84-150

Coster 1K

PTC, NTC

PTC, NTC

PTC.NTC

Full scale

Calibration (1)

Linearity (1)

Potentiometer ± 0.05 % f.s.

Sensor excitation current

NTC Coster 10K

Pot. (Rnom.< 50KΩ)

PTC



-10°C

-30°C

0 %

± 0.1 % f.s.

± 0.01 % / °C

500 uA

the higher of ±0.1 % f

100°C

40°C

100 %

(1) referred to the input Span (difference between max. and min.)

- On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with
- EN-50022 and EN-50035 CE NOHS CO <sup>O</sup>O **Application areas INPUT (2 CHANNELS)** Max Min -55°C 150°C 150°C -55°C 300°C -40°C 300°C -40°C

J						
ISOLATION	J					
Among all th	e	1500 Va				
ways		50 Hz, 1	min			
TEMPERAT	TUR	E AND	HUMIDITY			
Operative ter	nper	ature	-20°C +60°C			
Storage temp	perat	ure	-40°C +85°C			
Humidity (not	t cor	densed)	0 90 %			
EMC (for in	dus	trial envi	ironments)			
DIRECTIVE	: 2	004 / 10	08 / EC			
Immunity	ΕN	61000-6-	-2			
Emission	EN	61000-6-	-4			
HOUSING						
Material	Self-extinguishing plastic					
Dim. (mm)	W	W x L x H : 90 x 112 x 12.5				

Rever. polarity protection 60 Vdc max

**CURRENT CONSUMPTION** 

CE

18 .. 30 Vdc

55 mA max.

25 mA max

		OUTPUT (2 CHANN	IELS)			
х	Span min	Output type	Min	Max	Span mir	
		Current	0 mA	20 mA	4 mA	
2	50°C	Voltage	0 V	10 V	1 V	
2	50°C	<b>Output calibration</b>				
С	50°C	Current		± 7 uA		
С	50°C	Voltage	Voltage			
		Burn-out values				
2	50°C	Max. output value		22 mA or 10.	6 V	
С	25°C	Min. output value		0 mA or -0.6	V	
6	10 %	<b>Output load Resista</b>	ance - Rloa	d		
0	10 /0	Current output		< 500 Ω		
		Voltage output		> 10 KΩ		
f.s. a	nd ±0.2 °C	Short circuit current		26 mA max		
		Response time (10÷90	)% of f.s.)	about 500 m	s	

( )

Weight about 90 g.

Δ

DAT 4532

SERIES

S

#### DOUBLE CHANNEL, ISOLATED CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

Thermal drift (1)

The isolated converter DAT 4532 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal.

The device guarantees high accuracy and performances stability both versus time and temperature. The double channel allows the high density mounting where is necessary to reduce the encumbrances.

#### FEATURES

°C

°C

- Configurable input for voltage and current

- Configurable by dip-switch or PC - Two independent channels

- Configurable output in current or voltage - Double channel in the same enclosure
- High accuracy - On-field reconfigurable
- Galvanic isolation among the ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with
- EN-50022 and EN-50035



			2083							
	POWER SUPPLY									
	Power supply voltage 18 30 Vdo									
	Rever. polari	ty p	rotec	tion	60 Vdc	ma				
	CURRENT	coi	NSU	МРТ	ION					
	Current outp	ut		55 m	nA max.					
	Voltage outp	out		25 m	nA max.					
	ISOLATIO	N								
	Among all th	ne		) Vac,						
	ways		50 H	łz, 1 n	nin					
	TEMPERA	FUR	E AI	ND H	IUMID	ТΥ				
_	Operative ter	npei	rature	<b>;</b>	-20°C	+60				
	Storage temp	perat	ure		-40°C	+85				
	Humidity (no	t cor	ndens	ed)	09	0 %				
	EMC (for in	dus	trial	enviro	onment	s)				
	DIRECTIVE	: 2	004	/ 108	3 / EC					
	Immunity	ΕN	6100	0-6-2						
	Emission	ΕN	6100	0-6-4						
	HOUSING									
	Material	Sel	f-exti	nguis	hing pla	stic				
	Dim. (mm)	W	k L x I	H : 90	x 112 x 1	2.5				

	o academice						
INPUT (2 CH	HANNELS)			OUTPUT (2 CHAN	NELS)		
Input type	Min	Max	Span min	Output type	Min	Max	Span min
Voltage	0 V	10 V	1 V	Current	0 mA	20 mA	4 mA
Current	0 mA	20 mA	1 mA	Voltage	0 V	10 V	1 V
Calibration	(1)			<b>Output calibration</b>	1		
Volt	the higher o	f ±0.1 % f.s. a	ind ± 2 mV	Current		± 7 uA	
mA	the higher o	f ±0.1 % f.s. a	ind ± 6 uA	Voltage ± 5 mV			
Linearity (1)				Burn-out values			
V, mA	± 0.05 % f.s.			Max. output value 22 mA or 10.6 V			.6 V
Input imped	lance			Min. output value 0 mA or -0.6 V			
Volt	>= 1 MΩ			Output load Resistance - Rload			
Current	<= 50 Ω			Current output < 500 Ω			
Thermal dri	<b>ft (</b> 1)			Voltage output > 10 KΩ			
Full scale	± 0.01 % / °C	2		Short circuit current 26 mA max			
· · ·				Response time (10÷9	0% of f.s.)	about 100 m	IS
				(1) referred to the input	Span (differer	nce between r	max. and min.)

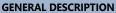
min.) referred to the input Span (difference between max. and

#### **ISOLATED FREQUENCY TO VOLTAGE, FREQUENCY TO CURRENT** CONVERTER CONFIGURABLE BY DIP-SWITCH OR PC, TRANSISTOR OR RELAY OUTPUTS GENERAL DESCRIPTION



		Tachometer digital signals. two relays are available in integrity of the sensor; in c The device guarantees hig FEATURES - Measure of the frequence	Inverter DAT 4540 is able to mean In function of programming, the n order to be programmed as trip a ase of fault (short circuit or interru- n accuracy and performances stab y for the following digital FL, NPN, PNP, Tachometer, Volt current or voltage Irm or Namur sensor	neasured values are converted larm (version "-R"). For the Na ption), on the transistor outpu	in a current or mur input is c t is generated perature. able nong all way mark mounting in 2035 standar	voltage signa ontinuously o an alarm. s according t ds	al. Moreover checked the
	E mark		Application area	s industries south matching	Energy	ood business a	aler treatmen
POWER SUPPLY		INPUT		Frequency	0	.1 Hz ÷ 20 Kł	Ηz
Power supply voltage	18 30 Vdc	Namur ( DIN 1923		Sample Time	<	50ms + per	iod
Rever. polarity protectio	n 60 Vdc max	Low level Trig.	< 1.2 mA	OUTPUT			
CURRENT CONSUM	PTION	High level Trig.	> 2.1 mA	Output type	Min	Max	Cnon min
Current output 90	) mA max.	Voltage Aux.	8.2 V – 8 mA	Current	0 mA	20 mA	Span min 4 mA
Voltage output 30	) mA max.	Impedance	~ 1000 Ohm	Voltage		10 V	1 V
(+ 10mA for each relay o	utput active )	Interruption Alarm	< 0.2 mA	Output calibration	0 1		1
ISOLATION		Short Circuit Alarm	> 7.0 mA	Current		± 7 uA	
Among all the ways 1500 V	ac. 50 Hz. 1 min	TTL Low level Trig.	< 0.8 V	Voltage		± 5 mV	
		High level Trig.	< 0.8 V	Voltage Aux.		>12V @ 20	mA
			> 20 KOhm	Burn-out values			
Operative temperature	-20°C +60°C	PNP	> 20 KOIIII	Max. output value		22 mA or 11	V
Storage temperature	-40°C +85°0		< 4.0 V	Min. output value		0 mA or -0.	6 V
Humidity (not condensed)	090%	High level Trig.	> 7.0 V	Output load Resista	ance - Rloa		
Humidity (not condensed)		Voltage Aux.	17 V – 20 mA	Current output		< 500 Ω	
EMC (for industrial en	,	Impedance	~ 2.2 KOhm	Voltage output		> 10 KΩ	
DIRECTIVE : 2004 / 1	-	Tachometer		Short circuit current		30 mA max	
Immunity EN 61000-6		Low level Trig.	< -50 mV	RELAY OUTPUTS			
Emission EN 61000-6	5-4	High level Trig.	> +50 mV	Relay Outputs (Onl	v for versio	on "-R")	
HOUSING		Impedance	> 100 KOhm	N° 2 SPDT	,	,	
Material Self-ex	tinguishing plasti	c Voltage (program	nmable)	Max. load (Resistive)		250 Vac, 2A	
DAT 4540 (mm) WxLxH	H: 90 x 112 x 12.5	Level Trigger	0.05 V ÷ 7.0 V	Isolation between term	inals	1000 Vac m	ах
DAT 4540-R (mm) WxL x	H: 90 x 112 x 22.5	5 Voltage Aux.	5 ÷ 17 V @ 20 mA	Transistor Output			
Weight about	90 g.	Impedance	> 20 KOhm	Max. load (Resistive)		30 Vdc, 100	mA

#### ISOLATED SPLITTER/CONVERTER FOR TC AND mV CONFIGURABLE BY DIP-SWITCH OR PC



The isolated splitter/converter DAT 4631 A is able to measure and linearise the standard thermocouples with internal or external cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

- On-field reconfigurable

- EMC compliant – CE mark

- Galvanic isolation among the ways

with EN-50022 and EN-50035

- Suitable for DIN rail mounting in compliance

Energy

#### **FEATURES**

∢

DAT 4631

Weight

about 90 g.

- Configurable input for TC and mV
- Double output configurable in current or voltage
- Configurable by dip-switch or PC - High accuracy

#### **Application areas**

	lead-free				A
INPUT				Line resistance infl	uence (1)
Input type	Min	Max	Span min	TC, mV	
TC (CJC int./	ext.)			Thermal drift (1)	
J	-200°C	1200°C	100°C	Full scale	
К	-200°C	1300°C	100°C	CJC	
S	0°C	1750°C	400°C	CJC compensation	
R	0°C	1750°C	400°C	OUTDUT (2 CHANN	
В	0°C	1850°C	400°C	•	Min
E	-200°C	1000°C	100°C		
Т	-200°C	400°C	100°C		0 mA
N	-200°C	1300°C	100°C	Voltage	0 V
Voltage				Output calibration	
mV	-100 mV	+90 mV	5 mV	Current	
mV	-100 mV	+200 mV	10 mV	Voltage	
mV	-100 mV	+800 mV	20 mV	Burn-out values	
Input calibra	tion (1)			Max. output value	
mV, TC	the higher o	of ±0.1 % f.s. a	nd ±12 uV	Min. output value	
Linearity (1)				<b>Output load Resist</b>	ance - Rlo
TC	± 0.2 % f.s.			Current output	
mV	± 0.1 % f.s.			Voltage output	
Input imped	ance (1)			Short circuit current	
TC, mV	>= 10 MΩ			Response time (10÷90	)% of f.s.)
	Input type TC (CJC int./ J K S R B E T N Voltage mV mV mV Input calibra mV, TC Linearity (1) TC mV Input imped	Input type         Min           TC (CJC int./ext.)         J           J         -200°C           K         -200°C           S         0°C           B         0°C           E         -200°C           T         -200°C           T         -200°C           Voltage         -200°C           mV         -100 mV           mV         -100 mV           mV         -100 mV           Input calibration (1)         mV           mV, TC         the higher of Linearity (1)           TC         ± 0.2 % f.s.           mV         ± 0.1 % f.s.           Input impedance (1)         T	Input type         Min         Max           TC (CJC int./ext.)         -200°C         1200°C           J         -200°C         1300°C           S         0°C         1750°C           R         0°C         1750°C           B         0°C         1850°C           E         -200°C         1000°C           T         -200°C         1000°C           N         -200°C         1300°C           Voltage         mV         -100 mV         +90 mV           mV         -100 mV         +90 mV         mV           mV         -100 mV         +800 mV         Input calibration (1)           mV, TC         the higher of $\pm 0.1$ % f.s. at         Linearity (1)           TC $\pm 0.2$ % f.s.         mV $\pm 0.1$ % f.s.           Input impedance (1)	Input type         Min         Max         Span min           TC (CJC int./ext.) $-200^{\circ}$ C $1200^{\circ}$ C $100^{\circ}$ C           J $-200^{\circ}$ C $1200^{\circ}$ C $100^{\circ}$ C           K $-200^{\circ}$ C $1300^{\circ}$ C $100^{\circ}$ C           S $0^{\circ}$ C $1750^{\circ}$ C $400^{\circ}$ C           B $0^{\circ}$ C $1850^{\circ}$ C $400^{\circ}$ C           B $0^{\circ}$ C $1850^{\circ}$ C $400^{\circ}$ C           E $-200^{\circ}$ C $1000^{\circ}$ C $100^{\circ}$ C           T $-200^{\circ}$ C $1300^{\circ}$ C $100^{\circ}$ C           N $-200^{\circ}$ C $1300^{\circ}$ C $100^{\circ}$ C           N $-200^{\circ}$ C $1300^{\circ}$ C $100^{\circ}$ C           N $-200^{\circ}$ C $1300^{\circ}$ C $100^{\circ}$ C           Voltage	Input type         Min         Max         Span min           TC (CJC int./ext.)         TC, mV           J         -200°C         1200°C         100°C           K         -200°C         1300°C         100°C           S         0°C         1750°C         400°C           B         0°C         1750°C         400°C           B         0°C         1850°C         400°C           E         -200°C         1000°C         100°C           T         -200°C         1000°C         100°C           Voltage         00tput type         Current           mV         -100 mV         +90 mV         5 mV           Input calibration (1)         Max. output value         Max. output value           mV, TC         the higher of $\pm 0.1$ % f.s. and $\pm 12$ uV         Min. output value           Linearity (1)         TC $\pm 0.2$ % f.s.         Current output           TC $\pm 0.2$ % f.s.         Current output         Voltage output           Inpu

Line resistance inn	uence (I)				
ΓC, mV	<	=0.8 uV/Ohm	ı		
Thermal drift (1)					
-ull scale	0.01% / °C				
CIC	: 0.01% / °C				
CJC compensation	: 0.5°C				
OUTPUT (2 CHANN	IELS)	,			
Dutput type	Min	Max	Span min		
Current	0 mA	20 mA	4 mA		
/oltage	0 V	10 V	1 V		
Dutput calibration					
Current		± 7 uA			
/oltage		± 5 mV			
Burn-out values					
/lax. output value		22 mA or 10.6 V			
/lin. output value		0 mA or -0.6 V			
Output load Resista	ance - Rloa	d			
Current output	< 500 Ω				
/oltage output	> 10 KΩ				
hort circuit current	26 mA max				
Response time (10÷90	% of f.s.)	about 500 m	IS		
und min )					

SLIM SERIES

(1) referred to the input Span (difference between max. and min.)

#### ISOLATED SPLITTER/CONVERTER FOR RTD AND RESISTANCE CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION



Rever. polarity protection 60 Vdc max

1500 Vac,

**TEMPERATURE AND HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

O DATEXEL

Self-extinguishing plastic

DIRECTIVE : 2004 / 108 / EC

50 Hz, 1 min

**CURRENT CONSUMPTION** 

**POWER SUPPLY** 

Current output

Voltage output

ISOLATION

Among all the

Operative temperature

Humidity (not condensed)

Immunity EN 61000-6-2

Storage temperature

ways

Emission

Material

Weight

DAT 4631

HOUSING

Power supply voltage

The isolated Splitter/converter DAT 4631 B is able to measure and linearise the standard RTD and resistances with 2 or 3 wires cable compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

- On-field reconfigurable

- EMC compliant - CE mark - Suitable for DIN rail mounting in

- Galvanic isolation among the ways

compliance with EN-50022 and EN-50035

#### **FEATURES**

- Configurable input for RTD and resistance
- Double output configurable in current or voltage

Min

-200°C

-85°C

-60°C

-60°C

0Ω

0Ω

± 0.1 % f.s.

± 0.01 % / °C

500 uA

Sensor excitation current

Line resistance influence (1)

- Configurable by dip-switch or PC
- High accuracy

INPUT

Pt100

Pt1000

Ni100

Ni1000

wires)

RTD

RTD

Low Res.

High Res.

RTD, Res

Full scale

RTD 3 wires

Linearity (1)

RES. (2, 3

Calibration (1)

Input type

RTD (2, 3 wires)

18 30 Vdc

-20°C .. +60°C

-40°C .. +85°C

0..90%

55 mA max.

25 mA max.

**Application** areas

Max

850°C

185°C

180°C

150°C

500 Ω

2000 Ω

the higher of ±0.1 % f.s. and ±0.2 °C

the higher of ±0.1 % f.s. and ±0.15  $\Omega$ 

the higher of ±0.2 % f.s. and ± 1  $\Omega$ 

0.05 %/Ω (50 Ω max balanced)

		Austa:	Energy	s huel.	. 11024
t	ion areas	Industries safet machine	Every p	cood business we	et treatmen.
		<b>OUTPUT (2 CHANN</b>	NELS)		
	Span min	Output type	Min	Max	Span min
		Current	0 mA	20 mA	4 mA
	50°C	Voltage	0 V	10 V	1 V
	30°C	<b>Output calibration</b>		î	1
	50°C	Current		± 7 uA	
	30°C	Voltage		± 5 mV	
	50 Ω	Burn-out values			
	50 Ω	Max. output value		22 mA or 10.	6 V
		Min. output value		0 mA or -0.6	V
1	nd ±0.2 °C	<b>Output load Resist</b>	ance - Rloa	d	
1	nd ±0.15 Ω	Current output		< 500 Ω	
а	nd ±1Ω	Voltage output		> 10 KΩ	
Short circuit current			26 mA max		
		Response time (10÷90	0% of f.s.)	about 500 m	S
1					

(1) referred to the input Span (difference between max. and min.)

- On-field reconfigurable

 $^{\circ}$ O

- Galvanic isolation among the ways - EMC compliant - CE mark

with EN-50022 and EN-50035

- Suitable for DIN rail mounting in compliance

( )

#### ISOLATED, SPLITTER/CONVERTER FOR PTC/NTC/POT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

Thermal drift (1)

The isolated Splitter/converter DAT 4631 C is able to measure and linearise the standard PTC and NTC sensors and potentiometers. In function of programming, the measured values are converted in a current or voltage signal The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

°C °C

- Configurable input for PTC, NTC and Pot.
- Double output configurable in current or voltage
- Configurable by dip-switch or PC
- High accuracy



Application areas

HOHS 2002/95/EC	lead-free			Q			
INPUT	-			0			
Input type	Min	Мах	Span min	0			
РТС				Cu			
KTY81-210	-55°C	150°C	50°C	Vc			
KTY81-220	-55°C	150°C	50°C	0			
KTY84-130	-40°C	300°C	50°C	Cu			
KTY84-150	-40°C	300°C	50°C	Vc			
NTC				Вι			
Coster 10K	-10°C	100°C	50°C	M			
Coster 1K	-30°C	40°C	25°C	Mi			
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %	<b>O</b> Cu			
Calibration (1	)			Vc			
PTC, NTC	the higher o	f ±0.1 % f.s. a	nd ±0.2 °C	Sh			
Potentiometer	± 0.05 % f.s.			Re			
Linearity (1)							
PTC, NTC	± 0.1 % f.s.						
Sensor excitation current							
PTC,NTC	500 uA						
Thermal drift	<b>(</b> 1)						
Full scale	± 0.01 % / °C	2					

(1) referred to the input Span (difference between max. and min.)

OUTPUT (2 CHANNELS)								
Output type	Min	Мах	Span min					
Current	0 mA	20 mA	4 mA					
Voltage	0 V	10 V	1 V					
Output calibration								
Current		± 7 uA						
Voltage	± 5 mV							
Burn-out values								
Max. output value		22 mA or 10.6 V						
Min. output value		0 mA or -0.6 V						
Output load Resista	ance - Rloa	d						
Current output		< 500 Ω						
Voltage output	> 10 KΩ							
Short circuit current		26 mA max						
Response time (10÷90	about 500 m	S						

	unn		T					
	POWER SUPPLY							
	Power suppl	y vo	ltage			18 30 Vd	lc	
	Rever. polari	ty p	rotec	tion		60 Vdc ma	ax	
	CURRENT	coi	NSU	MP.	TI	ON		
	Current output 55					A max.		
	Voltage output 25				m.	A max.		
ISOLATION								
	Among all the usys 1500 Vac ways 50 Hz, 1					in		
	TEMPERAT	<b>FUR</b>	RE AI	ND	н	UMIDITY	1	
	Operative ter	npei	rature	÷		-20°C +6	0	
	Storage temperature -40°C +8					-40°C +8	5	
Humidity (not condensed)					0 90 %	6		
	<b>EMC</b> (for industrial environments)							
	DIRECTIVE	: 2	004	/ 10	8	/ EC		
	Immunity	EN	6100	0-6-	2			
	Emission	ΕN	6100	0-6-	4			

HOUSING Material Self-extinguishing plastic Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g. Weight

8

**(D) DATEXEL** 

#### ISOLATED SPLITTER/CONVERTER FOR VOLTAGE AND CURRENT CONFIGURABLE BY DIP-SWITCH OR PC



Power supply voltage 18 .. 30 Vdc

Rever. polarity protection 60 Vdc max

1500 Vac,

**TEMPERATURE AND HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5 about 90 g.

Self-extinguishing plastic

CE

DIRECTIVE : 2004 / 108 / EC

50 Hz, 1 min

55 mA max.

25 mA max

-20°C ... +60°C

-40°C .. +85°C

0..90%

**CURRENT CONSUMPTION** 

**POWER SUPPLY** 

Current output

Voltage output

**ISOLATION** 

Among all the

Operative temperature

Humidity (not condensed)

Immunity EN 61000-6-2

Storage temperature

ways

Emission HOUSING

Material

Weight

Δ

4632

DAT

#### GENERAL DESCRIPTION

The isolated Splitter/converter DAT 4631 D is able to measure voltage and current signals. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for voltage and current
- Double output configurable in current or voltage

Min

0 V

0 mA

± 0.05 % f.s.

>= 1 MΩ <= 50 Q

± 0.01 % / °C

- Configurable by dip-switch or PC
- High accuracy

INPUT

Voltage

Current

Volt

mΑ

V, mA

Volt

Current

Full scale

Input type

Calibration (1)

Linearity (1)

Input impedance

Thermal drift (1)

**Application areas** 

Span min

1 V

1 mA

Max

10 V

the higher of  $\pm 0.1$  % f.s. and  $\pm 2$  mV

the higher of  $\pm 0.1$  % f.s. and  $\pm$  6 uA

20 mA

- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

- On-field reconfigurable

- EMC compliant - CE mark

- Galvanic isolation among the ways

ndustries south maching	Energy	ood business wat	st treatmen					
OUTPUT (2 CHANN	IELS)							
Output type	Min	Мах	Span min					
Current	0 mA	20 mA	4 mA					
Voltage	0 V	10 V	1 V					
Output calibration	Output calibration							
Current		± 7 uA						
Voltage		± 5 mV						
Burn-out values								
Max. output value		22 mA or 10.6 V						
Min. output value		0 mA or -0.6 V						
<b>Output load Resista</b>	ance - Rloa	d						
Current output	< 500 Ω							
Voltage output	> 10 KΩ							
Short circuit current		26 mA max						
Response time (10÷90	about 100 m	5						

(1) referred to the input Span (difference between max. and min.)

SLIM SERIES

#### ISOLATED MATHEMATICAL MODULE FOR VOLTAGE AND CURRENT INPUT CONFIGURABLE BY DIP-SWITCH OR PC

#### GENERAL DESCRIPTION

The isolated converter DAT 4632 D is able to measure voltage and current signals, execute a programmable mathematical function and provide on output a normalized current or voltage signal. The device guarantees high accuracy and performances stability both versus time and temperature.

#### **FEATURES**

- Configurable input for voltage and current
- Configurable output in current or voltage
- Calculation function (two independent outputs)
- Configurable by dip-switch or PC
- High accuracy

C	E	RoHS	Pb,	Ар
			lead-free	

plication a

	Industrie,	ard machin	Energ
		80 Hit 10	
reas		(VO)	

- On-field reconfigurable

- EMC compliant - CE mark

with EN-50022 and EN-50035

- Galvanic isolation among all the ways

Suitable for DIN rail mounting in compliance

POWER SU	POWER SUPPLY						
Power supply voltage 18 30 Vc							
Rever. polari	tion	60 Vdc max					
CURRENT CONSUMPTION							
Current outp	ut		55 m	nA max.			
Voltage outp	out		25 m	nA max.			
ISOLATION							
			) Vac, Iz, 1 n				
TEMPERATURE AND HUMIDITY							
Operative ter	npei	rature	2	-20°C +60°C			
Storage temp	perat	ture		-40°C +85°C			
Humidity (no	t cor	ndens	ed)	0 90 %			
EMC (for in	dus	trial	envir	onments)			
DIRECTIVE	: 2	004	/ 108	3 / EC			
Immunity	ΕN	6100	0-6-2				
Emission	EN	6100	0-6-4				
HOUSING							
Material	I Self-extinguishing plastic						
Dim. (mm)	W	хLх	H : 90	x 112 x 12.5			
Weight	abo	out 9	) g.				

INPUT (2 CH	INPUT (2 CHANNELS)						
Input type	Min	Мах	Span min				
Voltage	0 V	10 V	1 V				
Current	0 mA	20 mA	1 mA				
Calibration (1	)						
Volt	the higher o	f ±0.1 % f.s. a	nd ± 2 mV				
mA	the higher o	f ±0.1 % f.s. a	nd ± 6 uA				
Linearity (1)							
V, mA	± 0.05 % f.s.						
Input impeda	nce						
Volt	>= 1 MΩ						
Current	rrent <= 50 Ω						
Thermal drift (1)							
Full scale	± 0.01 % / °C						

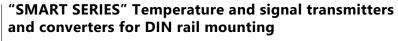
OUTPUT (2 CHANNELS)							
Output type	Min	Max	Span min				
Current	0 mA	20 mA	4 mA				
Voltage	0 V	10 V	1 V				
Output calibration							
Current	± 7 uA						
Voltage	± 5 mV						
Burn-out values							
Max. output value		22 mA or 10.6 V					
Min. output value		0 mA or -0.6 V					
Output load Resista	ance - Rloa	d					
Current output		< 500 Ω					
Voltage output	> 10 KΩ						
Short circuit current	26 mA max						
Response time (10÷90	about 100 ms						
(1) referred to the input Span (difference between max, and min.)							

(1) referred to the input Span (difference between max. and min.)

# 







The SMART series devices can accept on their input several types of signals coming from the field; the series is composed of:

- 4÷20 mA two wires isolated Transmitter for universal input (**DAT4035**)
- Isolated Converters for universal input with configurable output as voltage or current (**DAT**4135, **DAT** 4235)
- Isolated Converter for universal input with configurable output as voltage or current and trip amplifier (DAT4520)

#### INDEX

#### 12 • DAT 4035

- PC programmable Two wire isolated universal signal transmitter
- 13 **DAT 4135**

PC programmable isolated universal signal converter

DAT 4135/SEL 14 •

PC configurable universal signal converter with command of enable/disable output

#### 15 • **DAT 4235**

PC programmable 3 ways isolated universal signal converter

#### **DAT 4520** 16

Universal converter with Trip Amplifier

# SMART SERIES



())) DAIEXEL



SMARTTemperature and signalseriestransmitters and converters for<br/>DIN rail mounting

#### **DAT 4035**

## DATAZ TITTTTTTT

#### PC PROGRAMMABLE TWO WIRE ISOLATED UNIVERSAL TRANSMITTER

#### **GENERAL DESCRIPTION**

The transmitter DAT 4035 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal

even coming from a potentiometer connected on its input. Moreover the DAT 4035 is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer - 4 ÷ 20 mA configurable output on current loop
- On-field reconfigurable
- Galvanic isolation at 2000 Vac
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035









POWER SUPPLY		ISOLATION VOLT	AGE	<b>TEMPERATURE &amp; HUMIDITY</b>		
Power supply voltage	10 30 Vdc			Operative temperature		-20°C +70°C
		Input/Power supply	2000 Vac 50 Hz, 1 min.	Stor	age temperature	-40°C +85°C
Reverse polarity protection	60 Vdc max.			Humidity (not condensed)		0 90 %
EMC (for industrial enviro	onments)		HOUSING			
DIRECTIVE 2004/108/EC			Material		Self-extinguishing plastic	
Immunity	mmunity EN 61000-6-2 Dimensions (mm)			W x L x H : 90 x 112 x 12.5		
Emission EN 61000-6-4		Weight		about 90 g.		

INPUT				
Input type	I	Min	Max	Span min
TC (CJC int./ext.)				
J	-20	00°C	1200°C	2 mV
К	-20	00°C	1370°C	2 mV
S	-!	50°C	1760°C	2 mV
R	-!	50°C	1760°C	2 mV
В	4(	00°C	1820°C	2 mV
E	-20	00°C	1000°C	2 mV
Т	-20	00°C	400°C	2 mV
Ν	-20	00°C	1300°C	2 mV
RTD 2,3,4 wires				
Pt100	-20	00°C	850°C	50°C
Pt1000	-20	00°C	200°C	50°C
Ni100	-6	0°C	180°C	50°C
Ni1000	-6	0°C	150°C	50°C
Voltage				
mV	-40	0 mV	+400 mV	2 mV
mV	-10	00 mV	+700 mV	2 mV
Volt	- '	10 V	+10 V	500 mV
	0 Ω		200 Ω	10 %
Potentiometer (Nominal value)	200 Ω		500 Ω	10 %
(Normal value)	0.5 ΚΩ		50 KΩ	10 %
Resistance 2,3,4 wires				
Low	C	) Ω	300 Ω	10 Ω
High	C	) Ω	2000 Ω	200 Ω
Current mA	-10	) mA	+24 mA	2 mA
Input impedance				
TC, mV		>= 10 M	Ω	
Volt		>=1 M	Ω	
Current		~ 50 Ω		

INPUT					
Input calibration (1)					
RTD	the higher of $\pm 0.1\%$ f.s. and $\pm 0.2$ °C				
Res. Low	the higher of ±0.1% f.s. and ±0.15 $\Omega$				
Res. High	the higher of ±0.2% f.s. and ±1 $\Omega$				
mV, TC	the higher of $\pm 0.1\%$ f.s. and $\pm 18$ uV				
Volt	the higher of $\pm 0.1\%$ f.s. and $\pm 2 \text{ mV}$				
mA	the higher of $\pm 0.1\%$ f.s. and $\pm 6$ uA				
Linearity (1)					
TC	± 0.2 % f.s.				
RTD	± 0.1 % f.s				
Line resistance influence (1)					
TC, mV,V	<=0.4 uV/Ohm				
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)				
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)				
RTD excitation current					
Typical	0.350 mA				
CJC Comp.	± 0.5 °C				
Thermal drift (1)					
Full scale	± 0.01 % / °C				
CJC	± 0.01 % / °C				
Burn-out values					
Max. value output	about 22.5 mA				
Min. value output	about 3.6 mA				
Response time (10÷90% of f.s.)	about 400 ms				
1) referred to input Chan (difference between may and min values)					

(1) referred to input Span (difference between max. and min. values)

OUTPUT			
Output type	Min	Max	Span min
Direct current	4 mA	20 mA	4 mA
Reverse current	20 mA	4 mA	4 mA
Output calibration			
Current		± 7 uA	

#### PC PROGRAMMABLE ISOLATED UNIVERSAL SIGNAL CONVERTER



....

#### **GENERAL DESCRIPTION**

The converter DAT 4135 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal , conversion of a voltage signal even coming from a potentiometer connected on its input. Moreover the DAT 4135 is able to measure and linearise the standard thermocouples with internal cold junction compensation.

In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### FEATURES

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable
- Galvanic isolation at 2000 Vac
- Programming of the unit measure as  $^\circ C$  or  $^\circ F$
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with \_ EN-50022 and EN-50035











POWER SUPPLY		ISOLATION VOLTAGE			TEMPERATURE & HUMIDITY		
		Input/Power supply-Output 2000 Vac 50 Hz, 1 min.		Operative temperature		-20°C +70°C	
Power supply voltage	18 30 Vdc	OUTPUT LOAD RESISTANCE (RLOAD)					
		Current output	Current output $$		Storage temperatur	e	-40°C +85°C
Reverse polarity	60 Vdc max.	Voltage output>/= 3.5 KΩLimitation currentabout 25 mA		>/= 3.5 KΩ		b	0 00 0/
protection				Humidity (not condensed)		0 90 %	
CURRENT CONSUMPTION	I	EMC (for industrial environments)			HOUSING		
Current output	40 mA max.	DIRECTIVE 2004/1	DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	
		Immunity	Immunity EN 61000-6-2		Dimensions (mm)	W x L x H : 90 x	x 112 x 12.5
Voltage output	20 mA max.	Emission EN 61000-6-4		Weight	about 90 g.		

**Application areas** 

INPUT								
Input type	I	Min	Мах	Span min				
TC (CJC int./ext.)								
J	-20	00°C	1200°C	2 mV				
К	-20	00°C	1370°C	2 mV				
S	-!	50°C	1760°C	2 mV				
R	-!	50°C	1760°C	2 mV				
В	4(	00°C	1820°C	2 mV				
E	-20	00°C	1000°C	2 mV				
Т	-20	00°C	400°C	2 mV				
Ν	-20	00°C	1300°C	2 mV				
RTD 2,3,4 wires								
Pt100	-20	00°C	850°C	50°C				
Pt1000	-20	00°C	200°C	50°C				
Ni100	-60°C		180°C	50°C				
Ni1000	-6	0°C	150°C	50°C				
Voltage								
mV	-40	0 mV	+400 mV	2 mV				
mV	-10	00 mV	+700 mV	2 mV				
Volt	- '	10 V	+10 V	500 mV				
Detentioneten	0 Ω		200 Ω	10 %				
Potentiometer (Nominal value)		Ω 00	500 Ω	10 %				
	0	.5 ΚΩ	50 ΚΩ	10 %				
Resistance 2,3,4 wires								
Low	0	Ω (	300 Ω	10 Ω				
High	0	Ω (	2000 Ω	200 Ω				
Current mA	-10	) mA	+24 mA	2 mA				
Input calibration (1)								
RTD		the high	ner of ±0.1 % f.s.	and ±0.2°C				
Res. Low		the high	ner of ±0.1 % f.s.	and ±0.15 Ω				
Res. High		the higher of $\pm 0.2$ % f.s. and $\pm 1 \Omega$						
mV, TC		the higher of $\pm 0.1$ % f.s. and $\pm 18$ uV						
Volt		the higher of $\pm 0.1$ % f.s. and $\pm 2$ mV						
mA		the higher of $\pm 0.1$ % f.s. and $\pm 6$ uA						

INPUT						
Input impedance						
TC, mV	>= 10 MΩ					
Volt	>=1 MΩ					
Current	~ 50 Ω					
Linearity (1)						
TC	± 0.2 % f.s.					
RTD	± 0.1 % f.s					
Line resistance influence (1)						
TC, mV,V	<=0.8 uV/Ohm					
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)					
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)					
RTD excitation current						
Typical	0.350 mA					
CJC Comp.	± 0.5°C					
Thermal drift (1)						
Full scale	± 0.01 % / °C					
CJC	± 0.01 % / °C					
Burn-out values						
Max. value output	about 23 mA or 10.8 Vdc					
Min. value output	about 0 mA or 0 Vdc					
Response time (10÷90% of f.s.) about 400 ms						
(1) referred to input Span (difference between max. and min. values)						

OUTPUT									
Output type	Min	Max	Span min						
Direct current	0 mA	20 mA	4 mA						
Reverse current	20 mA	0 mA	4 mA						
Direct voltage	0 V	10 V	1 V						
Reverse voltage	10 V	0 V	1 V						
Output calibration									
Current	± 7 uA								
Voltage	± 5 mV								

#### **(D)** D**L**TEXEL

**DAT 4135/SEL** 

#### PC CONFIGURABLE UNIVERSAL SIGNAL CONVERTER WITH COMMAND OF ENABLE/DISABLE OUTPUT

#### **GENERAL DESCRIPTION**

The converter DAT 4135/SEL is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4135/SEL is able to measure and linearise the standard thermocouples with internal cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### FEATURES

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable

CE VIER CONSISTENCE ROLLER





- Galvanic isolation at 2000 Vac

- EMC compliant – CE mark

EN-50022 and EN-50035

- Programming of the unit measure as °C or °F

- Suitable for DIN rail mounting in compliance with

POWER SUPPLY		ISOLATION VOLTAGE		SEL INPUT COMMAND			
		Input/Power supply-Output 2000 Vac 50 Hz, 1 min.		Disable output 4÷30 Vdc			
Power supply voltage	18 30 Vdc	OUTPUT LOAD RESISTANCE (RLOAD)		ce (rload)	Enable output	0 Vdc or n	ot connected
		Current output		= 650 Ω</td <td><b>TEMPERATURE &amp; HUN</b></td> <td><b>/IDITY</b></td> <td></td>	<b>TEMPERATURE &amp; HUN</b>	<b>/IDITY</b>	
Reverse polarity	60 Vdc max.	Voltage output		>/= 3.5 KΩ	Operative temperature		
protection	Limitation current			20 mA max.	• •		-20°C +70°C
	-				Storage temperature		-40°C +85°C
CURRENT CONSUMPTION	CURRENT CONSUMPTION		EMC (for industrial environments)		Humidity (not condensed)		0 90 %
Current output	40 mA max.	DIRECTIVE 2004/1	08/EC		HOUSING		
	Immunity		EN 61000-6-2		Material	Self-exting	uishing plastic
Valtara autout	20 mA max.	Emission EN 61000-6-4		Dimensions (mm)	W x L x H :	90 x 112 x 12.5	
Voltage output	20 MA Max.			000-6-4	Weight	about 90 g	

INPUT							
Input type	I	Min	Мах	Span min			
TC (CJC int./ext.)							
J	-20	00°C	1200°C	2 mV			
К	-200°C		1370°C	2 mV			
S	-!	50°C	1760°C	2 mV			
R	-!	50°C	1760°C	2 mV			
В	4(	00°C	1820°C	2 mV			
E	-20	00°C	1000°C	2 mV			
Т	-20	00°C	400°C	2 mV			
Ν	-20	00°C	1300°C	2 mV			
RTD 2,3,4 wires							
Pt100	-20	00°C	850°C	50°C			
Pt1000	-20	00°C	200°C	50°C			
Ni100	-6	0°C	180°C	50°C			
Ni1000	-60°C		150°C	50°C			
Voltage							
mV	-40	0 mV	+400 mV	2 mV			
mV	-10	0 mV	+700 mV	2 mV			
Volt	- 1	10 V	+10 V	500 mV			
Detentioneten	0 Ω		200 Ω	10%			
Potentiometer (Nominal value)	20	Ω 00	500 Ω	10%			
(	0.5 KΩ		50 ΚΩ	10%			
Resistance 2,3,4 wires							
Low	C	Ω	300 Ω	10 Ω			
High	C	Ω	2000 Ω	200 Ω			
Current mA	-10	) mA	+24 mA	2 mA			
Input calibration (1)							
RTD		the high	ner of ±0.1% f.s. a	and ±0.2°C			
Res. Low		the high	ner of ±0.1% f.s. a	and ±0.15 Ω			
Res. High		the high	ner of ±0.2% f.s.	and $\pm 1 \Omega$			
mV, TC		the higher of $\pm 0.1\%$ f.s. and $\pm 18$ uV					
Volt		the higher of $\pm 0.1\%$ f.s. and $\pm 2 \text{ mV}$					
mA		the higher of $\pm 0.1\%$ f.s. and $\pm 6$ uA					

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Volt	>=1 MΩ
Current	~ 50 Ω
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV,V	<=0.8 uV/Ohm
RTD 3 wires	0.05%/Ω (50 Ω balanced max.)
RTD 4 wires	0.005%/Ω (100 Ω balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC Comp.	± 0.5°C
Thermal drift (1)	
Full scale	± 0.01% / °C
CJC	± 0.01% / °C
Burn-out values	
Max. value output	about 23 mA or 10.8 Vdc
Min. value output	about 0 mA or 0 Vdc
Response time (10÷90% of f.s.)	about 400 ms

(1) referred to input Span (difference between max. and min. values)

OUTPUT			
Output type	Min	Мах	Span min
Direct current	0 mA	20 mA	4 mA
Reverse current	20 mA	0 mA	4 mA
Direct voltage	0 V	10 V	1 V
Reverse voltage	10 V	0 V	1 V
Output calibration			
Current	± 7 uA		
Voltage	± 5 mV		

IN

#### PC PROGRAMMABLE 3 WAYS ISOLATED UNIVERSAL SIGNAL CONVERTER



INDUT

#### **GENERAL DESCRIPTION**

The converter DAT 4235 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a standard active current signal , conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4235 is able to measure and linearise the standard thermocouples with internal cold junction compensation. In function of programming, the measured values are converted in a current or voltage signal. The device guarantees high accuracy and performances stability both in time and in temperature.

#### **FEATURES**

- Configurable input for RTD, TC, mV, V, mA, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- Configurable output in current or voltage
- On-field reconfigurable







- Galvanic isolation at 2000 Vac on the 3 ways

- Programming of the unit measure as °C or °F

- Suitable for DIN rail mounting in compliance with

- EMC compliant – CE mark

EN-50022 and EN-50035

POWER SUPPLY		ISOLATION VOLTAGE			TEMPERATURE & HUMIDITY		
		Input/Power supply-Output 2000 Vac 50 Hz, 1 min.		Operative temperature		-20°C +70°C	
Power supply voltage	18 30 Vdc	OUTPUT LOAD RES	ISTANC	E (RLOAD)	- F		
		Current output		= 650 Ω</td <td colspan="2">Storage temperature</td> <td>-40°C +85°C</td>	Storage temperature		-40°C +85°C
Reverse polarity	60 Vdc max.	Voltage output		>/= 600 Ω		b.	<b>a a a a a a a a a a</b>
protection		Limitation current 30 mA m		30 mA max.	Humidity (not condensed)		0 90 %
CURRENT CONSUMPTION	I	EMC (for industrial environments)			HOUSING		
Current output	70 mA max.	DIRECTIVE 2004/1	DIRECTIVE 2004/108/EC		Material Self-extinguishing pla		uishing plastic
		Immunity EN 610		00-6-2	Dimensions (mm)	WxLxH:	90 x 112 x 12.5
	50 4			,			
Voltage output 50 mA m		Emission EN 61000-6-4		Weight about 90 g.			

INPUT								
Input type	I	Min	Мах	Span min				
TC (CJC int./ext.)			_					
J	-20	00°C	1200°C	2 mV				
К	-200°C		1370°C	2 mV				
S	-!	50°C	1760°C	2 mV				
R	-!	50°C	1760°C	2 mV				
В	4(	00°C	1820°C	2 mV				
E	-20	00°C	1000°C	2 mV				
Т	-20	00°C	400°C	2 mV				
Ν	-20	00°C	1300°C	2 mV				
RTD 2,3,4 wires								
Pt100	-20	00°C	850°C	50°C				
Pt1000	-20	00°C	200°C	50°C				
Ni100	-60°C		180°C	50°C				
Ni1000	-6	0°C	150°C	50°C				
Voltage								
mV	-40	0 mV	+400 mV	2 mV				
mV	-10	00 mV	+700 mV	2 mV				
Volt	- 1	10 V	+10 V	500 mV				
Detentioneten	0 Ω		200 Ω	10%				
Potentiometer (Nominal value)	20	Ω 00	500 Ω	10%				
	0.5 ΚΩ		50 ΚΩ	10%				
Resistance 2,3,4 wires								
Low		Ω	300 Ω	10 Ω				
High	C	Ω (	2000 Ω	200 Ω				
Current mA	-10	) mA	+24 mA	2 mA				
Input calibration (1)								
RTD		the high	her of $\pm 0.1$ % f.s.	and ±0.2°C				
Res. Low		the higher of ±0.1 % f.s. and ±0.15 $\Omega$						
Res. High		the high	ner of ±0.2 % f.s.	and $\pm 1\Omega$				
mV, TC		the higher of $\pm 0.1$ % f.s. and $\pm 18$ uV						
Volt		the higher of $\pm 0.1$ % f.s. and $\pm 2$ mV						
mA		the higher of $\pm 0.1$ % f.s. and $\pm$ 6 uA						

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Volt	>=1 MΩ
Current	~ 50 Ω
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV,V	<=0.8 uV/Ohm
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC Comp.	± 0.5℃
Thermal drift (1)	
Full scale	± 0.01 % / °C
CJC	± 0.01 % / °C
Burn-out values	
Max. value output	about 25 mA or 10.8 Vdc
Min. value output	about -25 mA or -10.8 Vdc
Response time (10÷90% of f.s.)	about 400 ms
	and the state of the second second second second second

(1) referred to input Span (difference between max. and min. values)

OUTPUT			
Output type	Min	Max	Span min
Direct current	-20 mA	20 mA	4 mA
Reverse current	20 mA	-20 mA	4 mA
Direct voltage	-10 V	10 V	1 V
Reverse voltage	10 V	-10 V	1 V
Output calibration			•
Current	± 7 uA or ± 1	5 uA (2)	
Voltage	± 10 mV		

(2) referred to the output ± 20 mA.

#### **DAT 4520**



#### **GENERAL DESCRIPTION**

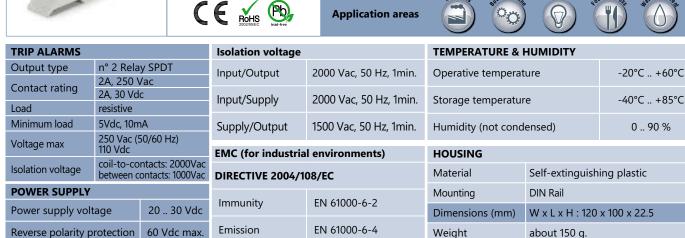
The DAT 4520 device measures mV, V, mA or resistance signals, and can be directly connected to Thermocouple, RTD or potentiometer sensors.

The input signal is filtered, linearised, amplified and transfered to the output circuit, that converts it in a 0-10V range or 0-20mA range signal. Auxiliary power supply allows to supply the output current loop. Moreover, the device is able to control two trip alarm relay outputs. DAT 4520 has a 3 way isolation: input is 2000 Vac isolated from power supply and output; power supply and output are 1500 Vac isolated between them.

#### FEATURES

- Configurable input for Tc, RTD, Res, mV, V, mA, Potentiometer
- High accuracy
- Configurable by Personal Computer
- 0 to 10V, 0 to 20mA configurable output
- On-field reconfigurable

- 2000 Vac galvanic isolation between input, output
- Programming of the unit measure as °C or °F
- EMC compliance CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



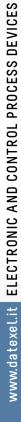
INPUT							
Input type	Min	Max	Span min				
TC (CJC int./ext.)							
J	-200°C	1200°C	2 mV				
К	-200°C	1370°C	2 mV				
S	-50°C	1760°C	2 mV				
R	-50°C	1760°C	2 mV				
В	400°C	1820°C	2 mV				
E	-200°C	1000°C	2 mV				
Т	-200°C	400°C	2 mV				
Ν	-200°C	1300°C	2 mV				
RTD 2,3,4 wires							
Pt100	-200°C	850°C	50°C				
Pt1000	-200°C	200°C	50°C				
Ni100	-60°C	180°C	50°C				
Ni1000	-60°C	150°C	50°C				
Voltage							
mV	-100 mV	+700 mV	2 mV				
Volt	0 mV	10 V	500 mV				
Detertionster	0 Ω	200 Ω	10%				
Potentiometer (Nominal value)	200 Ω	500 Ω	10%				
	0.5 KΩ	50 ΚΩ	10%				
Resistance 2,3,4 wires							
Low	0 Ω	300 Ω	10 Ω				
High	0 Ω	2000 Ω	200 Ω				
Current mA	0 mA	20 mA	2 mA				

Input calibration (1)	
RTD	the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C
Res. Low	the higher of ±0.1 % f.s. and ±0.15 $\Omega$
Res. High	the higher of ±0.2 % f.s. and ±1 $\Omega$
mV, TC	the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV
Volt	the higher of $\pm 0.1$ % f.s. and $\pm 2$ mV
mA	the higher of $\pm 0.1$ % f.s. and $\pm 6$ uA

INPUT			
Input impedance			
TC, mV	>= 10 MΩ		
Volt	>=1 MΩ		
Current	~ 50 Ω		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence (1)			
TC, mV,V	<=0.8 uV/Ohm		
RTD 3 wires	0.05 %/Ω (50 Ω balanced max.)		
RTD 4 wires	0.005 %/Ω (100 Ω balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC Comp.	± 0.5°C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Response time (10÷90% of f.s.)	about 400 ms		

(1) referred to input Span (difference between max. and min. values)

ОИТРИТ					
Output type	Min	Max	Span min		
Direct voltage	0 V	10 V	1 V		
Direct current	0 mA	20 mA	4 mA		
Output calibration					
Current	± 7 uA				
Voltage	± 10 mV				
Output Load Resistance					
Current	< 650 Ω				
Voltage	> 4.7 KΩ				





DAT4035

HIIIIIIII

DAT4135

LASSAN LAND









#### Intrinsically safe smart series ATEX94/9/EC 😔

The Intrinsically Safe SMART Series devices, type-approved according to Directive ATEX94/9/EC, are subdivided into three different product categories: universal input transmitters to be installed in a potentially explosive atmosphere (Zone 0) codes: DAT 2015 IS, DAT 4035 IS, DAT 1010 IS, DAT 1015 IS, DAT 1065 IS.

Converters / Barriers for universal input or current loop (0-4....20 mA), suitable for installation in safe zone for connections towards zone 0. codes:

#### DAT 4235 IS in the following versions:

**A**= Converter/Barrier, **B**= Double trip amplifier,

**C**= Converter/Barrier + Double trip amplifier.

#### DAT 5030 IS in the following versions:

**A**= Single-channel barrier, **AH**= HART transparent single-channel barrier, **B**= Double-channel barrier, **BH**= HART transparent double-channel barrier.

#### INDEX

- 20 DAT 2015IS DAT 2015 IS/HT Universal Intrinsically Safe transmitter
- 21 DAT 4035 IS DAT 4035 IS/HT Universal Intrinsically Safe isolated transmitter

#### 22 • DAT 4235 IS

Signal Converter with Trip Amplifier for hazardous area sensors

#### 23 • DAT 5030 IS Current Loop Repeater / Supply for hazardous area sensors

- 24 DAT 1010 IS DAT 1010 IS/HT Intrinsically safe PC configurable transmitter for RTD
- 25 DAT 1015 IS DAT 1015 IS/HT Intrinsically safe PC configurable transmitter for universal input
- 26 DAT 1065 IS DAT 1065 IS/HT Isolated Intrinsically safe PC configurable transmitter for universal input

SMART ATEX SERIES



## 03

#### **ODAIEXEL**



**SMART** Transmitters and converters **ATEX** for use in potentially explosive **series** atmospheres



#### **GENERAL DESCRIPTION**

The transmitter DAT 2015 IS is able to execute many functions such as measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 2015 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

**Application areas** 

#### FEATURES

- Configurable input for RTD, mV, Tc, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
   4 ÷ 20 mA configurable output on current loop
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark

- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

l					
POWER SUPPLY		<b>TEMPERATURE &amp; HUMIDI</b>	EX DATA		
	11 2014	Operativo temperaturo	Diperative temperature -20 C +70 C	Output /supply	Input
Power supply voltage	11 30 Vdc	Operative temperature		Ui = 30 V	Uo = 6.2 V
Reverse polarity	(0)/1	Storage temperature	-40°C +85°C	li = 100 mA	lo = 100 mA
protection	60 Vdc max.	Humidity (not condensed)	0 90 %	Pi = 0.75 W	Po = 500 mW
EMC (for industrial envi	EMC (for industrial environments) HOUSING			Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Ci = 10 nF	Co = 5 uF
Immunity	EN 61000-6-2	Dimensions (mm)	W x L x H : 90 x 112 x 12.5 T6 : -20 ÷ +55 T5 : -20 ÷ +70		
Emission	EN 61000-6-4	Weight	about 90 g.	T4:-20 ÷ +85	

INPUT						
Input type	Min	Max	Span min			
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
К	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
т	-200°C	400°C	2 mV			
Ν	-200°C	1300°C	2 mV			
RTD 2,3,4 wires		_				
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage		_				
mV	-100 mV	+700 mV	2 mV			
	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
,	0.5 ΚΩ	2 ΚΩ	10%			
RES. 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			

INPUT			
Input calibration (1)			
RTD	the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C		
Res. Low	the higher of ±0.1 % f.s. and ±0.15 $\Omega$		
Res. High	the higher of ±0.2 % f.s. and ±1 $\Omega$		
mV, TC	the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV		
Input impedance			
TC, mV	>= 10 MΩ		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence (1)			
TC, mV,V	<=0.4 uV/Ohm		
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)		
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC comp.	± 0.5 °C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Burn-out values			
Max. output value	about 22.5 mA		
Min. output value	about 3.6 mA		
Response time (10÷90% of f.s.)	about 400 ms		
(1) referred to input Span (differe	ence between max. and min. values)		

(1) referred to input Span (difference between max. and min. values)

OUTPUT						
Output type		Min	Max	Span min		
Direct current		4 mA	20 mA	4 mA		
Reverse current		20 mA	4 mA	4 mA		
Output calibration						
Current		±7uA				

20

#### UNIVERSAL INTRINSICALLY SAFE TRANSMITTER



#### UNIVERSAL INTRINSICALLY SAFE ISOLATED TRANSMITTER



#### **GENERAL DESCRIPTION**

The isolated transmitter DAT 4035 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 4035 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

The device guarantees high accuracy and performances stability both in time and in temperature.

#### FEATURES

- Configurable input for RTD, mV, Tc, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- Galvanic isolation at 2000 Vac
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark

Energy

- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

	CE		Application areas	energy used mark	All
POWER SUPPLY		TEMPERATURE & HUMIDITY		EX DATA	
			-20°C +70°C	Output /supply	Input
Power supply voltage	11 30 Vdc	Operative temperature	-20°C +85°C (vers. 'HT')	Ui = 30 V	Uo = 6.2 V
Reverse polarity	(0)(1	Storage temperature	-40°C +85°C	li = 100 mA	lo = 100 mA
protection	60 Vdc max.	Humidity (not condensed	d) 0 90 %	Pi = 0.75 W	Po = 500 mW
EMC (for industrial enviro	onments)	HOUSING		Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Ci = 10 nF	Co = 5 uF
Immunity E	N 61000-6-2	Dimensions (mm)	W x L x H : 90 x 112 x 12.5	T6 : -20 T5 : -20	
Emission E	N 61000-6-4	Weight	about 90 g.	T4:-20 ÷ +85	

INPUT						
Input type	Min	Max	Span min			
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
К	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
т	-200°C	400°C	2 mV			
Ν	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage						
mV	-100 mV	+700 mV	2 mV			
	0 Ω	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
(	0.5 ΚΩ	2 ΚΩ	10%			
RES. 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			

INPUT			
Input calibration (1)			
RTD	the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C		
Res. Low	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$		
Res. High	the higher of ±0.2 % f.s. and ±1 $\Omega$		
mV, TC	the higher of ±0.1 % f.s. and ±10 uV		
Input impedance			
TC, mV	>= 10 MΩ		
Linearity (1)			
TC	± 0.2 % f.s.		
RTD	± 0.1 % f.s		
Line resistance influence (1)			
TC	<=0.8 uV/Ohm		
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)		
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)		
RTD excitation current			
Typical	0.350 mA		
CJC comp.	± 0.5 °C		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
CJC	± 0.01 % / °C		
Burn-out values			
Max. output value	about 22.5 mA		
Min. output value	about 3.6 mA		
Response time (10÷90% of f.s.)	about 400 ms		
(1) referred to input Span (difference between max. and min. values)			

OUTPUT					
Output type		Min	Мах	Span min	
Direct current		4 mA	20 mA	4 mA	
Reverse current		20 mA	4 mA	4 mA	
Output calibration					
Current		±7uA			

#### **ODVIEXER**

#### DAT 4235 IS

DACEXEL

ATEX IS

#### SIGNAL CONVERTER WITH TRIP AMPLIFIER FOR HAZARDOUS AREA SENSORS

#### GENERAL DESCRIPTION

The DAT 4235 IS device is a galvanic isolated Intrinsically Safety Barrier, defined as "Associated Apparatus". The input measures mV, V, mA or resistance signals, and can be directly connected to Thermocouple, RTD or potentiometer sensors. The input signal is filtered, linearized, amplified and transfered to the output circuit, that converts it in a 0-10V range or 0-20mA range signal.

#### FEATURES

- Configurable input Tc, RTD, Res, mV, V, mA, Potentiometer
- High accuracy
  Configurable by PC

- 0 to 10V, 0 to 20mA configurable output
- 2000 Vac galvanic isolation between input and output
- Programming of the unit measure as °C / °F
- EMC compliance CE mark
- PROTECTION MODE: II (1) G D [ Ex ia ] IIC [ Ex iaD] in according to the Directive ATEX 94/9/EC
- Suitable for DIN rail mounting in according to EN-50022
- Available in 3 different versions:
- DAT4235 IS A Signal converter
- DAT4235 IS B Double trip amplifier
- DAT4235 IS C Signal converter + Double trip amplifier
- **TRIP ALARMS** ISOLATION **TEMPERATURE & HUMIDITY** EX DATA Terminals A-B-C-D; E-F-G-H-I-J; K-L Output type n° 2 Relays SPDT 2000 Vac, Input/Output Operative Um=250V 50 Hz, 1min. -20°C .. +60°C 2A, 250 Vac Contact rating temperature 2A , 30 Vdc Terminals Terminals 2000 Vac, Input/Supply 50 Hz, 1min. 1-2-3-4-5-6-7 5-6-7 Load resistive Humidity (not 0..90% 1500 Vac, Uo = 7.8 V Minimum load 5Vdc, 10mA Uo = 30 V condensed) Supply/Output 50 Hz, 1min Max Voltage 250 Vac (50/60 Hz) 110 Vdc lo = 32 mA li = 100 mA EMC (for industrial environments) HOUSING coil-to-contacts: 2000Vac Po = 140 mW Pi = 0.75W Self-extinguish plastic Isolation between contacts: 1000Vac **DIRECTIVE 2004/108/EC** Material Lo = 20 mH Li = ~0 mH **POWER SUPPLY DIN Rail** Mounting Immunity EN 61000-6-2 Ci = 24 nF 20 .. 30 Vdc Power supply voltage Co = 2 uFDimensions 120 x 100 x 22.5 Emission EN 61000-6-4 Ta : -20 ÷ +55°C Reverse polarity protection 60 Vdc max Weight about 150 g.

**Application areas** 

INPUT						
Input type	I	Min	Мах	Span min		
TC CJC int./ext.						
l	-20	00°C	1200°C	2 mV		
К	-20	00°C	1370°C	2 mV		
S	-50°C		1760°C	2 mV		
R	-!	50°C	1760°C	2 mV		
В	4(	00°C	1820°C	2 mV		
E	-20	00°C	1000°C	2 mV		
т	-200°C		400°C	2 mV		
Ν	-200°C		1300°C	2 mV		
RTD 2,3,4 wires						
Pt100	-200°C		850°C	50°C		
Pt1000	-200°C		200°C	50°C		
Ni100	-60°C		180°C	50°C		
Ni1000	-60°C		150°C	50°C		
Voltage	1					
mV	-10	00 mV	+700 mV	2 mV		
V	0 V		10 V	500 mV		
Current mA	0 mA		20 mA	2 mA		
Detentiometer		0 Ω	200 Ω	10%		
Potentiometer (Nominal value)	200 Ω		500 Ω	10%		
(	0.5 KΩ		2 ΚΩ	10%		
Resistance						
Low	0 Ω		300 Ω	10 Ω		
High	0 Ω		2000 Ω	200 Ω		
Input calibration (1)						
RTD	-		ner of ±0.1 % f.s. and ±0.2 °C			
Res. Low			her of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$			
Res. High			her of $\pm 0.2$ % f.s. and $\pm 1 \Omega$			
mV, TC	-		ner of ±0.1 % f.s. and ±10 uV			
V			the higher of $\pm 0.2$ % f.s. and $\pm 2$ $\Omega$			
mA		the higher of $\pm 0.1$ % f.s. and $\pm 6$ uV				

INPUT				
Input impedance				
TC, mV	>= 10 MΩ			
V	>= 1 MΩ			
mA	<= 50 Ω			
Linearity				
TC	± 0.2 % f.s.			
RTD	± 0.1 % f.s			
Line resistance influence				
TC, mV,V	<=0.8 uV/Ohm			
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)			
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)			
RTD excitation current				
Typical	0.350 mA			
CJC comp.	± 0.5℃			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
CJC	± 0.01 % / °C			
Response time (10÷90% of f.s.)	about 0.4 sec.			

(1) referred to input Span (difference between max. and min. values)

OUTPUT					
Output type		Min	Мах	Span min	
Voltage		0 V	10 V	1 V	
Current	0 mA 20 mA 4 mA				
Output calibration					
Current	± 7	± 7 uA			
Voltage	± 10 mV				
Output Rload resistance					
Current		< 650 Ω			
Voltage		> 4.7 KΩ			

22

DAT 5030 IS		the current loop through	a galvanic isolated 20 mA or 4-20 mA the hazardous area I in output as volta	a current loops, both acti a (ZONE 0). ge signal (0-10V or 2-10'	ve or passive mode; a	uxiliary power su	pply is available to supply A). Auxiliary power supply
a baterra		FEATURES - 0-20mA or 4-20mA active or passive configurable input - 0-10V, 2-10V, 0-20mA, 4-20mA configurable output - Configurable by DIP – switch - Single or Double Channel - HART Compatible on request - Galvanic isolation on all ways - Power supply for current loop in hazardous area (ZONE 0) - EMC compliance – CE Mark			<ul> <li>PROTECTION MODE: II (1) G D [ Ex ia ] IIC - [ Ex iaD ] according to the Directive ATEX 94/9/EC</li> <li>Din Rail mounting suitable in according to EN-5002;</li> <li>Available in 4 different versions:</li> <li>DAT5030 IS A Single channel</li> <li>DAT5030 IS B Double channel</li> <li>DAT5030 IS AH Single channel HART compatible</li> <li>DAT5030 IS BH Double channel HART compatible</li> </ul>		
Contraction				plication areas	Industries Everal	Juster Wealing	some mice/ogg
POWER SUPPLY			TEMPERATU	RE & HUMIDITY		HOUSING	
Power supply voltage		20 ÷ 30 Vdc	Operating ter	Operating temperature		Material	Self-extinguish plastic
Current consumption		80 mA per channel with Vaux operating	Storage temperature		-40 ÷ 85 °C	Mounting	DIN Rail
Reverse polarity protec	tion	60 Vdc max.	Relative humidity (not condensed) 0 90 %		Dimensions (mm)	120 x 100 x 22.5	
ISOLATION			EMC (for ind	EMC (for industrial environments)			
Input/Output	2000	Vac @ 50 Hz, 1min.	DIRECTIVE 2004/108/EC			Cincela Chi	
Input/Supply	2000	Vac @ 50 Hz, 1min.			2	Single CH	about 100 g.
Supply/Output	1500	Vac @ 50 Hz, 1min.	Immunity EN 61000-6-2		2		1 140
Between channels 2000 Vac @ 50 Hz, 1min.		Emission EN 61000-6-4		4 Double CH about 160		about 160 g.	
NPUT				EX DATA			
nput signal			loop Terminals J-I; A-B-C-D; O-P-Q-R Um=250V				

INPUT	
Input signal	Active or passive current loop
Range	
Configurable	0÷20 mA , 4÷20 mA
Zero regulation	± 5 %
Span regulation	± 5 %
Auxiliary Supply	> 15V @ 20mA
Input impedance	< 25 Ω

OUTPUT	
Output signal	
Configurable	4÷20 mA, 0÷20 mA, 0÷10 V and 2÷10 V
Output Rload resistance	
Voltage	> 5 KΩ
Current	< 500 Ω
Auxiliary Supply	> 12V @ 20mA

PERFORMANCES	
Calibration error	± 0.1 % of f.s.
Linearity error (*)	± 0.2 % of f.s.
Thermal drift	0.02 % of Full scale/°C
Response time (10÷90% of f.s.)	< 0.2 sec.
Frequency response (HART Protocol)	bidirectional 0.5 ÷ 4 Khz @ 3dB

(\*) = inclusive of hysteresis, power supply variation and linearisation error.

EX DATA					
Terminals J-I; A-B-C-D; O-P-Q-R Um=250V					
Terminals 4-6; 14-16;					
Uo = 26.4 V	Ui = 30 V				
lo = 93 mA	li = 100 mA				
Po = 615 mW	Pi = 0.75W				
Lo = 4.2 mH	Li = ~0 mH				
Co = 75 nF	Ci = 12 nF				
Terminals 6-5; 16-15;					
Uo = 1.2 V	Ui = 30 V				
lo = 46 mA	li = 100 mA				
Po = 14 mW	Pi = 0.75W				
	Li = ~0 mH				
	Ci = 12 nF				
Ta : -:	20 ÷ +60°C				

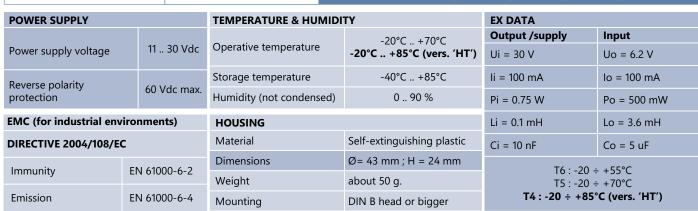
### DAT 1010 IS DAT 1010 IS/HT **GENERAL DESCRIPTION** The transmitter DAT 1010 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. The measured values are converted in a 4÷20 mA current signal. The device guarantees high accuracy and performances stability both in time and in temperature. FEATURES Configurable input for RTD, mV, Resistance and - Applicable in zones with explosion risk (ZONE 0) - Programming of the unit measure as °C or °F Potentiometer - EMC compliant - CE mark - High accuracy - Configurable by Personal Computer PROTECTION MODE: II 1 G Ex ia IIC certified in DATEXE - 4 ÷ 20 mA configurable output on current loop according to the Directive ATEX 94/9/EC

**Application areas** 

- On-field reconfigurable

Suitable for DIN B in-head mounting

 $\langle \gamma \rangle$ 



INPUT						
Input type	I	Min	Max	Span min		
RTD 2,3,4 wires						
Pt100	-20	00°C	850°C	50°C		
Pt1000	-20	00°C	200°C	50°C		
Ni100	-6	0°C	180°C	50°C		
Ni1000	-6	0°C	150°C	50°C		
Voltage						
mV	-10	00 mV	+700 mV	2 mV		
		0 Ω	200 Ω	10%		
Potentiometer (Nominal value)	20	Ω 00	500 Ω	10%		
(**************************************	0.5 ΚΩ		2 ΚΩ	10%		
RES. 2,3,4 wires						
Low	C	Ω (	300 Ω	10 Ω		
High	C	Ω (	2000 Ω	200 Ω		
Input calibration (1)						
RTD		5	ner of ±0.1 % f.s.			
Res. Low		the higher of ±0.1 % f.s. and ±0.15 $\Omega$				
Res. High		the higher of ±0.2 % f.s. and ±1 $\Omega$				
mV		the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV				
Input impedance						
mV		>= 10 M	Ω			
Linearity (1)						
RTD		± 0.1 %	f.s			

INPUT				
Line resistance influence (1)				
mV	<=0.8 uV/Ohm			
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)			
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)			
RTD excitation current				
Typical	0.350 mA			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
Burn-out values				
Max. output value	about 22.5 mA			
Min. output value	about 3.6 mA			
Response time (10÷90% of f.s.)	about 400 ms			

(1) referred to input Span (difference between max. and min. values)

OUTPUT						
Output type	Min	Мах	Span min			
Direct current	4 mA	20 mA	4 mA			
Reverse current	20 mA	4 mA	4 mA			
Output calibration						
Current ± 7 uA						

SMART ATEX SERIES

24

### INTRINSICALLY SAFE PC CONFIGURABLE TRANSMITTER FOR UNIVERSAL INPUT

	E PC CC		-					
DAT 1015 IS DAT 1015 IS/HT		The tran RTDs se on its in pensatio	<b>GENERAL DESCRIPTION</b> The transmitter DAT 1015 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. Moreover the DAT 1015 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal. The device guarantees high accuracy and performances stability both in time and in temperature.					
	e	Poter - High - Confi - 4 ÷ 2	IRES gurable input for RTD, mV, TC, R ntiometer accuracy gurable by Personal Computer 0 mA configurable output on cur eld reconfigurable	- Pro - EM - PR - PR acc	blicable in zones with explosion risk (ZONE 0) gramming of the unit measure as °C or °F C compliant – CE mark DTECTION MODE: II 1 G Ex ia IIC certified in ording to the Directive ATEX 94/9/EC table for DIN B in-head mounting			
				Industries	Energy 30er treatment	senemical offer		
		CE	ROUTE REALFREE EX Ap	oplication areas				
POWER SUPPLY		Ce	TEMPERATURE & HUMIDI		EX DATA			
POWER SUPPLY Power supply voltage	11 .	30 Vdc	2002/95/EC lead-free		EX DATA Output /supply Ui = 30 V	<b>Input</b> Uo = 6.2 V		
Power supply voltage	11 .		<b>TEMPERATURE &amp; HUMIDI</b> Operative temperature	• TY -20°C +70°C - <b>20°C +85°C (vers. 'HT')</b>	Output /supply Ui = 30 V	Uo = 6.2 V		
			TEMPERATURE & HUMIDI	• ТҮ -20°С +70°С	Output /supply Ui = 30 V Ii = 100 mA	Uo = 6.2 V Io = 100 mA		
Power supply voltage Reverse polarity protection	60 \	30 Vdc Vdc max.	<b>TEMPERATURE &amp; HUMIDI</b> Operative temperature Storage temperature Humidity (not condensed)	<b>TY</b> -20°C +70°C - <b>20°C +85°C (vers. 'HT')</b> -40°C +85°C	<b>Output /supply</b> Ui = 30 V Ii = 100 mA Pi = 0.75 W	Uo = 6.2 V Io = 100 mA Po = 500 mW		
Power supply voltage Reverse polarity protection EMC (for industrial env	60 V	30 Vdc Vdc max.	<b>TEMPERATURE &amp; HUMIDI</b> Operative temperature Storage temperature	• • • • • • • • • • • • • •	Output /supply Ui = 30 V Ii = 100 mA Pi = 0.75 W Li = 0.1 mH	Uo = 6.2 V Io = 100 mA Po = 500 mW Lo = 3.6 mH		
Power supply voltage Reverse polarity protection EMC (for industrial env DIRECTIVE 2004/108/EC	60 V ironmer	30 Vdc Vdc max. <b>nts)</b>	<b>TEMPERATURE &amp; HUMIDI</b> Operative temperature       Storage temperature       Humidity (not condensed) <b>HOUSING</b>	<b>TY</b> -20°C +70°C - <b>20°C +85°C (vers. 'HT')</b> -40°C +85°C	Output /supply Ui = 30 V Ii = 100 mA Pi = 0.75 W Li = 0.1 mH Ci = 10 nF	Uo = 6.2 V Io = 100 mA Po = 500 mW Lo = 3.6 mH Co = 5 uF		
Power supply voltage Reverse polarity protection EMC (for industrial env	60 V	30 Vdc Vdc max. <b>nts)</b>	TEMPERATURE & HUMIDI       Operative temperature       Storage temperature       Humidity (not condensed)       HOUSING       Material	• • 20°C +70°C • 20°C +85°C (vers. 'HT') -40°C +85°C 0 90 % Self-extinguishing plastic	Output /supply Ui = 30 V Ii = 100 mA Pi = 0.75 W Li = 0.1 mH Ci = 10 nF T6 : -20	Uo = 6.2 V Io = 100 mA Po = 500 mW Lo = 3.6 mH Co = 5 uF		
Power supply voltage Reverse polarity protection EMC (for industrial env DIRECTIVE 2004/108/EC	60 V ironmer	30 Vdc Vdc max. <b>nts)</b> 100-6-2	2000560     keefree       TEMPERATURE & HUMIDI       Operative temperature       Storage temperature       Humidity (not condensed)       HOUSING       Material       Dimensions	TY -20°C +70°C -20°C +85°C (vers. 'HT') -40°C +85°C 0 90 % Self-extinguishing plastic Ø= 43 mm ; H = 24 mm	Output /supply           Ui = 30 V           Ii = 100 mA           Pi = 0.75 W           Li = 0.1 mH           Ci = 10 nF           T6 : -20 T5 : -20	Uo = 6.2 V Io = 100 mA Po = 500 mW Lo = 3.6 mH Co = 5 uF ÷ +55°C		

INPUT						
Input type		Min	Мах	Span min		
TC CJC int./ext.						
J	-2	00°C	1200°C	2 mV		
К	-2	00°C	1370°C	2 mV		
S	-	50°C	1760°C	2 mV		
R	-	50°C	1760°C	2 mV		
В	4(	00°C	1820°C	2 mV		
E	-2	00°C	1000°C	2 mV		
т	-2	00°C	400°C	2 mV		
Ν	-2	00°C	1300°C	2 mV		
RTD 2,3,4 wires						
Pt100	-2	00°C	850°C	50°C		
Pt1000	-2	00°C	200°C	50°C		
Ni100	-6	50°C	180°C	50°C		
Ni1000	-60°C		150°C	50°C		
Voltage						
mV	-10	00 mV	+700 mV	2 mV		
Potentiometer	0 Ω		200 Ω	10%		
(Nominal value)	20	Ω 00	500 Ω	10%		
(*********	0.5	5 ΚΩ	2 ΚΩ	10%		
Resistance						
Low	0	Ω (	300 Ω	10 Ω		
High	0	Ω (	2000 Ω	200 Ω		
Input calibration (1)						
RTD		the higher of $\pm 0.1$ % f.s. and $\pm 0.2$ °C				
Res. Low		the higher of ±0.1 % f.s. and ±0.15 $\Omega$				
Res. High		the higher of ±0.2 % f.s. and ±1 $\Omega$				
mV, TC		the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV				

INPUT				
Input impedance				
TC, mV	>= 10 MΩ			
Linearity (1)				
TC	± 0.2 % f.s.			
RTD	± 0.1 % f.s			
Line resistance influence				
TC, mV	<=0.8 uV/Ohm			
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)			
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)			
RTD excitation current				
Typical	0.350 mA			
CJC comp.	± 0.5 °C			
Thermal drift (1)				
Full scale	± 0.01 % / °C			
CJC	± 0.01 % / °C			
Burn-out values				
Max. output value	about 22.5 mA			
Min. output value	about 3.6 mA			
Response time (10÷90% of f.s.)	about 400 ms			
(1) referred to input Span (differe	nce between max. and min. values)			

OUTPUT Output type Min Мах Span min Direct current 4 mA 20 mA 4 mA Reverse current 20 mA 4 mA 4 mA Output calibration ±7uA Current

SMART ATEX SERIES

### **ISOLATED INTRINSICALLY SAFE PC CONFIGURABLE** TRANSMITTER FOR UNIVERSAL INPUT



### GENERAL DESCRIPTION

The isolated transmitter DAT 1065 IS is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

Moreover the DAT 1065 IS is able to measure and linearise the standard thermocouples with internal cold junction compensation. The measured values are converted in a 4÷20 mA current signal.

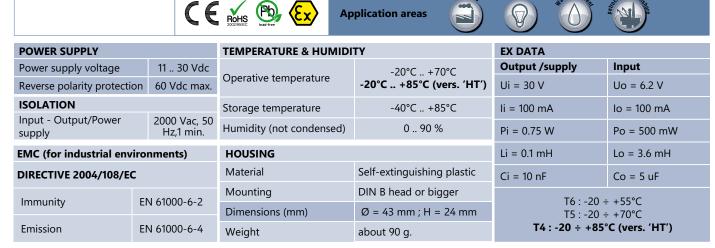
The device guarantees high accuracy and performances stability both in time and in temperature.

**Application areas** 

### **FEATURES**

- Configurable input for RTD, mV, TC, Resistance and Potentiometer
- High accuracy
- Configurable by Personal Computer
- 4 ÷ 20 mA configurable output on current loop
- Galvanic isolation at 2000 Vac
- On-field reconfigurable

- Applicable in zones with explosion risk (ZONE 0)
- Programming of the unit measure as °C or °F
- EMC compliant CE mark
- PROTECTION MODE: II 1 G Ex ia IIC certified in according to the Directive ATEX 94/9/EC
- Suitable for DIN B in-head mounting



INPUT						
Input type	Min	Мах	Span min			
TC CJC int./ext.						
J	-200°C	1200°C	2 mV			
К	-200°C	1370°C	2 mV			
S	-50°C	1760°C	2 mV			
R	-50°C	1760°C	2 mV			
В	400°C	1820°C	2 mV			
E	-200°C	1000°C	2 mV			
т	-200°C	400°C	2 mV			
Ν	-200°C	1300°C	2 mV			
RTD 2,3,4 wires						
Pt100	-200°C	850°C	50°C			
Pt1000	-200°C	200°C	50°C			
Ni100	-60°C	180°C	50°C			
Ni1000	-60°C	150°C	50°C			
Voltage						
mV	-100 mV	+700 mV	2 mV			
	Ω 0	200 Ω	10%			
Potentiometer (Nominal value)	200 Ω	500 Ω	10%			
(	0.5 ΚΩ	2 ΚΩ	10%			
RES. 2,3,4 wires						
Low	0 Ω	300 Ω	10 Ω			
High	0 Ω	2000 Ω	200 Ω			
Input calibration (1)						
RTD	the higher of ±	0.1 % f.s. and ±0	.2°C			
Res. Low	the higher of $\pm 0.1$ % f.s. and $\pm 0.15$ $\Omega$					
Res. High	the higher of ±0.2 % f.s. and ±1 $\Omega$					
mV, TC	the higher of $\pm 0.1$ % f.s. and $\pm 10$ uV					

INPUT	
Input impedance	
TC, mV	>= 10 MΩ
Linearity (1)	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence (1)	
TC, mV	<=0.4 uV/Ohm
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC comp.	± 0.5 °C
Thermal drift (1)	
Full scale	± 0.01 % / °C
CJC	± 0.01 % / °C
Burn-out values	
Max. output value	about 22.5 mA
Min. output value	about 3.6 mA
Response time (10÷90% of f.s.)	about 400 ms
(1) referred to input Spap (differe	ence between max and min values)

(1) referred to input Span (difference between max, and min, values)

OUTPUT							
Output type	Min	Max	Span min				
Direct current	4 mA	20 mA	4 mA				
Reverse current	20 mA	4 mA	4 mA				
Output calibration							
Current	± 7 uA						

26

## **ODAIEXEL**

ELECTRONIC AND CONTROL PROCESS DEVICES

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SMART series intrinsically safe ATEX94/9/EC temperature and signal transmitters and converters



SMART ATEX SERIES

NAN RAREAR









### "P.D.S. SERIES": temperature and signal transmitters and converters for DIN rail mounting

The P.D.S. (programmable by dip-switches) series transmitters and converters can accept on their input signals coming from 2 or 3 wires Pt100. Thermocouple and Strain Gauge sensors or Voltage and Current signals.

- Single and double channel 4÷20 mA two wires transmitters for Pt100 input without galvanic isolation (**DAT2065**, **DAT2066**)
- 4÷20 mÅ two wires transmitter for Thermocouple input without galvanic isolation (**DAT2045**)
- Single and double channel converters for Pt100 input with configurable output as voltage or current without galvanic isolation (**DAT2165**, **DAT2166**)
- Isolated converter for Pt100 input with configurable output as voltage or current (DAT2061)
- Converter for Thermocouple input with configurable output as voltage or current without galvanic isolation (DAT2145)
- Isolated signal converters with configurable input and output as voltage or current (DAT5020. DAT5021, DAT50231, DAT5023V)
- Isolated signal splitter with configurable input and output as voltage or current (**DAT5022**)
- Isolated signal converter for Strain Gauge input with configurable output as voltage or current (DAT5025)

### INDEX

30 • DAT 2065

Dip Switch Configurable transmitter for Pt100 **DAT 2066** Double channel Dip Switch Configurable transmitter for Pt100

### DAT 2165 Dip Switch Configurable converter for Pt100 DAT 2166 Double Channel Dip Switch Configurable converter for Pt100

- 32 DAT 2061
   Isolated Dip switch configurable converter for Pt100
   DAT 2045

   Not linearized Dip Switch configurable transmitter for thermocouple
- 33 DAT 2145
   Not linearized Dip Switch configurable converter for thermocouple
   DAT 5020
   Dip Switch configurable 3 ways isolated signal converter
- 35 DAT 5023 lac
   Dip Switch configurable converter for AC current signal
   DAT 5023 ldc
   Isolated converter for DC current signal with fixed input, and Dip Switch configurable output
- 36 DAT 5023/V
   Dip Switch configurable converter for AC / DC voltage signal
   DAT 5025
   Isolated programmable Dip Switch converter for Strain Gauge / Bridge sensors

# P.D.S. SERIES



2 mmmm

11

### ())) Ddiexel

**P.D.S.** Temperature and signal transmitters and converters, isolators, signal splitters

### **DIP SWITCH CONFIGURABLE TRANSMITTER FOR PT100**



### **GENERAL DESCRIPTION**

The transmitter DAT 2065 is designed to provide on its output a linearised 4÷20 mA current loop signal proportional with the temperature characteristic of the Pt100 sensor connected on its input. It is possible to connect on the input both 3 wires and 2 wires Pt100.

### **FEATURES**

- Configurable Input for Pt100
- Good accuracy and performance stability - Configurable by DIP-switches
- 4 to 20 mA linearised output on current loop

**Application areas** 

-		EN-50022 and EN-50035								
(	10	dustries	Board machine	Evelah	tood bus/new	Water				
		Linear	ity error (*	)						
n		± 0.15 9	% of f.s.							

- Unit of measure configurable in °C or °F

- EMC compliant – CE mark

المسلمات

### **POWER SUPPLY**

Power supply voltage			10 30 Vdc		
Rever. polarity protection			60 Vdc max		
TEMPERA	TURE & HU	M	IIDITY		
Operative ter	nperature		-20°C +70°C		
Storage temperature			-40°C +85°C		
Humidity (no	t condensed)		0 90 %		
EMC (for in	dustrial envi	rc	onments)		
DIRECTIVE 2004 / 108 / EC					
Immunity	EN 61000-6-2				
Emission	EN 61000-6-4				
HOUSING	HOUSING				
Material	Self-extinguishing plastic				
Dim. (mm)	W x L x H : 9	0	x 112 x 12.5		
Weight	about 80 g.				

INPUT (RTD)			
Input type	Min	Мах	Span min
Pt100 (2-3 wires)	-50°C	650°C	50°C
OUTPUT			
Output type	Min	Мах	Span min
Direct current	4 mA	20 mA	-
Min. input value	e programr	nability	
Programmable		-50 ÷ 50 °C	
Input Calibratio	<b>n</b> (1)		
the higher of $\pm$ 0.1	% f.s. and 0.2	2 °C	
RTD sensor exci	tation curr	ent	
Тур.		0.6 mA	
Thermal drift (1)	)		
Full Scale		± 0.02 % / °C	

### **Burn-out values** Max. value output >20 mA Line resistance influence (1) 0.05 % f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)

Response time (10÷90% of f.s.) about 300 ms

- (1) = referred to the input Span (difference between max. and min.)
- (\*) = inclusive of hysteresis, power supply variation and linearisation error.

- 1000 Vac isolation among the channels - Unit of measure configurable in °C or °F

- DIN rail mounting in compliance with

- EMC compliant - CE mark

EN-50022 and EN-50035

### 30

SERIES

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### **DOUBLE CHANNEL DIP SWITCH CONFIGURABLE TRANSMITTER FOR PT100**

### **GENERAL DESCRIPTION**

The double channel transmitter DAT 2066 is designed to provide on the output two linearised 4÷20 mA current loop signals proportional with the temperature characteristics of the Pt100 sensors connected on its inputs. It is possible to connect on the input both 3 wire Pt100 and 2 wire Pt100.

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DAT 20	and a star
	EF E
23	CE
IIIII	a DATEXEL
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10	all'and

POWER SU	JPPLY		
Power supply	10 30 Vdc		
Rever. polari	ty protection	60 Vdc max	
TEMPERA	FURE & HUI	MIDITY	
Operative ter	nperature	-20°C +70°C	
Storage temperature		-40°C +85°C	
Humidity (not	t condensed)	0 90 %	
EMC (for in	dustrial envi	ronments)	
DIRECTIVE	2004 / 108	/ EC	
Immunity	EN 61000-6-2	2	
Emission	EN 61000-6-4		
HOUSING			
Material	Self-extinguishing plastic		
Dim. (mm)	W x L x H : 90 x 112 x 12.5		
Weight	about 80 g.		
	Power suppl Rever. polari TEMPERAT Operative ter Storage temperature Humidity (no EMC (for in DIRECTIVE Immunity Emission HOUSING Material Dim. (mm)	temperature Humidity (not condensed) EMC (for industrial envir DIRECTIVE 2004 / 108 Immunity EN 61000-6-7 Emission EN 61000-6-7 HOUSING Material Self-extingui Dim. (mm) Wx L x H : 9	

### **FEATURES**

- Configurable double Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
- 4 to 20 mA linearised double output on current loop
  - - Application areas

				<u> </u>	-	-	
INPUT (RTD)				Linearit	y error (*)	1	
Input type	Min	Мах	Span min	± 0.15 %	o of f.s.		
Pt100 (2-3 wires)	-50°C	650°C	50°C	Burn-o	ut values		
				Max. valu	le output		>20 mA
OUTPUT	r	1	r	Line res	sistance in	fluence (1)	
Output type	Min	Мах	Span min	0.05 % f.s	s. / Ω (100 Ω	max balanced	for wire)
Direct current	4 mA	20 mA	-	Respons	e time (10÷	-90% of f.s.)	about 300 ms
Min. input valu	e programr	nability		(1) = referred to the input Span			
Programmable		-50 ÷ 50 °C				ween max. an	d min.)
Input Calibratio	on (1)	1		i ì			supply variation
the higher of $\pm 0.1$	% f.s. and 0.2	2 °C		and	linearisatio	on error.	
RTD sensor exc	itation curr	ent					
Тур.		0.6 mA					
Thermal drift (1)	)	·					
Full Scale		± 0.02 % / °	с				

66



### **DIP SWITCH CONFIGURABLE CONVERTER FOR PT100**



### **GENERAL DESCRIPTION**

The converter DAT 2165 is designed to provide on its output a linearised voltage or current signal proportional with the temperature characteristic of the Pt100 sensor connected on its input. It is possible to connect on the input both 3 wires and 2 wires Pt100.

**Application** areas

### FEATURES

- Configurable Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches
   Linearised voltage or current output

- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035

POWER SU	POWER SUPPLY					
Power suppl	y voltage		18 30 Vd	ic		
Rever. polari	ty protec	tion	60 Vdc ma	ax		
CURRENT	CONSU	MPT	ION			
Current outp	out	40 n	nA max.			
Voltage outp	out	10 m	nA max.			
TEMPERAT	FURE &	HUN	<b>/IDITY</b>			
Operative ter	nperature	•	-20°C +7	0°C		
Storage temperature			-40°C +8	5℃		
Humidity (no	t condens	ed)	0 90 %	, D		
EMC (for in	dustrial	envir	onments)			
DIRECTIVE	2004 /	108	/ EC			
Immunity	EN 6100	0-6-2				
Emission	EN 61000-6-4					
HOUSING						
Material	Self-extinguishing plastic					
Dim. (mm)	W x L x H : 90 x 112 x 12.5					
Weight	about 80	) g.				

**DAT 2166** 

Weight

Input type	Min	Мах	Span min
Pt100 (2-3 wires)	-50°C	650°C	50°C
OUTPUT		-	
Output type	Min	Мах	Span mir
Direct current	0 mA	20 mA	-
Direct Voltage	0 V	10 V	-
Min. input value	e program	mability	
Programmable		-50 ÷ 50 °C	
Input Calibratio	<b>n</b> (1)		
the higher of $\pm$ 0.1	% f.s. and 0.	2 °C	
RTD sensor exci	tation curi	rent	
Тур.		0.6 mA	
Thermal drift (1)			
Full Scale		± 0.02 % / °	С

Linearity error (*)	
± 0.15 % of f.s.	
Burn-out values	
Max. value output	>20 mA or > 10 Vdc
Line resistance influence (1)	
0.05 % f.s. / Ω (100 Ω max balanced	for wire)
Response time (10÷90% of f.s.)	about 300 ms
<ul> <li>(1) = referred to the input Span (difference between max. ar</li> <li>(*) = inclusive of hysteresis, powe and linearisation error.</li> </ul>	,

### DOUBLE CHANNEL DIP SWITCH CONFIGURABLE CONVERTER FOR PT100

### GENERAL DESCRIPTION

The double channel converter DAT 2166 is designed to provide on the output two linearised voltage or current signals proportional with the temperature characteristics of the Pt100 sensors connected on its inputs. It is possible to connect on the input both 3 wire and 2 wire Pt100.

**Application** areas

### FEATURES

- Configurable double Input for Pt100
- Good accuracy and performance stability
- Configurable by DIP-switches

- Linearised double voltage or current output
- 1000 Vac isolation among the channels
- Unit of measure configurable in °C or °F
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022 and EN-50035

220					
POWER SUPPLY					
Power suppl	y voltage		18 30 Vo	dc	Inp
Rever. polari	ty protec	tion	60 Vdc m	ax	Pt1
CURRENT	CONSU	MP	ΓΙΟΝ		
(for each o	hannel)	)			οu
Current outp	out	40 r	nA max.		Ou
Voltage outp	out	15 n	nA max.		Dire
TEMPERA	TURE &	HUN	MIDITY		Dire
Operative temperature			-20°C +7	∕0°C	Mi
Storage temperature	9			85℃	Pro
Humidity (not condensed)			0 90 9	%	Inp
EMC (for in	dustrial	envir	onments)		the
DIRECTIVE			,		RT
Immunity	EN 61000-6-2				Тур
Emission	EN 61000-6-4				Th
					Ful
HOUSING					L
Material Self-extinguishing plastic				с	
Dim. (mm)	WxLx	H : 90	) x 112 x 12.	5	

about 80 g.

CE

	an nee			
INPUT (RTD)			-	
Input type	Min	Max	Span min	
Pt100 (2-3 wires)	-50°C	650°C	50°C	
OUTPUT				
Output type	Min	Max	Span min	
Direct current	0 mA	20 mA	-	
Direct Voltage	0 V	10 V	-	
Min. input valu	e programi	nability		
Programmable		-50 ÷ 50 °C		
Input Calibration (1)				
the higher of $\pm$ 0.1 % f.s. and 0.2 °C				
RTD sensor excitation current				
Тур. 0.6 mA				
Thermal drift (1)				
Full Scale		± 0.02 % / °	С	

	Linearity error (*)			
1	± 0.15 % of f.s.			
	Burn-out values			
	Max. value output >20 mA or > 10 Vdc			
	Line resistance influence (1)			
	0.05 % f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)			
	Response time (10÷90% of f.s.) about 300 ms			
	<ul> <li>(1) = referred to the input Span</li> <li>(difference between max. and min.)</li> <li>(*) = inclusive of hysteresis, power supply variation</li> </ul>			
	and linearisation error.			

31

SERIES

P.D.S.

### **ISOLATED DIP SWITCH CONFIGURABLE CONVERTER FOR PT100**

- Galvanic isolation at 2000 Vac between

DIN rail mounting in compliance with EN-50022 and EN-50035

Good accuracy and performance stability

input / output and power supply

- EMC compliant – CE mark



Rever. polarity protection 60 Vdc max

**CURRENT CONSUMPTION** 

**TEMPERATURE & HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-2

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 80 g.

Self-extinguishing plastic

DIRECTIVE 2004 / 108 / EC

Power supply voltage

2000 Vac, 50 Hz, 1 min.

Operative temperature

Humidity (not condensed)

Current output Voltage output

ISOLATION

Storage

temperature

Immunity

HOUSING Material

Emission

Weight

It is possible to connect on the input both 3 wires	

FEATURES

**GENERAL DESCRIPTION** 

- Input for RTD type Pt100
- Unit of measure configurable in °C or °F - Zero and Span values configurable by DIP-switches

characteristic of the Pt100 sensor connected on its input.

- Voltage or current output
- Output values configurable by DIP-switches

Min

-50°C

Min

0 mA

0 V

Min. input value programmability

the higher of  $\pm$  0.1 % f.s. and 0.2 °C

**RTD sensor excitation current** 



INPUT (RTD)

Pt100 (2-3 wires)

Input type

OUTPUT

Output type

Direct current

Direct Voltage

Programmable

Тур.

Full Scale

Input Calibration (1)

Thermal drift (1)

18 .. 30 Vdc

-20°C .. +70°C

-40°C .. +85°C

0..90%

60 mA max.

40 mA max.

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Арр	lication	are

Max

650°C

Max

20 mA

10 V

-50 ÷ 50 °C

0.6 mA

± 0.02 % / °C

The converter DAT 2061 is designed to provide on its output a linearised voltage or current signal proportional with the temperature

n areas			
	Linearity error (*)		
Span min	n ± 0.15 % of f.s.		
50°C	Burn-out values		
	Max. value output	>20 mA or > 10 Vdc	
1	Line resistance influence (1)		
Span min	0.05 % f.s. / $\Omega$ (100 $\Omega$ max balanced for wire)		
-	Response time (10÷90% of f.s.)	about 500 ms	
-	<ul> <li>(1) = referred to the input Span (difference between max. and min.)</li> <li>(*) = inclusive of hysteresis, power supply variation and linearisation error.</li> </ul>		

### NOT LINEARIZED DIP SWITCH CONFIGURABLE TRANSMITTER FOR THERMOCOUPLE

### **GENERAL DESCRIPTION**

The transmitter DAT 2045 is designed to provide on its output a 4÷20 mA current loop signal linear and proportional with the value of voltage generated from the thermocouple connected to its input.

The DAT 2045 doesn't execute the linearisation of the input signal; this feature allows to use the transmitter with acquisition systems with an internal linearisation software.

### **FEATURES**

J

к

- Configurable Input for thermocouples type K, J, R, S and T
- Good accuracy and performance stability
- Configurable by DIP-switches
- 4 to 20 mA "voltage linear" output on current loop

Min

-50°C

-50°C

	1	
E	ROHS	(PD)

INPUT (TC) Input type

Application a
---------------

Max

950°C

1370°C

### reas

	Thermal drift (1)		
Span min	Full Scale	± 0.02	2 % / °C
100°C	Linearity error (*)		
100°C	± 0.05 % of f.s.		
700°C	Burn-out values		
700°C	Max. value output		>20 mA
100°C	Input Impedance		
10 ΜΩ			
Span min	Line resistance influence	(1)	
Span min	0.2 μV / Ω		
-	Response time (10÷90% of f	.s.)	about 500 ms
	(1) = referred to the input Sp	an	

= inclusive of hysteresis, power supply variation (\*) and linearisation error.

- Unit of measure configurable in °C or °F

- DIN rail mounting in compliance with EN-

- EMC compliant - CE mark

50022 and EN-50035

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	POWER SU	JPPLY	
	Power supply voltage Rever. polarity protection		10 30 Vdc
			60 Vdc max
<b>TEMPERATURE &amp; HUMIDITY</b>		MIDITY	
	Operative temperature Storage temperature		-20°C +70°C
			-40°C +85°C
	Humidity (not condensed) 0 90 %		
	<b>EMC</b> (for industrial environments)		
DIRECTIVE 2004 / 108 / EC		/ EC	
	Immunity EN 61000-6- Emission EN 61000-6-		2
			4
HOUSINGMaterialSelf-extinguishing planDim. (mm)W x L x H : 90 x 112 x 11			
		Self-extingui	shing plastic
		0 x 112 x 12.5	
	Weight	About 90 g.	

-50°C	1760°C	700°C	
-50°C	1760°C	700°C	
-50°C	450°C	100°C	
Min	Max	Span min	
4 mA	20 mA	-	
Min. input value programmability			
	-50 ÷ 50 °C		
Input Calibration (1)			
the higher of ± 0.1 % f.s. and 0.2 °C			
CJC compensation ± 0.5°C			
	-50°C -50°C Min 4 mA e programm n (1) % f.s. and 0.2	-50°C     1760°C       -50°C     450°C       Min     Max       4 mA     20 mA       e programmability       -50 ÷ 50 °C       n (1)       % f.s. and 0.2 °C	

he input Span

(difference between max. and min.)



EN-50022

### NOT LINEARIZED DIP SWITCH CONFIGURABLE CONVERTER FOR THERMOCOUPLE

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DAT 2145	
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	anna (E
	ave a series

### **GENERAL DESCRIPTION**

The converter DAT 2145 is designed to provide on its output a voltage or current signal linear and proportional with the value of voltage generated from the thermocouple connected to its input. The DAT 2145 doesn't execute the linearisation of the input signal; this feature allows to use the converter with acquisition systems with an internal linearisation software.

### **FEATURES**

- Configurable Input for thermocouples type K, J, R, S and T
- Good accuracy and performance stability - Configurable by DIP-switches

**Application areas** 

- DIN rai	ompliant – ( I mounting I-50035		iance with
Industries	apard machina	Energy	400d busines

- Voltage or current "voltage linear" output

- Unit of measure configurable in °C or °F

POWER SUPPLY			INPUT (TC)				Linearity error (*)	
Power supply	y voltage	18 30 Vdc	Input type	Min	Max	Span min	± 0.05 % of f.s.	
Rever. polari	ty protection	60 Vdc max	J	-50°C	950°C	100°C	Burn-out values	
CURRENT	CONSUMP	TION	К	-50°C	1370°C	100°C	Max. value output	>20 mA or 10 Vdc
Current outp	out 40	mA max.	S	-50°C	1760°C	700°C	Input Impedance	
Voltage outp	out 10 i	mA max.	R	-50°C	1760°C	700°C	10 MΩ	
TEMPERAT	TURE & HU	MIDITY	т	-50°C	450°C	100°C	Line resistance influence (1)	
Operative ter	nperature	-20°C +70°					$0.2 \mu\text{V} / \Omega$	
Storage temperature		-40°C +85°	OUTPUT Output type	Min	Max	Span min	Response time (10÷90% of f.s.)	about 500 ms
Humidity (not	t condensed)	0 90 %	Direct current	4 mA	20 mA	-	(1) = referred to the input Span	
EMC (for in	dustrial envi	ronments)	Direct Voltage	0 V	10 V	-	(difference between max. and min.)	
DIRECTIVE	2004 / 108	S / EC	Min. input valu	Min. input value programmability			(*) = inclusive of hysteresis, power supply variation and linearisation error.	
Immunity	EN 61000-6-	2	Programmable	rammable -50 ÷ 50 °C		and linearisation error.		
Emission	EN 61000-6-	4	Input Calibratio	Input Calibration (1)				
HOUSING			the higher of ± 0.1	the higher of ± 0.1 % f.s. and 0.2 °C				
Material Self-extinguishing plastic		CJC compensat	CJC compensation ± 0.5°C					
Dim. (mm)	WxLxH:9	0 x 112 x 12.5	Thermal drift (1	)				
Weight	About 90 g.		Full Scale	Full Scale ± 0.02 % / °C				

### **DIP SWITCH CONFIGURABLE 3 WAYS ISOLATED SIGNAL CONVERTER**

### **GENERAL DESCRIPTION**

Generate DAT 5020 is designed to provide on its output a voltage or current signal proportional with the value of the normalised signal or the potentiometer applied on its input. The user can program the input and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device. The 2000 Vac isolation between input, power supply and output eliminates the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications. On the input side, an auxiliary supply source isolated from the power supply is provided; this allows to connect on input both active and passive current loops.

**Application areas** 

Self-extinguishing plastic

W x L x H : 90 x 112 x 12.5

### **FEATURES**

- Input for voltage, current and potentiometer signal
- Voltage or current configurable output

HOUSING

Material

Weight

INPUT

Dim. (mm)

- High number of Input / output configuration
- Galvanic isolation at 2000 Vac on the 3 ways
- Isolated power supply source for passive current transmitter on input - Good accuracy and performance stability
- EMC compliant CE mark
- DIN rail mounting in compliance with EN-50022

Input Impedance

Thermal drift (1)

Voltage

Full Scale

and EN-50035

± 0.02 % / °C

Power supply voltage	18 32 Vdc
Rever. polarity protection	60 Vdc max
Aux. Power Supply	18 Vdc min @ 20 mA
<b>Current consumption</b>	ı
Current output with active aux operative input (20 m	e Power supply A): 110 mA ma
Voltage output	80 mA max.
ISOLATION	
All the ways	2000 Vac, 50 Hz, 1 min
<b>TEMPERATURE &amp; HU</b>	MIDITY
Operative temperature	-20°C +60°
Storage temperature	-40°C +85°
Humidity (not condensed)	0 90 %
EMC (for industrial envi	ironments)
DIRECTIVE 2004 / 108	3 / EC

EN 61000-6-2

EN 61000-6-4

**POWER SUPPLY** 

Immunity Emission

**DAT 5020** 

er sappij						
10 mÁ máx.	Input type	Min	Max	Span min		
mA max.	Current	0 mA	20 mA	-		
	Voltage	-10 V	10 V	-		
) Vac, z, 1 min	Potentiometer					
ΙΤΥ	(Rnom. from 1K $\Omega$ to 5 K $\Omega$ )	0 %	100 %	-		
°C +60°C	Max input signal					
°C +85°C	30 Vdc or 50 mA					
0 90 %	Input Calibratio	<b>n</b> (1)				
nents)	± 0.1 % f.s.					
C	Linearity (*)					
	± 0.15 % f.s.					
-						

about 80 g.

OUTPUT							
Output type Min Max Span min							
Current	0 mA	í	20 mA	-			
Voltage	-10 V		10 V	-			
Max output signal							
15 Vdc or 30 mA							
Response time (10	)÷90% of f.s.	)	about !	500 ms			
<ul> <li>(1) = referred to the input Span (difference between max and min.)</li> <li>(*) = inclusive of hysteresis and power supply variation.</li> </ul>							

>/= 1 M $\Omega$ , Current: ~ 50  $\Omega$ 

### **3 WAYS ISOLATED DIP SWITCH CONFIGURABLE SIGNAL CONVERTER**

supply and output

EMC compliant - CE mark



Rever. polarity protection 60 Vdc max

### GENERAL DESCRIPTION

The converter DAT 5021 is designed to provide on its output a voltage or current signal proportional with the value of the normalised signal applied on its input. The user can program the input and output ranges by the proper DIP-switches available after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

### **FEATURES**

- Input for voltage and current signal
- Input range configurable by DIP-switches
- Isolated power supply source for passive current transmitter on input
- Isolated power supply source for passive loads on output - Voltage or current output configurable by DIP-switches

About 90 g

Self-extinguishing plastic

W x L x H : 90 x 112 x 12.5



HOUSING

Material

Weight

Dim. (mm)

18 .. 30 Vdc

12 Vdc min @ 20 mA

40 mA max.

18 Vdc @ 20 mA

- **Application** areas
- Ö,

and EN-50035

OUTPUT							
Output type	Min	Max	Span min				
Current	0 mA	20 mA	-				
Current	4 mA	20 mA	-				
	0 V	10 V	-				
Voltago	2 V	10 V	-				
Voltage	0 V	5 V	-				
	1 V	5 V	-				
Load resistance (Rload)							
Voltage output	>,	/= 5 KΩ					
Current output	<,	/= 500 Ω					

- Galvanic isolation at 2000 Vac between input, power

DIN rail mounting in compliance with EN-50022

Good accuracy and performance stability

(\*) = inclusive of hysteresis and power supply variation.

### **CURRENT CONSUMPTION** Current output with active Power supply aux operative input (20 mA): 90 mA max. SERIES

Voltage output ISOLATION All the ways 2000 Vac, 50 Hz, 1 min

POWER SUPPLY

Power supply voltage

Aux. Power Supply OUT

Aux. Power Supply IN

TEM	PERAT	URE 8	k HUM	IDITY
-				

Operative ter	nperature	-20°C +60°C			
Storage temperature		-40°C +85°C			
Humidity (no	t condensed)	0 90 %			
EMC (for industrial environments)					
DIRECTIVE 2004 / 108 / EC					
Immunity EN 61000-6-2					

EN 61000-6-4

INPUT					
Input type	Min		Max	Span min	
Current	0 mA		20 mA	-	
Current	4 mA		20 mA	-	
	0 V		10 V	-	
N. I.	2 V		10 V	-	
Voltage	0 V		5 V	-	
	1 V		5 V	-	
Input Calibratio	n	± (	0.1 % f.s.		
Linearity (*)		± 0.05 % f.s.			
Thermal drift					
Full Scale		± (	).02 % / °C		
Response time (fr	om 10 to	90	% of f.s.)	< 10 ms	

### **GENERAL DESCRIPTION**

The converter DAT 5022 is designed to provide on its output two voltage or current signals proportional with the value of the normalised signal applied on its input. The user can program the input and outputs ranges by the proper DIP-switches available after opening the suitable door located on the side of device

The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

### **FEATURES**

18 .. 30 Vdc

12 Vdc min @ 20 mA

60 mA max.

18 Vdc @ 20 mA

- Input for voltage and current signal
- Input range configurable by DIP-switches
- Voltage or Current two independent output channels
- Voltage or current outputs configurable by DIP-switches
- Isolated power supply source for passive current
  - transmitter on input

### HOUSING

Material

Weight

INPUT

Input type

Dim. (mm)

Арр	lication	are

Max

Span n

Self-extinguishing plastic

W x L x H : 90 x 112 x 12.5

About 90 g.

Min



and EN-50035

outputs

supply and outputs

EMC compliant - CE mark

OUTPUT (2 CHANNELS)							
Output type	Min	Max	Span min				
Current	0 mA	20 mA	-				
Current	4 mA	20 mA	-				
Voltage	0 V	10 V	-				
	2 V	10 V	-				
	0 V	5 V	-				
	1 V	5 V	-				
Load resistance (Rload)							
Voltage output	>/= 5 KΩ						
Current output	<,	/= 500 Ω					
(*) = inclusive of h	ysteresis and	d power supp	bly variation.				

- Isolated power supply source for passive loads on

DIN rail mounting in compliance with EN-50022

Good accuracy and performance stability

Galvanic isolation at 2000 Vac between input, power

_	All the ways	All the ways 2000 Vac					
<b>TEMPERATURE &amp; HUMIDITY</b>							
	Operative terr	-20°C +60°C					
	Storage temperature			-40°C +85°C			
	Humidity (not	0 90 %					
	EMC (for industrial environments)						
	DIRECTIVE 2004 / 108 / EC						
	Immunity	١З	N 61000-6-	-2			
	Emission	E١	N 61000-6-	4			

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 $\square$ Ω

34

Emission

5022 DAT

**POWER SUPPLY** 

Power supply voltage

Aux. Power Supply OUT

**CURRENT CONSUMPTION** 

Aux. Power Supply IN

Voltage output

ISOLATION

Rever. polarity protection 60 Vdc max

### **DIP SWITCH CONFIGURABLE CONVERTER FOR AC CURRENT SIGNAL**

providing bening the ocated on isting and a from the put		
pan min		
-		
-		
-		
-		
-		
-		
(*) = inclusive of hysteresis and power supply variation.		

### **ISOLATED CONVERTER FOR DC CURRENT SIGNAL** WITH FIXED INPUT AND DIP SWITCH CONFIGURABLE OUTPUT

**EMC** (for industrial environments) DIRECTIVE 2004 / 108 / EC Immunity EN 61000-6-2

EN 61000-6-4

Emission

### **GENERAL DESCRIPTION**

DAT 50231de The converter DAT 5023ldc is designed to convert the DC current signal from 0÷5 A to 0÷60 A applied on its input in a voltage or current output signal. The device is available in three versions (A, B and D) in function of the input current value. The user can program the output ranges by the proper DIP-switches available after opening the suitable door located on the side of device The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device. FEATURES - Isolated power supply source for passive loads on output - Input for DC current signal - Independent zero and full scale regulations - Build-in cross connector (8mm diameter) - EMC compliant - CE mark - Measure by Hall effect transducer DIN rail mounting in compliance with - Galvanic isolation at 2000 Vac EN-50022 and EN-50035 **Application areas POWER SUPPLY** HOUSING OUTPUT 18 .. 30 Vdc Power supply voltage Material Self-extinguishing plastic output type Min Max Span min Rever. polarity protection 60 Vdc max Dim. (mm) W x L x H : 90 x 112 x 22.5 0 mA 20 mA -12 Vdc min Current Aux. Power Supply OUT Weight About 170 g. 4 mA 20 mA @ 20 mA **CURRENT CONSUMPTION** 0 V 10 V INPUT Current output with Aux supply out operative (20 mA): 90 mA max. 2 V 10 V \_ Input type Min Max Span min Voltage 60 mA max. 0 V 5 V Voltage output 0÷5 A 0÷60 A Current (A) (1) ISOLATION 1 V 5 V \_ Input Calibration ± 0.1 % f.s. 2000 Vac, 50 Hz, 1 min Load resistance (Rload) All the ways Linearity (\*) ±1% f.s. Voltage output >/= 5 KΩ **TEMPERATURE & HUMIDITY** Thermal drift Current output </= 500 Ω Operative temperature -20°C .. +60°C Full Scale ± 0.02 % / °C Response time (10÷90% of f.s.) About 400 ms Storage -40°C .. +85°C temperature (1) = To choose the input range refer to the technical (\*) = inclusive of hysteresis and power supply variation. 0...90 % Humidity (not condensed) data sheet.

SERIES

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### **DIP SWITCH CONFIGURABLE CONVERTER FOR AC / DC VOLTAGE SIGNAL**

	DAT 5023/V			GENERAL DESCRIPT The converter DAT 502 applied on its input in a DIP-switches available a The regulation of Zero The 1500 Vac isolation I allows the use of the co FEATURES - Input for AC/DC voltag - Dedicated measure inp - Input type of measure ( - True Root Mean Square - Isolated power supply s	3/V is design a voltage or o after opening and Span vali between inpu proverter in he e signal uts (AC / DC ) cor e (TRMS) meas	current output si the suitable dou ues is made by t ut, power supply avy environmen figurable by DIP- sure	gnal. The user or located on t he ZERO and S and output eli tal conditions f - V - V - C switches - C - E	can program the input the side of device. SPAN potentiometers lo iminates the effects of	t type and ou ocated on the all ground loo lications. t configurable l Vac between i ormance stabilit k	tput ranges b top of device ops eventually by DIP-switche nput, power so y	existing and existing and existing and existing and
	at a series		CE ROHS		Applicatio		undustrier sust machine	Everation	isod business i	ater treatment	
	POWER SUPPLY		HOUSING	HOUSING			OUTPUT				
	Power supp	ly voltage	18 30 Vdc	Material	Self-exting	uishing plastic		Output type	Min	Мах	Span min
	Rever. polar	rity protection	60 Vdc max	Dim. (mm)	W x L x H : 90 x 112 x 12.5				0 mA	20 mA	-
	Aux. Power	Supply OUT	12 Vdc min @ 20 mA	Weight	About 90 g.			Current	4 mA	20 mA	-
	CURRENT	CONSUMPT	ION						0 V	10 V	-
	Current out	put with Aux su	pply out ope-	INPUT	INPUT				2 V	10 V	-
	Voltage out	iA): 80 mA ma>	60 mA max.	Input type <sup>(1)</sup>	Min	Мах	Span min	Voltage	0 V	5 V	_
	ISOLATIO		oo ma max.	Voltage (Vac)	0÷36 Vac	0÷550 Vac	-		1 V	5 V	
			1500 Vac,	Voltage (Vdc)	Voltage (Vdc) 0÷36 Vdc 0÷550 Vdc -		-				
	All the ways		50 Hz, 1 min	Bandwidth (-3	dB)			Load resistance (Rload)			
	TEMPERA	TURE & HUN	<b>NIDITY</b>	40 Hz ÷ 1KHz	40 Hz ÷ 1KHz			Voltage output >/= 5 KΩ			
	Operative temperature -20°C +60°C		Input Calibrati	on	± 0.1 % f.s.		Current output = 500 C</td <td></td> <td colspan="2"></td>				
	Storage temperature -40°C +85°C		Linearity (*)				Response time (10÷90% of f.s.)		s		
			(AC) ±1 % f.s.		( <b>DC)</b> ± 0.1 % f.s				( <b>DC</b> ) 20 m	s	
		ot condensed)	090%	Thermal drift				(1) = To choose the	e input range	e refer to the	e technical
	•	ndustrial envir	,	Full Scale		± 0.02 % / °C		data sheet.			
		E 2004 / 108	-			, -		(*) = Inclusive of h	ysteresis and	l power sup	ply variation.
	Immunity	EN 61000-6-2									
;	Emission	EN 61000-6-4	•								

### **ISOLATED PROGRAMMABLE DIP SWITCH CONVERTER** FOR STRAIN GAUGE / BRIDGE SENSORS

- Isolated power supply source for passive loads on output

- Independent zero and full scale regulations

- Din rail mounting in compliance with EN-50022

- EMC compliant - CE mark

24

and FN-50035

### **GENERAL DESCRIPTION**

The converter DAT 5025 is designed to provide on its output a voltage or current signal linear and proportional with the output voltage coming from the output of a bridge transducer applied on its input. The user can program the bridge excitation voltage value, the input and the output ranges by the proper DIP-switches available

after opening the suitable door located on the side of device. The regulation of Zero and Span values is made by the ZERO and SPAN potentiometers located on the top of device.

F	EAT	ΓU	RE	5	
			c	<b>C</b> ·	٠

HOUSING

Material

Weight

Dim. (mm)

- Input for Strain-Gauge
   Input range configurable from 0÷10 mV up to 0÷200 mV or from ± 5 mV up to ± 200 mV
- Current limiter on the input side
- Galvanic isolation at 2000 Vac on the 3 ways CE KOHS (Pb

**Application areas** 

Self-extinguishing plastic W x L x H : 90 x 112 x 12.5

INPUT						
Input type <sup>(1)</sup> Min			Max	Span min		
	0 mV		10 mV	-		
Strain-Gauge	0 mV		200 mV	-		
	± 5 mV		± 200 mV	-		
Bridge excitatio	n voltag	e (	Vexc)			
3.60 Vdc ± 0.1% (with	n bridge's resist	ance	e included between	100 Ω and 10 KΩ)		
10 Vdc ± 0.1% (with br	idge's resistan	ce ii	ncluded between a	300 Ω and 10 KΩ)		
Bridge excitatio	n curren	t				
65 mA max.						
Input Calibratio	n	± 0.1 % f.s.				
Linearity (*)			± 0.1 % f.s.			
Thermal drift						
Full Scale			± 0.01 % / °C			

About 90 g.

OUTPUT						
Output type	Min		Max	Span min		
Current	0 mA		20 mA	-		
Current	4 mA		20 mA	-		
	0 V		10 V	-		
Valtara	2 V		10 V	-		
Voltage	0 V		5 V	-		
	1 V		5 V	-		
Load resistance (Rload)						
Voltage output			>/= 5 KΩ			
Current output			= 500 Ω</td			
Response time (1	0÷ 90% of	f f.s	5.)	40 ms		

data sheet.

(\*) = Inclusive of hysteresis and power supply variation.

 $\Box$ 

36



POWER SUPPLY

Power supply voltage

	Rever. polarity protection		60 Vdc max				
	Aux. Power Supply OUT		12 Vdc min @ 20 mA				
	CURRENT CONSUMP	T	ION				
	Current output with active Power supply aux operative (20 mA): 120 mA max.						
	Voltage output		80 mA max.				
	ISOLATION						
	All the ways		2000 Vac, 50 Hz, 1 min				
<b>TEMPERATURE &amp; HUMIDITY</b>							
	Operative temperature		-20°C +60°C				
	Storage temperature		-40°C +85°C				
	Humidity (not condensed)		0 90 %				

18 .. 30 Vdc

**EMC** (for industrial environments) DIRECTIVE 2004 / 108 / EC Immunity EN 61000-6-2 EN 61000-6-4 Emission

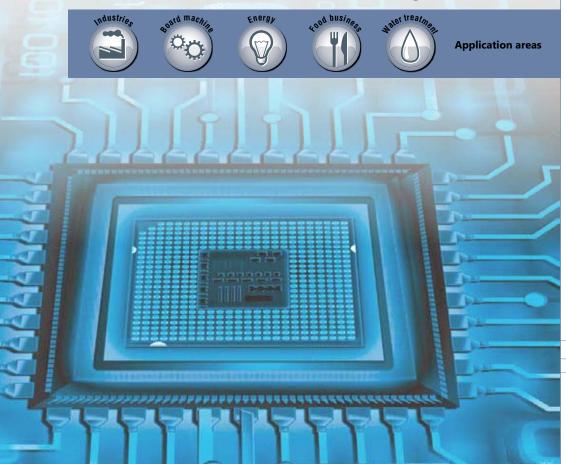
## **ODACEXEL**

DAT2065

HILLING LEF

### P.D.S. series temperature and signal transmitters and converters for DIN rail mounting

CE



ELECTRONIC AND CONTROL PROCESS DEVICES

www.datexel.it

SERIES

P.D.S.

and an and

### **DAT5028-DAT50 Trip amplifiers f** The devices of the "DAT. types of sensor coming to







### DAT5028-DAT5024 SERIES: Trip amplifiers for DIN rail mounting

The devices of the "DAT5028 - DAT5024" series can accept on input several types of sensor coming from the field.

- TRIP AMPLIFIERS with universal analog input configurable by Dip-switch indication on display of the trip level value (**DAT5028**)
- TRIP AMPLIFIERS with dedicated analog input (DAT5024)
- TRIP AMPLIFIERS with configurable input Voltage or Current (DAT5024E)

### INDEX

40 • DAT 5028 Trip amplifier with display for universal analog input

### 41 • DAT 5024

Trip amplifier with dedicated analog input

### 42 • DAT 5024E

Economic, isolated trip amplifier configurable by Dip-Switches

# TRIP AMPLIFIERS

### 05

())) DAIEXEL



Trip"DAT5028 / DAT5024 series" tripamplifiersamplifiers for DIN rail mounting

# **DAT 5028**

### **GENERAL DESCRIPTION**

The DAT 5028 device is able to acquire RTD or Tc sensors, mV, V or mA input signals connected to the universal analog input. By means of push-button and 4-digit display on the front panel, four different trip alarms are configurable. Each alarm threshold commands an output relay. Input signal can be retransmitted on the analog output in a Voltage or Current signal, configurable by means of dip-switch on the side of the device.

By means of an internal 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. The 1500 Vac isolation on all ways removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### **FEATURES**

- Universal Analog Input : Voltage, Current, TC, RTD, Resistance
- 2 SPDT + 2 SPST Relay Outputs (Version with 4 trips)
- 2 SPDT Relay Outputs (Version with 2 trips)
- 1 V/mA Analog Output for signal transmission
- 1500 Vac galvanic isolation on all ways
- High Accuracy
- EMC compliance CE Mark
- DIN rail suitable mounting (EN-50022)



ANALOG INPUT						
Туре	Range	Accuracy	Linearity	Thermal drift		
100 mV	-100 / +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
10 V	-10 / +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
20 mA	0 / 20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Pt100	-200 / +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Pt1K	-200 / +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Ni100	-60 / +180°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Ni1K	-60 / +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Res	0 / 2 Kohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Pot	0 / 100 %	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc J	-210 / +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc K	-210 / +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc R	-50 / +1760 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc S	-50 / +1760 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc B	+400 / +1825 C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc E	-210 / +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc T	-210 / +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		
Tc N	-210 / +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C		

Lead wire res. influence					
RTD (3 wires) 0.05 %/Ω (		(50 Ω max)			
mV, Tc < 0.8 uV/		′Ohm			
RTD excitation current, Res, Pot		~ 0.7 mA			
Pot. Nominal value		2 KOhm			
Sample Time		1 sec.			
Warm-up time		3 min.			

DIGITAL OUTPUT					
n.2 SPDT + n.2 SPST Relay					
Max Load (resistive)	2 A @ 250 Vac (per contact)				
	2 A @ 30 Vdc (per contact)				
Min Load	5Vdc , 10mA				
Voltage Max.	250Vac (50 / 60 Hz) ,110Vdc				

ANALOG OUTPUT				
Туре	Range	Accuracy	Linearity	Thermal drift
10 V	0 / +10 V	±0.1 % f.s.	±0.05 % f.s.	100 ppm/°C
20 mA	0 / +20 mA	±0.1 % f.s.	±0.05 % f.s.	100 ppm/°C
Load Resistance			< 500 Ohm (current output) > 5 KOhm (voltage output)	
Auxiliary	Auxiliary Voltage			

Emission



### TRIP AMPLIFIER WITH DEDICATED ANALOG INPUT

### **DAT 5024**

### **GENERAL DESCRIPTION**



The trip amplifier DAT 5024 is able to accept on its input a wide range of normalised voltage signals, normalised current signals coming from both active and passive current loop, signals coming from RTDs, Thermocouples and resistance sensors. The input type and the input range are fixed: refer to the section "Technical Specifications", table " Input type " to order the device. The Threshold 1 is programmed as high alarm, while, by dip-switches, it is possible to set the Threshold 2 either as high or low alarm. The trip level of each threshold can be adjusted by the potentiometers and checked by the test-points located on the front of the device. It is possible to adjust by potentioneters also the values of the hysteresis level and delay time. The isolation between input and contacts of relays is 2000 Vac. The isolation between input and contacts of relays is 2000 Vac. The isolation between use of the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications.

### **FEATURES**

- Available analog inputs: RTD, TC, Voltage, Resistance and Current
- Two independent threshold: two high alarm or one high and
- one low alarm
- Trip level and hysteresis adjustable by potentiometer
- Delay time adjustable by potentiometer up to 25 sec.
- Two relays SPDT 250Vac, 2A \_
- Galvanic isolated among the three ways \_
- High accuracy
- EMC compliant CE mark \_
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035











POWER SUPPLY		EMC (for industrial environments)		TEMPERATURE AND HUMIDITY	
Power supply voltage	18 ÷ 32 Vdc	DIRECTIVE 2004/108/EC		Operative temperature -30°C ÷ +6	
Current Consumption	110 mA max @ 24 Vdc		,,		
Rever. polarity protection	60 Vdc max	Immunity	EN 61000-6-2	Storage temperature	-40°C ÷ +85°C
AUXILIARY SUPPLY					<b>a a a a a</b>
(only for mA input)	> 18 V @ 20 mA	Emission EN 61000-6-4		Humidity (not condensed) 0 ÷ 90 %	
ISOLATION			HOUSING		
Input – power supply 2000 Vac 50 Hz, 1 min		1 min	Material	Self-extinguishing plastic	
Input – contact of relays 2000 Vac 50 Hz, 1 min		1 min	Dimensions (mm)	W x L x H : 90 x 112 x 22.5	
Power supply – contact of r	elays 1500 Vac 50 Hz,	1 min.	Weight	about 90 g.	

INPUT				
Input type*	Min	Мах		
Voltage				
50 mV	0 mV	+50 mV		
100 mV	0 mV	+100 mV		
500 mV	0 mV	+250 mV		
1 V	0 mV	+1 V		
10 V	0 mV	+10 V		
Thermocouple		1		
J	-210 °C	+1200 °C		
К	-210 °C	+1370 °C		
R	-50 °C	+1760 °C		
S	-50 °C	+1760 °C		
В	+400 °C	+1820 °C		
E	-210 °C	+1000 °C		
Т	-210 °C	+400 °C		
Ν	-210 °C	+1300 °C		
RTD				
Pt100	-50 °C	+400 °C		
Pt1000	-200 °C	+200 °C		
Ni100	-60 °C	+180 °C		
Ni1000	-60 °C	+150 °C		
Resistance				
250 Ω	0 Ω	250 Ω		
2 ΚΩ	0 Ω	2000 Ω		
Current mA				
20 mA	0 mA	20 mA		

Input calibration (1)	±0.1% f.s.
Linearity (1)	
mV, V, mA	± 0.05% f.s.
Tc, RTD	± 0.2% f.s.
Input impedance	
mV, Tc	> 1 MΩ
V	> 100 ΚΩ
mA	< 50 Ω
RTD excitation current	
Typical	0.6 mA
Thermal drift (1)	
Full scale	± 0.02 % / °C
CJC comp.	
Tc	± 0.5 °C
Thermal drift CJC	
Full scale	± 0.02 °C/ °C
Line resistance influence (1)	
mV, Tc	< 0.8 uV/Ohm
Threshold	Adjustable from 2 up to 98% f.s.
Hysteresis	Adjustable from 0.5 up to 10 % f.s.
Delay	Adjustable up to 25 sec.

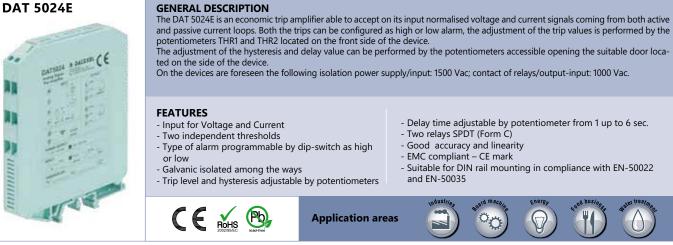
### **RELAY OUTPUT**

N° 2 SPDT		
Contact rating	250 Vac, 2A	
Isolation between contact	1000 Vac max	

(1) referred to input Span (difference between max. and min. values)

\* Specify in phase of order

### ECONOMIC, ISOLATED TRIP AMPLIFIER CONFIGURABLE BY DIP-SWITCHES



Power Supply		EMC (for industrial environments)		TEMPERATURE AND HUMIDITY	
Power supply voltage	18 ÷ 30 Vdc	DIRECTIVE 2004/108/EC		Operative temperature	-20°C ÷ +60°C
Current Consumption	110 mA max @ 24 Vdc			- Frank - Fran	
Rever. polarity protection	60 Vdc max	Immunity	EN 61000-6-2	Storage temperature	-40°C ÷ +85°C
AUXILIARY SUPPLY					
(only for mA input)	> 18 V @ 20 mA	Emission EN 61000-6-4		Humidity (not condensed)	0 ÷ 90 %
ISOLATION			HOUSING		
Input – Power Supply 1500 Vac 50 Hz, 1 min		l min	Material	Self-extinguishing plastic	
Input – contact of relays 1000 Vac 50 Hz, 1		l min	Dimensions (mm)	W x L x H : 90 x 112 x 12.5	
Power Supply – Contact of relays 1000 Vac 50 Hz, 1		l min.	Weight	about 90 g.	

INPUT				
Input type	Min	Мах		
	0 V	5 V		
Voltage	0 V	10 V		
voltage	1 V	5 V		
	2 V	10 V		
Current	0 mA	20 mA		
Current	4 mA	20 mA		
Maximum operating v	oltage (on resistive loa	ad)		
125 Vac, 30 Vdc				
Maximum operating current (on resistive load)				
0.5 A @ 125 Vac, 1 A @ 30 Vdc				
Maximum switching c	apacity (on resistive lo	ad)		
62.5 VA, 30 W				
Trip value regulation				
Configurable from 2 to	96 % of f.s.			
Delay time value regulation				
Configurable from 1 to 6 sec.				
Hysteresis value regul	ation			
Configurable from 1 al 9.5 % of f.s.				

Input calibration (1)		
±0.1% f.s.		
Thermal drift (1)		
Full scale	± 0.02 % / °C	

### RELAY OUTPUT

N° 2 SPDT (Form C)

(1) referred to input Span (difference between max. and min. values)

# ELECTRONIC AND CONTROL PROCESS DEVICES

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### **ODAIEXEL**

6

DACEXEL

DAT5024

### "DAT5028 / DAT5024 series" trip amplifiers for din rail mounting















### "DAT200, DAT500 SERIES": signal transmitters and converters,galvanic isolators

The transmitters and converters of the DAT200 series can accept on their input signal coming from potentiometer sensors (DAT205) or voltage and current signals (DAT207) The series is composed of:

- Not isolated transmitter for potentiometer input from 1 Kohm up to 10 Kohm. Powered from 4÷20 mA current loop (**DAT205 2W**).
- Not isolated converter for potentiometer input from 1 Kohm up to 10 Kohm. Fixed range (**DAT205 3W**).
- Not isolated transmitter for mV, V, mA input . Fixed range. Powered from 4÷20 mA current loop (**DAT207 2W**).
- Not isolated converter for mV, V, mA input . Fixed range. (DAT207 3W).
- Self-powered, 3000 Vac isolated converter for 0÷20 mA current loop. (**DAT511**).
- Self-powered, 1500 Vac isolated converter for 0÷20 mA current loop. Hart compatible (**DAT511-H**).

### INDEX

48

46 • DAT 205 2W
 Fixed range Transmitter for potentiometer
 DAT 205 3W
 Fixed range Converter for potentiometer

### 47 • DAT 207 2W Fixed range transmitter for mV,V and mA signals DAT 207 3W Converter for mV,V and mA signals

DAT 511
 Self-powered current loop isolator
 DAT 511/H
 Self-powered current loop isolator HART compatible

# DAT200/500 SERIES

### 06



DAT200Signal transmitters and<br/>converters, galvanic<br/>isolators

# **DAT 205 2W**

### GENERAL DESCRIPTION

The transmitter DAT 205 2W is designed to provide on output a 4÷20 mA current loop linearised signal proportional with the variation of resistance introduced from the potentiometer connected to its input; to make the measure, a 1 Vdc voltage reference is provided at the ends of the potentiometer. The regulation of the zero and full-scale value are made using the ZERO and SPAN potentiometers; there is not influence between the regulations.

- High accuracy

ries

- EMC compliant – CE mark

EN-50022 and EN-50035

### **FEATURES**

- Input for potentiometer
- Zero and Span values adjustable by
- potentiometers
- Independent Zero and Span adjustment

Min

0%

CE in the

INPUT

Input type

Potentiometer

(Rnom.1 ... 10KΩ)

Calibration Potentiometer

Linearity ± 0.1 % f.s. Thermal drift

Full scale

**Application areas** 

Span mi

Max

100%

± 0.1 % f.s.

± 0.02 % / °C

				$\underline{0}$	
	OUTPUT				
in	Output type	Min	Max	Span min	
	Current	4 mA	20 mA	-	
	Burn-out values				
	Max. value output		25 mA		
	Response time (10÷90%)		about 500 m	s	

- Suitable for DIN rail mounting in compliance with

### **POWER SUPPLY** Power supply voltage

Power supply voltage		10 32 Vdc	
Reverse pola	Reverse polarity protection		
TEMPERAT	FURE & HUM	<b>NIDITY</b>	
Operative ter	nperature	-20°C +70°C	
Storage temp	perature	-40°C +85°C	
Humidity (not	t condensed)	0 90 %	
EMC (for industrial environments)			
DIRECTIVE 2004/108/EC			
Immunity	mmunity EN 61000-6-2		
Emission EN 61000-6-4		÷	
HOUSING			
Material Self-extinguishing plastic			
Dim. (mm)	W x L x H : 62 x 64 x 17		
Weight	about 50 g.		

### FIXED RANGE CONVERTER FOR POTENTIOMETER

- Suitable for DIN rail mounting in compliance with

Energy

### **GENERAL DESCRIPTION**

The converter DAT 205 3W is designed to provide on output a linearised voltage or current signal proportional with the variation of resistance introduced from the potentiometer connected to its input; to make the measure, a 1 Vdc voltage reference is provided at the ends of the potentiometer. The regulations of the zero and full-scale value are made using the ZERO and SPAN potentiometers; there is not influence between the regulations.

### FEATURES

- Input for potentiometer - Zero and Span values adjustable by potentiometers

- Independent Zero and Span adjustment

Min

0%



Potentiometer

(Rnom.1 ... 10KΩ) Calibration

Potentiometer Linearity ± 0.1 % f.s.

Thermal drift

Full scale

INPUT Input type

	Application	area
_		

Max

100%

± 0.1 % f.s.

± 0.02 % / °C

Span

s (		ं		
	OUTP	UT		
min	Outpu	ıt type	Min	Ma

- Output in voltage or current

- EMC compliant – CE mark

EN-50022 and EN-50035

and machi

- High accuracy

ndustries

ı	Output type	Min	Мах	Span min		
	Current	0 mA	20 mA	-		
	Voltage	0 V	10 V	-		
	Burn-out values					
	Max. value output		25 mA or 15V			
	Response time (10÷90%)		about 500 ms			

POWER SUPPLY					
Power suppl	18 30 Vdc				
Reverse pola	60 Vdc max				
CURRENT	CURRENT CONSUMPTION				
Current outp	out	30 mA max.			
Voltage outp	10 mA max.				
TEMPERAT	TEMPERATURE & HUMIDITY				
Operative ter	nperature	-20°C +70°C			
Storage temp	perature	-40°C +85°C			
 Humidity (not	0 90 %				
EMC (for industrial environments)					
DIRECTIVE 2004/108/EC					
Immunity	EN 61000-6-2				
Emission	EN 61000-6-4				
HOUSING					
Material	Self-extinguis	hing plastic			
Dim. (mm)	W x L x H : 62 x 64 x 17				

Weight about 50 g.

DAT 205 3W

### FIXED RANGE TRANSMITTER FOR POTENTIOMETER

- 4÷20 mA current loop linearised output



### FIXED RANGE TRANSMITTER FOR mV,V AND mA SIGNALS

10 .. 32 Vdc

-20°C .. +70°C

-40°C .. +85°C

0..90%

**DAT 207 2W** 

**POWER SUPPLY** 

Power supply voltage

Operative temperature

Storage temperature

Immunity

HOUSING

Emission

Material

Weight

Humidity (not condensed)

DIRECTIVE 2004/108/EC

Reverse polarity protection 60 Vdc max

**TEMPERATURE & HUMIDITY** 

EMC (for industrial environments)

EN 61000-6-2

EN 61000-6-4

Dim. (mm) W x L x H : 62 x 64 x 17

about 50 g.

### **GENERAL DESCRIPTION**

The transmitter DAT 207 2W is designed to provide on output a 4÷20 mA current loop signal proportional with the variation of the normalised current or voltage signal applied to its input.

**Application** areas

\_

Max

0 ÷ 200 mV

0 ÷ 20 V

0 ÷ 50 mA

± 0.1 % f.s.

± 0.02 % / °C

**Application areas** 

### FEATURES

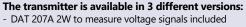
- Input for current or voltage signals
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- 4÷20 mA current loop output
- High accuracy
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

Min

0 ÷ 5 mV

0 ÷ 200 mV

0 ÷ 5 mA



- between 0 ÷ 5 mV and 0 ÷ 200 mV;
- DAT 207B 2W to measure voltage signals included between  $0 \div 200$  mV and  $0 \div 20$  V;
- DAT 207C 2W to measure current signals between 0 ÷ 5 mA and 0 ÷ 50 mA.

C

C	E	ROHS 2002/96/EC	Pb kad-free

INPUT

Input type

Version"A"

Version"B'

Version"C"

Calibration

mV, V, mA

Linearity

± 0.1 % f.s.

Full scale

Thermal drift

Current

Voltage

Re	OHS 796/EC R	ad-free
----	-----------------	---------

	OUTPUT				
Span min	Output type	Min	Max	Span min	
	Current	4 mA	20 mA	-	
-	Burn-out values				
-	Max. value output		25 mA		
	Response time (10÷90%)		about 300 ms		

### **CONVERTER FOR mV,V AND mA SIGNALS**

Self-extinguishing plastic

# 3 S **DAT 207**

### **GENERAL DESCRIPTION**

The converter DAT 207 3W is designed to provide on output a 4÷20 mA current loop signal proportional with the variation of the normalised current or voltage signal applied to its input.

### FEATURES

- Input for current or voltage signals
- Zero and Span values adjustable by potentiometers
- Independent Zero and Span adjustment
- Output in voltage or current
- High accuracy
- EMC compliant CE mark

CE KOHS

Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

### The converter is available in 3 different versions:

- DAT 207A 3W to measure voltage signals included between 0 ÷ 5 mV and 0 ÷ 200 mV;
- DAT 207B 3W to measure voltage signals included between 0  $\div$  200 mV and 0  $\div$  20 V;
- DAT 207C 3W to measure current signals between 0 ÷ 5 mA and 0 ÷ 50 mA.

POWER SUPPLY					
Power suppl	18 30 Vdc				
Reverse pola	rity protection	60 Vdc max			
CURRENT	CONSUMP	ΓΙΟΝ			
Current outp	out	30 mA max.			
Voltage outp	out	10 mA max.			
TEMPERA	FURE & HUI	MIDITY			
Operative ter	nperature	-20°C +70°C			
Storage temp	perature	-40°C +85°C			
Humidity (no	t condensed)	0 90 %			
EMC (for in	dustrial envii	ronments)			
DIRECTIVE	2004/108/	EC			
Immunity	EN 61000-6-2	2			
Emission	EN 61000-6-4	4			
HOUSING					
Material	Self-extinguishing plastic				
Dim. (mm)	W x L x H : 62 x 64 x 17				
Weight	about 50 g.				

INPUT					
Input type	Min		Max	Span min	
Voltage					
Version"A"	0 ÷ 5 mV	0 ÷	200 mV	-	
Version"B"	0 ÷ 200 mV	0	÷ 20 V	-	
Current					
Version"C"	0 ÷ 5 mA	0 ÷ 50 mA		-	
Calibration					
mV, V, mA	mV, V, mA			± 0.1 % f.s.	
Linearity					
± 0.1 % f.s.					
Thermal drift					
Full scale			± 0.02 % / °C		

OUTPUT	Ουτρυτ					
Output type	Min	Max	Span min			
Current	0 mA	20 mA	-			
Voltage	0 V	10 V	-			
Burn-out values	Burn-out values					
Max. value output		25 mA or 15V				
Response time (10	Response time (10÷90%)		about 300 ms			
í '		1				

# **DAT 511**

TEMPERATURE & HUMIDITY					
Operative ter	-20°C +70°C				
Storage temp	-40°C +85°C				
Humidity (not	t condensed)	0 90 %			
EMC (for in	dustrial envi	ronments)			
DIRECTIVE	2004/108/	′EC			
Immunity	EN 61000-6-	2			
Emission	EN 61000-6-	4			
HOUSING					
Material Self-extinguishing plastic					
Dim. (mm)	W x L x H : 62 x 64 x 17				
Weight	About 60 g.				

### **GENERAL DESCRIPTION**

The transmitter DAT 511 is a passive 0÷20 mA current loop isolator.

The input current, variable from 0 up to 20 mA, is converted in an output current of the same value but keeping a galvanic isolation from the input circuit.

The converter is a passive isolator: this means that the device employs the measurement signal to power it self, so it does not require any external power supply.

### FEATURES

- 0÷20 mA isolated conversion

- No external supply required - 3000 Vac galvanic isolation

**GENERAL DESCRIPTION** 

- 0÷20 mA isolated conversion

- No external supply required

- 1500 Vac galvanic isolation

FEATURES

- Hart compatible

**Application areas** 

INPUT				OUTPUT
Input type	Min	Max	Span min	Output typ
Current	0 mA	20 mA	-	Current
Max. INPUT sign	50 mA		Burn-out v	
Load resistance (Rload)			Max. value o	
From 0 to 700 ohm				Isolation v
Thermal drift			3000 Vac, 50	
Full scale		± 0.02 %	S∕°C	Response ti

OUTPUT				
Output type	Min	Max	Span min	
Current	0 mA	20 mA	-	
Burn-out values				
Max. value output	25 mA			
Isolation voltage				
3000 Vac, 50 Hz 1 min.				
Response time (10÷90%) About 20 ms				

- Good accuracy and performance stability

- Suitable for DIN rail mounting in compliance with

- EMC compliant – CE mark

EN-50022 and EN-50035

DAT200, DAT500 SERIES



<b>TEMPERATURE &amp; HUMIDITY</b>					
Operative ter	Operative temperature				
Storage temperature		-40°C +85°			
Humidity (not	Humidity (not condensed)				
EMC (for industrial environments)					
DIRECTIVE 2004/108/EC					
Immunity	EN 61000-6-2				
Emission	EN 61000-6-	4			
HOUSING					
Material	Self-extingu	ishing plastic			
Dim. (mm)	W x L x H : 6	52 x 64 x 17			
Weight					

	Pb, tead-free	Applicati	on areas	ust
INPUT				0
Input type	Min	Мах	Span min	ο
Current	0 mA	20 mA	-	Cι
Max. INPUT sig	gnal	50 mA		Bı
Load resistanc	e (Rload)			М
From 0 to 700 oh	m			ls
Thermal drift				15
Full scale		± 0.02%	/ °C	Re
Bandwidth				

measurement signal to power itself, so it does not require any external power supply.

From 0.5 up to 4 KHz bidirectional within 3 dB

	OUTPUT			
۱	Output type	Min	Max	Span min
	Current	0 mA	20 mA	-
	Burn-out value	s		
	Max, value output		25 mA	

- Good accuracy and performance stability

compliance with EN-50022 and EN-50035

lation voltage 0 Vac, 50 Hz 1 min. ponse time (10÷90%) About 20 ms

SELF-POWERED CURRENT LOOP ISOLATOR HART COMPATIBLE

- EMC compliant – CE mark

- Suitable for DIN rail mounting in

The transmitter DAT 511/H is a passive 0÷20 mA current loop isolator. The input current, variable from 0 up to 20 mA, is converted in an output current of the same value but keeping a galvanic isolation from the input circuit. The device allows the bidirectional communication of signals HART protocol compatible. The converter is a passive isolator: this means that the device employs the

### SELF-POWERED CURRENT LOOP ISOLATOR

# ELECTRONIC AND CONTROL PROCESS DEVICES

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## ΦΟΔΙΕΧΕΙ

### Signal transmitters and converters, galvanic isolators

<image>

49

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### "DAT3000 SERIES" data acquisition and control modules

The distributed I/O modules of the DAT3000 series represent a complete solution for the acquisition and control of the analog and digital I/O signals. The series is composed of:

- Serial line converters and repeaters (DAT3580, DAT3580 USB, DAT3580 MBTCP, DAT3590).
- Modules for digital inputs and outputs (DAT3130, DAT3140, DAT3148/8, DAT3148/12, DAT3188/4, DAT3188/8).
- Modules for analog inputs (DAT3011, DAT3014, DAT3015, DAT3016, DAT3017, DAT3018, DAT3019).
- Modules with analog outputs (DAT3022, DAT3024, DAT3028).

The devices communicate on the RS-485 serial line by the MODBUS RTU communication protocol and are able to communicate with the host computer on multipoint net using only two wires.

### INDEX

- 52 DAT 3580 Isolated converter RS232 → RS485 / 422 **DAT 3580-USB** Isolated converter USB - RS485 / 422
- 53 DAT 3580-MBTCP Isolated Ethernet Gateway Modbus TCP-Modbus RTU **DAT 3590** Repeater/ Isolator RS485 / 422
- 54 · DAT 3130 Distributed I/O Module 4 digital inputs + 4 relay outputs on RS-485 network **DAT 3140** Distributed I/O Module 4 digital inputs + 8 NPN outputs on RS-485 network
- 55 DAT 3148/8 Distributed I/O Module 8 digital inputs on RS-485 network DAT 3148/12 Distributed I/O Module 12 digital inputs on RS-485 network
- 56 DAT 3188/4 Distributed I/O Module 4 digital inputs + 8 PNP outputs on RS-485 network DAT 3188/8 Distributed I/O Module 8 digital inputs + 8 PNP outputs on RS-485 network
- 57 DAT 3011 Universal Remote I/O module on RS-485 network
- DAT 3014 Remote I/O module 4 channels RTD input on RS-485 network 58 • DAT 3015-I Remote I/O module 4 channels +/-20mA input on RS-485 network
- 59 DAT 3015-V Remote I/O module 4 channels +/-10V input on RS-485 network
- **DAT 3016** Remote I/O module 4 channels mV / TC input on RS-485 network
- 60 DAT 3017-I Remote I/O module 8 channels ±20mA input on RS-485 network DAT 3017-V Remote I/O module 8 channels ±10V input on RS-485 network
- 61 **DAT 3018** Remote I/O module 8 channels mV / TC input on RS-485 network **DAT 3019** Remote I/O module 8 channels RTD input on RS-485 network
- 62 **DAT 3022** Remote I/O module 2 channels V / mA output on RS-485 network DAT 3024 Remote I/O module 4 channels V / mA output on RS-485 network
- DAT 3028 Remote I/O module 8 channels Voltage output on RS-485 network **63** •

# DAT3000 SERIES

## 07



### **ØDATEXEL**

DAT 3580	The device tees a full i allowing th It is design sion up to	solation betwe le use of the de ed to operate e 115.2 Kbps. The	i isolated interfa een power supp evice even in the ither on serial in transmission is	ly, serial line RS-232 and heavy environmental cor iterface RS-422 full-duples asynchronous without se	Inchronous serials lines RS232 and F serial line RS-485 or 422 removes e nditions. x 4 wires or RS485 half-duplex 2 wire ttings of protocol, data format and CTS, etc) to control the baud rate.	ventual s, with a	ground-loop effects, baud-rate transmis-
o patexel	ES ronous serial data transmission atic baud-rate fitting up to 115.2 Kbps ie up to 1200 m o point connection or multipoint connection up to dules AC power supply			<ul> <li>Galvanic isolation on all ways</li> <li>RS232 connection on DB9 or removable terminals</li> <li>EMC compliance – CE mark</li> <li>EIA RS232, RS485 and RS422 compliant</li> <li>Suitable for DIN rail mounting in compliance with EN-50022</li> </ul>			
		ROHS 2002/96/EC	a-tree	Application areas	version and the sense of the se	Food bu	sines aster treatment
POWER SUPPLY		EMC (for in	ndustrial envir	onments)	RS485 Interface		
10 ÷ 30 Vdc		DIRECTIV	E 2004 / 108	/ EC	Baud-rate	up to	115.2 Kbps
9 ÷ 18 Vac (18 ÷ 30 Vac optio	onal)	Immunity EN 61000-6-2		1.2 Kn		n @ 38400 bps	
CURRENT CONSUMPTIO	N	Emission EN 61000-6-4				@ 19200 bps	
35 mA typ. @ 24Vdc		HOUSING				@ 9600 bps	
ISOLATIONS		Material	Self-extinguis	shing plastic			@ 4800 bps
Power Supply/ RS232		Mounting	DIN rail				@ 2400 bps
Power Supply/ RS485-422	2000 Vac, 50 Hz, 1 min.	Dim. (mm)	W x L x H : 12	0 x 100 x 22.5			@ 1200 bps
RS232 / RS485-422	1 11111.	Weight	About 150 g.		Number of modules in multipoin		32 max.
TEMPERATURE & HUM	DITY	CONNECT			Switching time TX/RX (RS485)		150 us.
Operative temperature	-20°C ÷ +60°C	RS-232		ovable screw terminals		ationall	
Storage temperature	-40°C ÷ +85°C	KS-485/422	removable so	rew terminals	Internal terminator resistance (op		· · ·
Humidity (not condensed)	0 ÷ 90 %				(1) = The maximum distance de devices connected, type c		

ISOLATED CONVERTER USB → RS485 / 422

		The device guarantees the use of the It is designe	a full isolation he device even ed to operate ei	is an isolat between p in the hea ther on ser	ted interface converter betwee ower supply, USB and serial lin vy environmental conditions. ial interface RS-422 full-duples on is asynchronous without se	e RS-485 or 422 removes « 4 wires or RS485 half-du
	DATE STREET	- Automat - Distance - Point to	EATURES Asynchronous serial data transmission Automatic baud-rate fitting up to 115.2 Kbps Distance up to 1200 m Point to point connection or multipoint connection up to 32 modules			<ul> <li>DC or AC power</li> <li>Galvanic isolatio</li> <li>EMC compliance</li> <li>USB 2.0. EIA RS4</li> <li>Suitable for DIN with EN-50022</li> </ul>
	En en	Ce		b) Tree	Application areas	Industries Seatt machine
	POWER SUPPLY		EMC (for in	dustrial e	nvironments)	RS485 Interface
	10 ÷ 30 Vdc		DIRECTIVE	2004 / '	108 / EC	Baud-rate
	9 ÷ 18 Vac (18 ÷ 30 Vac optiona	I)	Immunity	EN 61000	-6-2	
	CURRENT CONSUMPTION		Emission	EN 61000	-6-4	
	35 mA typ. @ 24Vdc		HOUSING			Max. distance / bau
	ISOLATIONS		Material		nguishing plastic	ratio (recommended)
	Power Supply/ USB		Mounting	DIN rail		
	Power Supply/ RS485-422 2	2000 Vac, 50 Hz, 1 min.	Dim. (mm)		I : 120 x 100 x 22.5	
	USB / RS485-422		Weight	About 15	0 g.	Number of modules ir
	<b>TEMPERATURE &amp; HUMIDI</b>	тү			e integrated	Switching time TX/RX
	Operative temperature	-20°C ÷ +60°C	RS-485/422		le screw terminals	Internal terminator res
	Storage temperature	-40°C ÷ +85°C	103 703/722	Terriovau		(1) = The maximum c
	Humidity (not condensed)	0 ÷ 90 %				devices connect

### hronous serial lines RS485 or RS422 that es eventual ground-loop effects, allowing

duplex 2 wires, with a baud-rate transmis-a format and baud rate.

- er supply ion on all ways
- ce CE mark S485 and RS422 compliant
- N rail mounting in compliance

RS485 Interface				
Baud-rate	up to	115.2 Kbps		
Max. distance / baud-rate	1.2 Km	@ 38400 bps		
	2 Km @	۵ 19200 bps		
	3 Km @ 9600 bps			
ratio (recommended) (1)	4 Km @ 4800 bps			
	5 Km @ 2400 bps			
	7 Km @ 1200 bps			
Number of modules in multipoint		32 max.		
Switching time TX/RX (RS485)		150 us.		
Internal terminator resistance (op	tional)	120 Ohm (optional)		

n distance depends of: number of ected, type of cabling, noises, etc...

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### ETHERNET ISOLATED GATEWAY MODBUS TCP → MODBUS RTU

580-MBTCP	The gateward gh the Mo By means of the Modbu	dbus TCP prot of the Telnet ir is RTU side op	IBTCP allows to conr tocol. hterface it is possible ptions (baud rate, etc	to configure all the	TU devices of a RS-485 network t e Modbus TCP side options (IP ac he use even in the heavy environ	ldress, sub	onet mask, etc) and	
DAT 35	- Telnet co - RJ45 con - RS-485 S - Modbus	interface 10/100Base-T onfiguration		- Remov. - LED sig - Galvani - EMC co - Etherne	e up to 1200 m, up to 32 device able screw-terminal connection nalling for Link/Act Ethernet, se c Isolation on all ways mpliance – CE mark t IEEE 802.3 and RS485 complia e for DIN rail mounting in comp	rial RX-TX nt	, power supply	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ACTION ACTION ACTION	Ce		Appli	cation areas	vodustrier vodust	) food bu	singer water treatment
POWER SUPPLY			EMC (for in	ndustrial environm	ents)	Network interface	Ether	net 10/100 Base-T
18 ÷ 30 Vdc			DIRECTIV	E 2004 / 108 / EC		Protocol	Modk	ous TCP
CURRENT CONSUMP	ΓΙΟΝ		Immunity	EN 61000-6-2		Connection	RJ-45	
45 mA typ. @ 24Vdc (slee	o mode)		Emission	EN 61000-6-4		Baud-rate (RS-485)	up to	115.2 Kbps
80 mA max			HOUSING	i			1.2 Kn	n @ 38400 bps
ISOLATIONS			Material	Self-extinguishing	plastic		2 Km (	@ 19200 bps
Power Supply/ Ethernet	1500 Vac, 50	0 Hz, 1 min.	Mounting	DIN rail		Max. distance / baud-rate	3 Km (	@ 9600 bps
Power Supply/ RS485	2000 Vac, 50	0 Hz, 1 min.	Dim. (mm)	W x L x H : 120 x 10	00 x 22.5	ratio (recommended) (1)	4 Km (	@ 4800 bps
11.25	2000 Vac 5	0 Hz, 1 min.	Weight	About 150 g.			5 Km (	@ 2400 bps
Ethernet / RS485	2000 vac, J						71/10	0 10 00 1
11.3			CONNECT	ION			7 KM (	@ 1200 bps
Ethernet / RS485	MIDITY	÷ +60°C	<b>CONNECT</b> Ethernet	RJ-45		Number of modules in multipo		@ 1200 bps 32 max.
Ethernet / RS485	MIDITY -20°C	÷ +60°C ÷ +85°C			terminals	Number of modules in multipe Switching time TX/RX (RS485)		

devices connected, type of cabling, noises, etc...

DAT3000 SERIES

### **REPEATER/ ISOLATOR RS485 / 422**



### **GENERAL DESCRIPTION**

The device DAT 3590 is an isolated repeater between asynchronous serials lines RS485 or RS422 that guarantees a full isolation between power supply and serial line removing eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions. It is designed to operate either on serial interface RS-422 full-duplex 4 wires or RS485 half-duplex 2 wires, with a baud-rate transmission up to 115.2 Kbps.

- DC or AC power supply

- EIA RS485 and RS422 compliant

- Suitable for DIN rail mounting in compliance

- Galvanic isolation - EMC compliance – CE mark

with EN-50022

The transmission is asynchronous without settings of protocol, data format and baud rate.

### FEATURES

- Asynchronous serial data transmission
- Automatic baud-rate fitting up to 115.2 Kbps
- Distance up to 1200 m
- Point to point connection or multipoint connection up to 32 modules
  - (Pb)

Immunity Emission

HOUSING

Material

Weight

CONNECTION

Mounting

Self-extinguishing plastic

EMC (for industrial environments) DIRECTIVE 2004 / 108 / EC

EN 61000-6-2

EN 61000-6-4

Dim. (mm) W x L x H : 120 x 100 x 22.5

About 150 g.

RS485/422 removable screw terminals

DIN rail

Baud-rate	up to 1	115.2 Kbps	
	1.2 Km	n @ 38400 bps	
	2 Km @ 19200 bps		
Max. distance / baud-rate	3 Km @ 9600 bps		
ratio (recommended) (1)	4 Km @ 4800 bps		
	5 Km @ 2400 bps		
	7 Km @ 1200 bps		
Number of modules in multipoint		32 max.	
Switching time TX/RX (RS485)		150 us.	
Internal terminator resistance (op	tional)	120 Ohm	

mber of devices connected, type of cabling, noises, etc...

**POWER SUPPLY** 10 ÷ 30 Vdc 9 ÷ 18 Vac (18÷24 Vac optional) **CURRENT CONSUMPTION** 35 mA @ 24Vdc ISOLATIONS Power Supply/ RS485-422 2000 Vac, 50 Hz, 1 min. RS485-422 / RS485-422 2000 Vac, 50 Hz, 1 min.

### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C ÷ +60°C
Storage temperature	-40°C ÷ +85°C
Humidity (not condensed)	0 ÷ 90 %

	Max. distance / baud-rate ratio (recommended) (1)	2 Km @	<u>۵</u> 19200	
		3 Km @	) 9600 ۋ	
		4 Km @	0 4800 I	
		5 Km @	0 2400	
		7 Km @	@ 1200 k	
			32 max	
			150 us.	
	Internal terminator resistance (opt	tional)	120 Oh	
	(1) = The maximum distance de			

### **(D)** DATEXEL



### DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 4 RELAY OUTPUTS ON RS-485 NETWORK

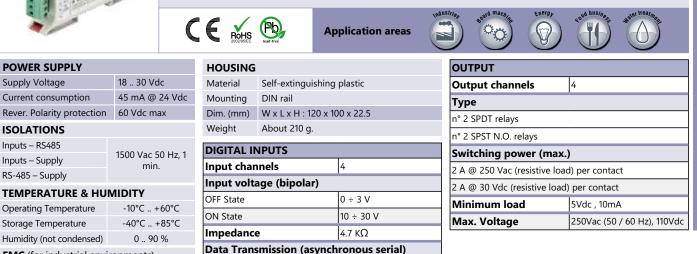
### GENERAL DESCRIPTION

e device DAT 3130 is able to acquire up to 4 digital inputs and to drive up to 4 relay outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network.

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. The 1500 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

### FEATURES

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
  - MODBUS RTU/ASCII protocol
  - 4 digital inputs
  - 4 relay outputs (2 SPDT + 2 SPST)
- Watch-Dog alarm
- Configurable from a remote terminal
- Three ways galvanic isolation 1500 Vac
- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting



### **TEMPERATURE & HUMIDITY**

**POWER SUPPLY** 

Current consumption

Supply Voltage

ISOLATIONS

Inputs – RS485

Inputs – Supply

RS-485 - Supply

DAT3000 SERIES

54

Operating Temperature	-10°C +60°C			
Storage Temperature	-40°C +85°C			
Humidity (not condensed)	0 90 %			
EMC (for industrial environments)				

EIVIC	(for	industrial	environment	CS

DIRECTIVE 2004 / 108 / EC		
Immunity	EN 61000-6-2	
Emission	EN 61000-6-4	

up to 38.4 Kbps

1.2 Km - 4000ft

5 ms max

### GENERAL DESCRIPTION

Baud rate Max Distance

Sample time

The device DAT 3140 is able to acquire up to 4 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network.

DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 8 NPN OUTPUTS ON RS-485 NETWORK

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. The galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

### FEATURES

- Field Bus data acquisition
- Master/Slave communication on RS-485 network

DIN rail

About 210 g.

Self-extinguishing plastic

W x L x H : 120 x 100 x 17.5

4

0 ÷ 3 V

47 KO

10 ÷ 30 V

up to 38.4 Kbps

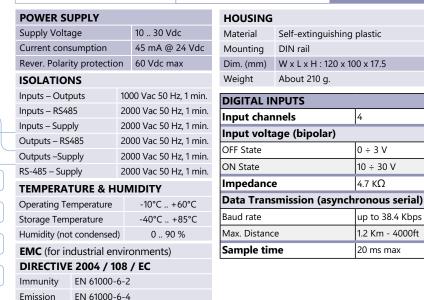
1.2 Km - 4000ft

20 ms max

- MODBUS RTU/ASCII protocol
- 4 digital inputs
- 8 digital outputs, NPN type
  - CE Kohs

Application areas

OUTPUT **Output channels** 8 NPN Tvpe 600 mA per channel Max. Load 3 A max per module Max. Voltage 30 Vdc **Over-current** NO protection



- Configurable from a remote terminal - Galvanic isolation on all ways
  - High accuracy

- Watch-Dog alarm

- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting

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1	- 14	(at	1	1×××
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H		and the second	-	

3140	-	and the second second
DAT 3140		
	Sector of	
	HIII	Cl.

### DICITAL INDUITS ON DS 405 NETWORK CTDIDII

STRIBUTED I/O MO	DOLL O DIGI					
DAT 3148/8	The work The The	. To assure safe o 2000 Vac galvanic	PTION 8 is able to acquire up to 8 digital inpu peration of the system, the device is er isolation between inputs, power supp n worst ambient conditions.	quipped wit	h two Watch-Dog timers.	
HILL CONTRACT	- Fie - Ma - M0 - 8 c	TURES Id Bus data acqu aster/Slave comr DDBUS RTU/ASC ligital inputs atch-Dog alarm	nunication on RS-485 network	- Four - High - EMC	igurable from a remote ways galvanic isolation accuracy compliance – CE Mark mpliance to EN-50022 I	2000 Vac
			Application area		Stries South machine Ene	rache track and the track and
POWER SUPPLY		EMC (for in	ndustrial environments)		DIGITAL INPUTS	
POWER SUPPLY Supply Voltage	10 30 Vdc		ndustrial environments) <b>E 2004 / 108 / EC</b>		DIGITAL INPUTS Input channels	8
	10 30 Vdc 35 mA @ 24 Vdc	DIRECTIV	,			
Supply Voltage	35 mA @ 24 Vdc	DIRECTIV	E 2004 / 108 / EC		Input channels Input voltage (bip OFF State	0 ÷ 3 V
Supply Voltage Current consumption	35 mA @ 24 Vdc	<b>DIRECTIV</b> Immunity	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4		Input channels Input voltage (bipe OFF State ON State	olar) 0 ÷ 3 V 10 ÷ 30 V
Supply Voltage Current consumption Rever. Polarity protection <b>ISOLATIONS</b>	35 mA @ 24 Vdc	DIRECTIV Immunity Emission HOUSING	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4		Input channels Input voltage (bip OFF State ON State Impedance	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1	35 mA @ 24 Vdc 60 Vdc max	DIRECTIV Immunity Emission HOUSING	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial)
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1 Inputs – RS485 2	35 mA @ 24 Vdc 60 Vdc max 500 Vac 50 Hz, 1 mir	DIRECTIV Immunity Emission HOUSING	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic DIN rail		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission Baud rate	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial) 38.4 Kbps
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1 Inputs – RS485 2 Inputs – Supply 2	35 mA @ 24 Vdc 60 Vdc max 500 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir	<ul> <li>DIRECTIVE</li> <li>Immunity</li> <li>Emission</li> <li>HOUSING</li> <li>Material</li> <li>Mounting</li> <li>Dim. (mm)</li> </ul>	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic DIN rail W x L x H : 120 x 100 x 17.5		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission Baud rate Max. Distance	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial) 38.4 Kbps 1.2 Km - 4000ft
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1 Inputs – RS485 2 Inputs – Supply 2	35 mA @ 24 Vdc 60 Vdc max 500 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir	<ul> <li>DIRECTIVE</li> <li>Immunity</li> <li>Emission</li> <li>HOUSING</li> <li>Material</li> <li>Mounting</li> <li>Dim. (mm)</li> </ul>	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic DIN rail		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission Baud rate	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial) 38.4 Kbps
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1 Inputs – RS485 2 Inputs – Supply 2 RS-485 – Supply 2 TEMPERATURE & HU	35 mA @ 24 Vdc 60 Vdc max 500 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir MIDITY	<ul> <li>DIRECTIVE</li> <li>Immunity</li> <li>Emission</li> <li>HOUSING</li> <li>Material</li> <li>Mounting</li> <li>Dim. (mm)</li> </ul>	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic DIN rail W x L x H : 120 x 100 x 17.5		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission Baud rate Max. Distance	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial) 38.4 Kbps 1.2 Km - 4000ft
Supply Voltage Current consumption Rever. Polarity protection ISOLATIONS Input 0÷7 1 Inputs – RS485 2 Inputs – Supply 2 RS-485 – Supply 2	35 mA @ 24 Vdc 60 Vdc max 500 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir 2000 Vac 50 Hz, 1 mir	<ul> <li>DIRECTIVE</li> <li>Immunity</li> <li>Emission</li> <li>HOUSING</li> <li>Material</li> <li>Mounting</li> <li>Dim. (mm)</li> </ul>	E 2004 / 108 / EC EN 61000-6-2 EN 61000-6-4 Self-extinguishing plastic DIN rail W x L x H : 120 x 100 x 17.5		Input channels Input voltage (bip OFF State ON State Impedance Data Transmission Baud rate Max. Distance	olar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ (asynchronous serial) 38.4 Kbps 1.2 Km - 4000ft

### DISTRIBUTED I/O MODULE 12 DIGITAL INPUTS ON RS-485 NETWORK



### **GENERAL DESCRIPTION**

The device DAT 3148/12 is able to acquire up to 12 digital inputs. The data are transmitted with MODBUS RTU/ASCII on RS-485 network. To assure safe operation of the system, the device is equipped with two Watch-Dog timers. The 2000 Vac galvanic isolation between inputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

### FEATURES

- Field Bus data acquisition

- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 12 digital inputs
- Watch-Dog alarm
  - CE NOHS BO

**Application areas** 

- Configurable from a remote terminal
- Four ways galvanic isolation 2000 Vac

Ö

- High accuracy
- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting

		2002/95/EC	kad-freé				
POWER SUPPLY		EMC (for industrial environments)		D	DIGITAL INPUTS		
Supply Voltage 10 30 Vdc		DIRECTIVE 2004 / 108 / EC		h	nput channels	12	
Current consumption	35 mA @ 24 Vdc	Immunity	EN 61000-6-2 Input voltage (bipolar)				
Rever. Polarity protectio	n 60 Vdc max	Emission	EN 61000-6-4	C	OFF State	0 ÷ 3 V	
ISOLATIONS		HOUSING		C	N State	10 ÷ 30 V	
				h	mpedance	4.7 ΚΩ	
Input 0÷7 / 8÷11 1500 Vac 50 Hz, 1 min.		Material	Material Self-extinguishing plastic Data Transmission (		Data Transmission (as	asynchronous serial)	
Inputs – RS485	2000 Vac 50 Hz, 1 min.	Mounting	DIN rail	В	aud rate	38.4 Kbps	
Inputs – Supply	2000 Vac 50 Hz, 1 min.	Dim. (mm)	W x L x H : 120 x 100 x 17.5	N	lax. Distance	1.2 Km - 4000ft	
RS-485 – Supply	2000 Vac 50 Hz, 1 min.	Weight	About 210 g.	s	ample time	5 ms max	
<b>TEMPERATURE &amp; HUMIDITY</b>		-	-	-			
Operating Temperature	-10°C +60°C						
Storage Temperature	-40°C +85°C						
Humidity (not condensed)	0 90 %						

DAT3000 SERIES

55

### DISTRIBUTED I/O MODULE 4 DIGITAL INPUTS + 8 PNP OUTPUTS ON RS-485 NETWORK

- Watch-Dog alarm

- EMC compliance - CE Mark

Ö

- High accuracy

- Over-temperature and over-current protection

- In compliance to EN-50022 DIN rail mounting

Energy

- All the ways galvanic isolation 2000 Vac

### GENERAL DESCRIPTION

The device DAT 3188/4 is able to acquire up to 4 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network (is available the RS-232 interface model).

To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. Also, the outputs are protected against over currents and over temperature The 2000 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

# DAT 3188/4

**POWER SUPPLY** Supply Voltage

Current consumption

2000 Vac 50 Hz, 1 min.

Operating Temperature

Humidity (not condensed)

Storage Temperature

Immunity

Emission

DAT 3188/8

**POWER SUPPLY** 

Current consumption

2000 Vac 50 Hz, 1 min.

Supply Voltage

5	-	. 3		-
	thittelli a	3	山田田	
	(Teres	F	ALC: N	
	围	-	CARRE	

Rever. Polarity protection 60 Vdc max ISOLATIONS (Input / Output / RS485 / Supply)

**TEMPERATURE & HUMIDITY** 

**EMC** (for industrial environments) DIRECTIVE 2004 / 108 / EC EN 61000-6-2

EN 61000-6-4

10 .. 30 Vdc 45 mA @ 24 Vdc

-10°C .. +60°C

-40°C ... +85°C

0..90%

- 8 digital out	puts, P	NP type
CE	ROHS 2002/95/EC	Pb

- Field Bus data acquisition

- MODBUS RTU/ASCII protocol

FEATURES

- 4 digital inputs

b) Application areas

- Master/Slave communication on RS-485 network

HOUSING			
Material	Self-extinguishing plastic		
Mounting	DIN rail		
Dim. (mm)	W x L x H : 120 x 10	00 x 17.5	
Weight	About 210 g.		
DIGITAL IN	IPUTS		
Input channels 4			
Input volta	age (bipolar)		
OFF State 0 ÷ 3 V			
ON State 10 ÷ 30 V			
Impedance 4.7 KΩ			
Data Transmission (asynchronous serial)			
Baud rate		115.2 Kbps	
Max. Distanc	e	1.2 Km - 4000ft	

DIGITAL OUTPUTS				
Output channels	8			
Туре	PNP			
Max. Load	500 mA per channel*			
Wax. Load	1 A per module			
Inductive Load	48 Ω - 2 H max.			
Voltage	10.5 ÷ 30 Vdc			

(\*) = Protection against over-current and over-temperature Short circuit current 1.7 A max.

### DISTRIBUTED I/O MODULE 8 DIGITAL INPUTS + 8 PNP OUTPUTS ON RS-485 NETWORK

### GENERAL DESCRIPTION

Sample time

The device DAT 3188/8 is able to acquire up to 8 digital inputs and to drive up to 8 transistor outputs. The data are transmitted with MODBUS RTU/ASCII protocol on RS-485 network (is available the RS-232 interface model). To assure safe operation of the system, the device is equipped with two Watch-Dog timers: in case of alarm, the outputs are forced automatically on the safe configuration. Also, the outputs are protected against over currents and over temperature The 2000 Vac galvanic isolation between inputs, outputs, power supply and RS-485 serial line cancels any ground-loop effect noise, allowing the use of the device in worst ambient conditions.

### FEATURES

- Field Bus data acquisition
- Master/Slave communication on RS-485 network
- MODBUS RTU/ASCII protocol
- 8 digital inputs - 8 digital outputs, PNP type



**Application** areas

5 ms max

### - All the ways galvanic isolation 2000 Vac

- High accuracy

- Watch-Dog alarm

- EMC compliance CE Mark
- In compliance to EN-50022 DIN rail mounting

- Over-temperature and over-current protection



TEMPERATURE & HUMIDITY			
	Operating Te	-10°C +60°C	
	Storage Tem	perature	-40°C +85°C
	Humidity (not	t condensed)	0 90 %
EMC (for industrial environ			ironments)
DIRECTIVE 2004 / 108 / EC			3 / EC
	Immunity	2	
	Emission	4	

Weight	Veight About 210 g.			
DIGITAL IN	DIGITAL INPUTS			
Input chan	nels	8		
Input voltage (bipolar)				
OFF State		0 ÷ 3 V		
ON State		10 ÷ 30 V		
Impedance	)	4.7 ΚΩ		
Data Transmission (asynchronous serial)				
Baud rate		115.2 Kbps		
Max. Distanc	е	1.2 Km - 4000ft		
Sample time 5 ms max				

DIGITAL OUTPUTS				
Output channels	8			
Туре	PNP			
Max. Load	500 mA per channel*			
IVIAX. LOAU	1 A per module			
Inductive Load	48 Ω - 2 H max.			
Voltage	10.5 ÷ 30 Vdc			

(\*) = Protection against over-current and over-temperature Short circuit current 1.7 A max.

### UNIVERSAL REMOTE I/O MODULE ON RS-485 NETWORK

### DAT 3011

Emission

# 

### **GENERAL DESCRIPTION**

The device DAT 3011 is able to acquire RTD or Tc sensors, mV, V or mA input signals connected to the universal analog input. Moreover a second V/mA analog input is available. The device is able to acquire up to 3 digital inputs and to drive one solid-state relay and two SPST relays. Data values are transmitted with MODBUS RTU protocol on the RS-485 network. By means of a 16 bit converter, the device guarantee a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided. The 1500 Vac isolation on all ways (Power Supply / RS485 / Universal input / V-mA input / Digital inputs / Relay outputs) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### FEATURES

- Field-Bus remote data acquisition
- RS-485 Modbus RTU (Slave) communication

Isolation

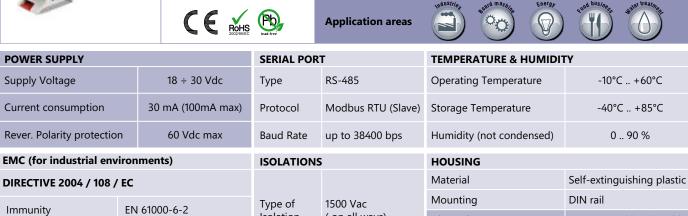
- 1 Universal Analog Input
- 1 V/mA Analog Input
- 2 0-20mA Analog Outputs
- 3 Digital Inputs

- 1 SSR Digital Output + 2 Relay Outputs
- Watch-Dog Alarm
- 1500 Vac galvanic isolation on all ways
- High Accuracy

Dimensions (mm)

Weight

- EMC compliance CE Mark
- DIN rail suitable mounting (EN-50022)



(on all ways)

ANALO	G INPUTS					
Туре	Range		Accuracy	Linearity	Thermal Drift	
100 mV	-100 ÷ +100	mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
10 V	-10 ÷ +10	V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	Ī
20 mA	0 ÷ +20	mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt100	-200 ÷ +850	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pt1K	-200 ÷ +200	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni100	-60 ÷ +180	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Ni1K	-60 ÷ +150	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Res	0 ÷ 2000	Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Pot	20 ÷ 2000	Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc J	-210 ÷ +1200	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	ſ
Tc K	-210 ÷ +1370	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	ł
Tc R	-50 ÷ +1760	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	ł
Tc S	-50 ÷ +1760	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	ŀ
Tc B	+400 ÷ +1825	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc E	-210 ÷ +1000	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc T	-210 ÷ +400	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Tc N	-210 ÷ +1300	°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C	
Lead wi	re res. influen	ce				
RTD (3 wires)		0.05 %/Ω (5	0Ωmax)			
mV, Tc		< 0.8 uV/Ohm				
Excitatio	on current					
RTD, Res	s, Pot		~ 0.7 mA	~ 0.7 mA		
Sample	time		1 sec.			
Warm-u	ıp time		3 min.			

EN 61000-6-4

ANALOG OUTPUT				
Туре	Range	Accuracy	Linearity	Thermal Drift
20 mA	0÷+20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C
Load Resistance		< 500 Ohm		
Auxiliary Voltage		>12V		

DIGITAL INPUTS		
Input channels	3	
Innut veltage (hinelar)	OFF State : 0÷3 V	
Input voltage (bipolar)	ON State : 10÷30 V	
Input Impedance	4.7 KOhm	

DIGITAL OUTPUTS		
N.1 Solid State Relay (dry contacts)		
Max. Voltage	48 V (ac/dc)	
Max. Load	0.4A max (resistive)	
N.2 Relays SPST		
Switching power	2 A @ 250 Vac (per contact)	
(resistive load)	2 A @ 30 Vdc (per contact)	
Minimum load	5 Vdc , 10mA	
Max. Voltage	250 Vac (50 / 60 Hz) ,110Vdc	
Dielectric strength between contacts	1000 Vac, 50 Hz, 1 min.	
Dielectric strength between coil and contacts	4000 Vac, 50 Hz, 1 min.	

W x L x H : 120 x 100 x 22.5

About 150 g.

### **REMOTE I/O MODULE 4 CHANNELS RTD INPUT ON RS-485 NETWORK**



### **GENERAL DESCRIPTION**

The DAT 3014 device is able to acquire up to 4 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect RTD , Potentiometers or Resistance signals.

By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### FEATURES

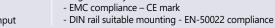
- Field-Bus remote data acquisition - RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- RTD, Resistance and Potentiometer configurable input



HOUSING

Material

**Application areas** 





- Configurable from a remote terminal

- 2000 Vac 3-way Galvanic Isolation

- Watch-Dog Alarm

- High Accuracy

POWER SUPPLY				
Supply Voltage	10 30 Vdc			
Current consumption	30 mA @ 24 Vdc			
Rever. Polarity protection	60 Vdc max			
ISOLATIONS				
Inputs – RS485				
Power Supply– Input	2000 Vac 50 Hz, 1 min.			
Power Supply- RS-485				
<b>TEMPERATURE &amp; HUMIDITY</b>				
Operating Temperature	-10°C +60°C			
Storage Temperature	-40°C +85°C			
Humidity (not condensed)	0 90 %			
EMC (for industrial environments)				
DIRECTIVE 2004 / 108 / EC				
In	2			

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

Mounting	DIN	DIN rail		
Dim. (mm)	W x L x H : 120 x 100 x 17.5			
Weight	Abou	About 150 g.		
INPUT				
Input type	Min Max			
RTD 2 or 3	wires		•	
Pt100		-200°C	850°C	
Pt1000		-200°C	200°C	
Ni100		-60°C	180°C	
Ni1000		-60°C	150°C	
Resistance 2 or 3 wires				
Low		0 Ω	500 Ω	
High		0 Ω	2000 Ω	
POT. (nom. value)				
Low		20 Ω	500 Ω	
High		20 Ω	2000 Ω	

Self-extinguishing plastic

Input Calibration (1)			
RTD	±0.05 % f.s.		
Res.	±0.05 % f.s		
Pot.	±0.05 % f.s		
Linearity (1)			
RTD	± 0.1 % f.s.		
Lead wire res. influence (1)			
RTD/res.3 wires	0.05 %/ $\Omega$ (50 $\Omega$ max balanced)		
RTD excitation current			
Typical	0.350 mA		
Thermal drift (1)			
Full scale	± 0.01 % / °C		
Sample time	0.5 ÷ 1 sec.		
Data Transmission (asynchronous serial)			
Baud rate	38.4 Kbps		
Max. Distance	1.2 Km - 4000ft		
Warm-up time	3 min.		
1) Referred to input Span (difference between max. and min. values)			

### REMOTE I/O MODULE 4 CHANNELS +/-20mA INPUT ON RS-485 NETWORK

- Watch-Dog Alarm

- High Accuracy

- Configurable from a remote terminal

- DIN rail suitable mounting - EN-50022 compliance

- 2000 Vac 3-way Galvanic Isolation

- EMC compliance - CE mark

### **GENERAL DESCRIPTION**

The device DAT 3015I is able to acquire on input up to 4 analog current signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  20mA current signals.

By means of a 16 bit converter, the device guarantees high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

Max

+20 mA ± 20 uA ± 0.1% f.s.

</= 50 Ω

± 0.005 % / °C

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.



- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel input
- Up to ± 20mA input

CE KOHS

HOUSING



lead-free	
с и .· ·	
Self-extingui	ishing plastic

Material	Self-extinguishing plastic	
Mounting	DIN rail	
Dim. (mm)	W x L x H : 120 x 100 x 17.5	
Weight	About 150 g.	

	Sample time			
	0.5 ÷ 1 sec.			
	Data Transmission (asynchronous serial)			
	Baud rate	38.4 Kbps		
	Max. Distance	1.2 Km - 4000ft		

Inputs – RS485 2000 Vac 50 Power Supply-Input 1 min. Power Supply- RS-485

Rever. Polarity protection 60 Vdc max

10 .. 30 Vdc

30 mA @ 24 Vdc

### **TEMPERATURE & HUMIDITY**

Operating Temperature	-10°C +60°C			
Storage Temperature	-40°C +85°C			
Humidity (not condensed)	0 90 %			
EMC (for industrial environments)				
DIRECTIVE 2004 / 108 / EC				

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

	weight	ADOL	it 150 g.		
) Hz,	INPUT				
	Input type		Min	Τ	
	Current				
0°C	20 mA		-20 mA		
5°C	Input Calibration (1)				
6	Linearity (1)				

Input Impedance

Thermal drift (1)

Full scale

1	(1) Referred to input Span (difference between max. and min. values)	
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DAT3000 SERIES

DAT 3015-1

**POWER SUPPLY** 

Current consumption

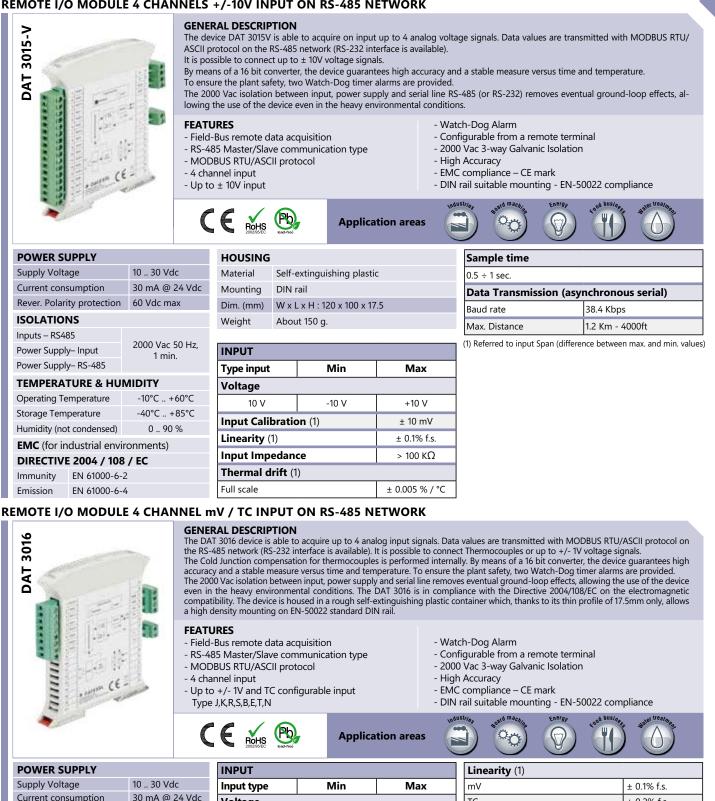
Supply Voltage

ISOLATIONS

DAT3000 SERIES

59

### REMOTE I/O MODULE 4 CHANNELS +/-10V INPUT ON RS-485 NETWORK



POWER SUPPLY		INPUT		
Supply Voltage	10 30 Vdc	Input type	Min	Max
Current consumption	30 mA @ 24 Vdc	Voltage		
Rever. Polarity protection	60 Vdc max	25 mV	-25 mV	+25 mV
ISOLATIONS		100 mV	-100 mV	+100 mV
Inputs – RS485	2000 Vac 50 Hz,	250 mV	-250 mV	+250 mV
Power Supply– Input	1 min.	1000 mV	-1000 mV	+1000 mV
Power Supply– RS-485		Thermocouple		
<b>TEMPERATURE &amp; HUMIDITY</b>			-210 °C	+1200 °C
Operating Temperature	-10°C +60°C	ĸ	-210 °C	+1372 °C
Storage Temperature -40°C +85°C				
Humidity (not condensed) 0 90 %		R	-50 °C	+1767 °C
<b>EMC</b> (for industrial environments)		S	-50 °C	+1767 °C
DIRECTIVE 2004 / 108 / EC		В	+400 °C	+1825 °C
Immunity EN 61000-6-2		E	-210 °C	+1000 °C
Emission EN 61000-6-	n EN 61000-6-4		-210 °C	+400 °C
HOUSING		N	-210 °C	+1300 °C
Material Self-extingu	erial Self-extinguishing plastic		·	
Mounting DIN rail	Inting DIN rail		on (1)	

the higher of  $\pm$  0.05% or 5 uV (1)

Weight

Dim. (mm) W x L x H : 120 x 100 x 17.5

About 150 g.

Linearity (1)				
mV	± 0.1% f.s.			
TC	± 0.2% f.s.			
CJC Comp.	± 0.5 °C			
Input Impedance				
mV, TC	>=1 MΩ			
Thermal drift (1)				
Full scale	± 0.005 % / °C			
CJC Thermal drift				
Full scale	± 0.02 °C / °C			
Lead wire res. influence (1)				
mV, Tc	< 0.8 uV/Ohm			
Response time	0.5 ÷ 1 sec.			
Data Transmission (asynchronous serial)				
Baud rate	38.4 Kbps			
Max. Distance	1.2 Km - 4000ft			
Warm-up time	3 min.			

(1) Referred to input Span (difference between max. and min. values)

### REMOTE I/O MODULE 8 CHANNELS ± 20mA INPUT ON RS-485 NETWORK

- Watch-Dog Alarm

- High Accuracy

- Configurable from a remote terminal

- 2000 Vac 3-way Galvanic Isolation

- EMC compliance - CE mark



### **GENERAL DESCRIPTION**

The device DAT 3017I is able to acquire on input up to 8 analog current signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  20mA current signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### FEATURES

- Field-Bus remote data acquisition
   RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input
- Up to ± 20mA input



HOUSING

Material

Mounting

Dim. (mm)

Weight

INPUT

Type input

Linearity (1)

**Input Calibration (1)** 

Input Impedance

Thermal drift (1)

Current 20 mA



Self-extinguishing plastic

W x L x H : 120 x 100 x 17.5

Min

-20 mA

DIN rail

About 150 g

C			
	Sample time		
	0.5 ÷ 2 sec.		
	Data Transmission (a	synchronous	serial)
	Baud rate	38.4 Kbps	
	Max. Distance	1.2 Km - 40	00ft

- DIN rail suitable mounting - EN-50022 compliance

(1) Referred to input Span (difference between max. and min. values)

### Rever. Polarity protection 60 Vdc max **ISOLATIONS**

**POWER SUPPLY** 

Current consumption

Supply Voltage

Inputs – RS485	2000 Vac 50 Hz, 1 min.				
Power Supply– Input					
Power Supply– RS-485					
TEMPERATURE & HUMIDITY					
Operating Temperature	-10°C +60°C				

10 .. 30 Vdc

30 mA @ 24 Vdc

Storage Temperature-40°C .. +85°CHumidity (not condensed)0 .. 90 %

EMC (for industrial environments)

DIRECTIVE 2004 / 108 / EC

mmunity	EN 61000-6-2
Emission	EN 61000-6-4

### REMOTE I/O MODULE 8 CHANNELS ±10V INPUT ON RS-485 NETWORK

- Watch-Dog Alarm

- High Accuracy

- Configurable from a remote terminal

- 2000 Vac 3-way Galvanic Isolation

- EMC compliance – CE mark

### GENERAL DESCRIPTION

Full scale

The devices DAT 3017V is able to acquire on input up to 8 analog voltage signals. Data values are transmitted with MODBUS RTU/ ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect up to  $\pm$  10V voltage signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

Max

+20 mA

± 20 uA

± 0.1% f.s.

<=50 Ω

± 0.005 % / °C

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### FEATURES

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input
   Up to ± 10V input



HOUSING

Material

Mounting

Dim. (mm)

Weight

Application areas

Sample time 0.5 ÷ 2 sec. Data Transmission (asynchronous serial)

- DIN rail suitable mounting - EN-50022 compliance

Data Transmission (asynchronous serial)			
Baud rate		38.4 Kbps	
Max. Distance		1.2 Km - 4000ft	

(1) Referred to input Span (difference between max. and min. values)

POWER SUPPLY				
Supply Voltage	10 30 Vdc			
Current consumption	30 mA @ 24 Vdc			
Rever. Polarity protection	60 Vdc max			
ISOLATIONS				
Inputs – RS485				
Power Supply– Input	ver Supply– Input 2000 Vac 50 Hz, 1 min			
ower Supply– RS-485				
TEMPERATURE & HUMIDITY				
Operating Temperature	-10°C +60°C			
Storage Temperature -40°C +85°C				

Humidity (not	0 90 %			
EMC (for industrial environments)				
DIRECTIVE 2004 / 108 / EC				
Immunity	EN 61000-6-	2		
Emission	EN 61000-6-	4		

INPUT					
Type input	Min	Мах			
Voltage					
10 V	-10 V	+10 V			
Input Calibratio	± 10 mV				
Linearity (1)	± 0.1% f.s.				
Input Impedan	> 100 KΩ				
Thermal drift (1)					
Full scale	± 0.005 % / °C				

Self-extinguishing plastic

W x L x H : 120 x 100 x 17.5

DIN rail

About 150 g.

Sec.

**DAT 3017-V** 



### REMOTE I/O MODULE 8 CHANNELS mV / TC INPUT ON RS-485 NETWORK

### GENERAL DESCRIPTION

The device DAT 3018 is able to acquire up to 8 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available)

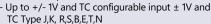
It is possible to connect Thermocouples or up to +/- 1V voltage signals. The Cold Junction compensation for thermocouples is performed internally. By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided. The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### FEATURES

**DAT 3018** 

**DAT 3019** 

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel input



- Configurable from a remote terminal - 2000 Vac 3-way Galvanic Isolation
- - High Accuracy

- Watch-Dog Alarm

- EMC compliance CE mark
- DIN rail suitable mounting EN-50022 compliance 0<sub>C</sub>

POWER SUPPLY	SUPPLY INPUT		INPUT		Linearity (1)		
Supply Voltage	10 30 Vdc	Input type	Min	Max	mV	± 0.1% f.s.	
Current consumption	30 mA @ 24 Vdc	Voltage	•	•	ТС	± 0.2% f.s.	
Rever. Polarity protection	n 60 Vdc max	25 mV	-25 mV	+25 mV	CJC Comp.	± 0.5 °C	
ISOLATIONS		100 mV -100 mV +100 mV Input Impedance					
Inputs – RS485	2000 Vac 50 Hz,	250 mV	-250 mV	+250 mV	mV, TC	>/=1 MΩ	
Power Supply- Input	1 min.	1000 mV	-1000 mV	+1000 mV	Thermal drift (1)	, <u>-</u>	
Power Supply– RS-485		Thermocouple			Full scale ± 0.005 % / 5		
TEMPERATURE & H		]	-210 °C	+1200 °C	Thermal drift CJC		
Operating Temperature	-10°C +60°C -40°C +85°C	К	-210 °C	+1372 °C	Full scale	± 0.02 % / °	
Storage Temperature Humidity (not condensed		R	-50 °C	+1767 °C	Lead wire res. influence (1)		
EMC (for industrial er		S	-50 °C	+1767 °C	mV, TC < 0.8 uV/Oh		
DIRECTIVE 2004 / 1	,	В	+400 °C	+1825 °C	Sample time 0.5 ÷ 2 sec.		
Immunity EN 61000-		E	-210 °C	+1000 °C	Data Transmission (asyr	nchronous serial)	
Emission EN 61000-	6-4	Т	-210 °C	+400 °C	Baud rate	38.4 Kbps	
HOUSING N -210 °C +1300 °C		+1300 °C	Max. Distance	1.2 Km - 400			
Material Self-exting	uishing plastic	Input Calibrati	Input Calibration (1)		Warm-up time	3 min	
Mounting DIN rail		The higher of ± 0.	05% or 5 uV (1)		(1) Referred to input Span (differen	ce between max. and min	
. ,	120 x 100 x 17.5		. ,				
Weight About 150	g.						

**Application areas** 

### **REMOTE I/O MODULE 8 CHANNELS RTD INPUT ON RS-485 NETWORK**

### **GENERAL DESCRIPTION**

The device DAT 3019 is able to acquire up to 8 analog input signals. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to connect 2-wires RTD sensors or up to 2 K $\Omega$  resistance signals.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature.

200°C

180°C 150°C

500 Ω

2000 O

To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

- Watch-Dog Alarm

**High Accuracy** 

- Configurable from a remote terminal

DIN rail suitable mounting - EN-50022 compliance

2000 Vac 3-way Galvanic Isolation

EMC compliance - CE mark

### FEATURES

10 .. 30 Vdc

30 mA @ 24 Vdc

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 8 channel 2 wires input

Mate

Pt1000

Ni100

Ni1000

Low

High

Resistance 2 or 3 wires

- Pt100, Pt1K, Ni100, Ni1K and resistance up to 2 K $\!\Omega$ configurable input



### HOL

USING	
erial	Self-extinguishing plastic
Inting	DIN rail
. (mm)	W x L x H : 120 x 100 x 17.5

Rever. Polarity protection	60 Vdc max			
ISOLATIONS				
Inputs – RS485	2000 Vac 50 Hz, 1 min.			
Power Supply– Input				
Power Supply- RS-485				
<b>TEMPERATURE &amp; HUMIDITY</b>				
Operating Temperature	-10°C +60°C			
Power Supply– Input Power Supply– RS-485 <b>TEMPERATURE &amp; HU</b>	1 min.			

**POWER SUPPLY** 

Current consumption

Supply Voltage

### EMC (for industrial environments) DIRECTIVE 2004 / 108 / EC Immunity EN 61000-6-2

EN 61000-6-4

Emission

Wateriai	Juli	exanguishing pluste	-	
Mounting	DIN r	ail		
Dim. (mm)	WxL	x H : 120 x 100 x 17	.5	
Weight	Abou	About 150 g.		
INPUT				
Input type		Min	Max	
RTD 2 wires				
Pt100		-200°C	850°C	

-200°C

-60°C

-60°C

0Ω

00

Input Calibration (1)	
RTD	±0.2 % f.s.
Res.	±0.2 % f.s
Linearity (1)	
RTD	± 0.2 % f.s.
Excitation current RTD	
Typical	0.450 mA
Thermal drift (1)	
Full scale	± 150 ppm/ °C
Sample time	0.5 ÷ 2 sec.
Data Transmission (asyno	hronous serial)
Baud rate	38.4 Kbps
Max. Distance	1.2 Km - 4000ft
Warm-up time	3 min.

(1) Referred to input Span (difference between max. and min. values)

Application areas

### REMOTE I/O MODULE 2 CHANNEL V / mA OUTPUT ON RS-485 NETWORK

- Watch-Dog Alarm

- High Accuracy

- Configurable from a remote terminal

- DIN rail suitable mounting - EN-50022 compliance

- 2000 Vac 3-way Galvanic Isolation

- EMC compliance - CE mark



**POWER SUPPLY** 

Current consumption

Power Supply-Output

Power Supply- RS-485

**Operating Temperature** 

Humidity (not condensed)

Immunity EN 61000-6-2

Storage Temperature

Emission

Rever. Polarity protection 60 Vdc max

**TEMPERATURE & HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-4

DIRECTIVE 2004 / 108 / EC

Supply Voltage

**ISOLATIONS** 

Output - RS485

### **GENERAL DESCRIPTION**

The DAT 3022 device generates up to 2 output analog signals from digital commands. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available). It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

The 2000 Vac isolation between input, power supply and serial line RS-485 (or RS-232) removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### **FEATURES**

18 .. 30 Vdc

typ. 35 mA @ 24 Vdc 60 mA max

2000 Vac 50 Hz.

1 min.

-10°C .. +60°C

-40°C .. +85°C

0..90%

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type

DIN rail

About 150 g.

- MODBUS RTU/ASCII protocol - 2 channel output
- Voltage or Current configurable outputs



HOUSING

Material

Weight

Mounting

Dim. (mm)

OUTPUT

Voltage

Current

Voltage

Current

Voltage

Current

Output type

mΑ

Load Resistance

Output calibration



Self-extinguishing plastic

W x L x H : 120 x 100 x 17.5

Min

0 V

0 mA

> 5 KΩ

< 500 Ω

stries sost maching	Everal A	cool busings unor treatings		
Thermal dri	ift			
Full scale		100 ppm /°C		
Auxiliary Vo	oltage	> 12V @ 20mA (2 channels)		
Rise time				
Analog outpu (independent		on for each channel)		
Voltage V/s		Current mA/s		
0.125		0.250		
0.250		0.500		
0.500		1.000		
1.000		2.000		
2.000		4.000		
4.000		8.000		
Immediate		Immediate		
Data Transmission (asynchronous serial)				
Baud rate		115.2 Kbps		
Max. Distance	9	1.2 Km - 4000ft		

### REMOTE I/O MODULE 4 CHANNELS V / mA OUTPUT ON RS-485 NETWORK

- Watch-Dog Alarm

- High Accuracy

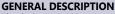
- Configurable from a remote terminal

- DIN rail suitable mounting - EN-50022 compliance

- 2000 Vac 3-way Galvanic Isolation

- EMC compliance – CE mark

Ö.



The device DAT 3024 generates up to 4 output analog signals from digital commands. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.

By means of a 16 bit converter, the device guarantees a high accuracy and a stable measure versus time and temperature. To ensure the plant safety, two Watch-Dog timer alarms are provided.

mΑ

±10 mV ±20 mA

Max

+10 V

+20 mA

±10 mV

±20 mA

The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

### **FEATURES**

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 4 channel output





HOUSING				
Material	Self-extinguishing plastic			
Mounting	DIN 1	rail		
Dim. (mm)	Wxl	W x L x H : 120 x 100 x 17.5		
Weight	Abou	About 150 g.		
OUTDUT				
OUTPUT				
Output typ	е		Min	Max
Voltage				
V			0 V	+10 V
Current				
mA			0 mA	+20 mA
Output calibration				

> 5 KΩ < 500 Ω

Thermal drift			
Full scale	100 ppm /°C		
Auxiliary Voltage	> 12V @ 20mA (4 channels)		
Rise time			
Analog output Slew-rate (independent programmatic	on for each channel)		
Voltage V/s	Current mA/s		
0.125	0.250		
0.250	0.500		
0.500	1.000		
1.000	2.000		
2.000	4.000		
4.000	8.000		
Immediate	Immediate		
Data Transmission (asy	nchronous serial)		
Baud rate	115.2 Kbps		
Max. Distance	1.2 Km - 4000ft		

62



POWER SUPPLY

POWER 30	JEFLI		
Supply Voltage		18 30 Vdc	
Current consumption		typ. 35 mA @ 24 Vdc 100 mA ma	
Rever. Polari	ty protection	60 Vdc max	
ISOLATION	٧S		
Output – RS485			
Power Supply– Output		2000 Vac 50 Hz 1 min	
Power Supply– RS-485			
<b>TEMPERATURE &amp; HUMIDITY</b>			
Operating Temperature		-10°C +60°C	
Storage Temperature		-40°C +85°C	
Humidity (not condensed)		0 90 %	
EMC (for industrial environments)			
DIRECTIVE 2004 / 108 / EC			
Immunity EN 61000-6-2		2	

Voltage Current

Load Resistance

- Voltage or Current configurable outputs



Voltage

Current

### **ØDATEXEL**

### **REMOTE I/O MODULE 8 CHANNELS VOLTAGE OUTPUT ON RS-485 NETWORK**

SECTION THE SECTION OF THE SECTION O		The dev RTU/AS It is pos By mea To ensu The 200	SCII protocol on ssible to genera ins of a 16 bit co ure the plant saf 00 Vac isolation	generates up to the RS-485 net te voltage signa poverter, the dev fety, two Watch-	work (RS-23 ls up to 10V vice guarant Dog timer a , power sup	2 interface is av ees a high accu alarms are provi oply and serial l	vailable racy ar ided. ine RS-	nd a stable measure versus time and temperature. -485 (o RS-232) removes eventual ground-loop effects, al-	
		us remote data acquisition - Con 55 Master/Slave communication type - 2000 BUS RTU/ASCII protocol - High nnel 0-10 V output - EMC				nfigurable from a remote terminal 00 Vac 3-way Galvanic Isolation gh Accuracy IC compliance – CE mark N rail suitable mounting - EN-50022 compliance			
2	The state of the s		C		Red-free	Applica	tion areas	Indu	ustries south machine Charge cod busines and treatment
POWER SUPPLY		HOUSING	HOUSING		Rise time				
Supply Voltage 18 30 Vdc		Material Self-extinguishing plastic			c	Analog output Slew-rate			
Current con	sumption	typ. 35 m/ Vdc 100 m	typ. 35 mA @ 24 Vdc 100 mA max		DIN rail			(independent programmation for each channel)	
Rever. Polar	Rever. Polarity protection 60 Vdc max		Dim. (mm)	,			N= k=		
ISOLATIONS		Weight	Weight About 150 g.			Voltage V/s			
Output – RS485									
Power Supply– Output 2000 Vac 50		/					0.250		
Power Suppl	Power Supply– RS-485			OUTPUT			-	0.500	
<b>TEMPERATURE &amp; HUMIDITY</b>		Output type Min		Мах		1.000			
Operating Te	emperature	-10°C +	60°C				2.000		
Storage Tem	nperature	-40°C +	-85°C	Voltage           V         0 V         +10 V			4.000		
Humidity (not condensed) 0 90 %				±10 mV		Immediate			
EMC (for industrial environments)		Output calibration							
DIRECTIVE 2004 / 108 / EC		Load Resistance > 5 KΩ			> 5 KΩ		Data Transmission (asynchronous serial)		
Immunity EN 61000-6-2		Thermal drift				Baud rate 115.2 Kbps			
Emission EN 61000-6-4			Full scale 100 ppm /°C		/°C		Max. Distance 1.2 Km - 4000ft		

63

DAT3000 SERIES



ELECTRONIC AND CONTROL PROCESS DEVICES

ELECTRONIC AND CONTROL PROCESS DEVICES









### "DAT9000 SERIES" Intelligent units

The DAT9000 Series intelligent units were designed by DATEXEL to offer its customers products that, thanks to their capabilities, allow them to manage various architectures in the area of small to medium size automation systems and process control through the connection of a network of MODBUS RTU Master/Slave devices connected by way of RS-485.

The DAT9000 units read and write the parameters of the field devices to which they are connected, processing functions of the logical/mathematical type, including complex ones, such as for example: alarms, linearization, means, square roots, etc..

### INDEX

### 66 • DAT 9000

Intelligent unit with Ethernet interface **DAT 9000-DL** Intelligent unit with Data-logger and Ethernet interface

### 67 • DAT 9000IO Intelligent unit with Ethernet Interface and digital I/O

68 • DAT 9000-DL-IO Intelligent unit with Data-logger, Ethernet interface and digital I/O

### 69 • DAT 9011

Intelligent unit with Ethernet Interface and digital and analogue I/O

### 70 • DAT 9011-DL

Intelligent unit with Data-Logger function, Ethernet Interface and digital and analogue I/O

# DAT9000 SERIES

08

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### **DAIEXEL**

DAT9000 Intelligent SERIES units

### **(D)** DATEXEL

### INTELLIGENT UNIT WITH ETHERNET INTERFACE



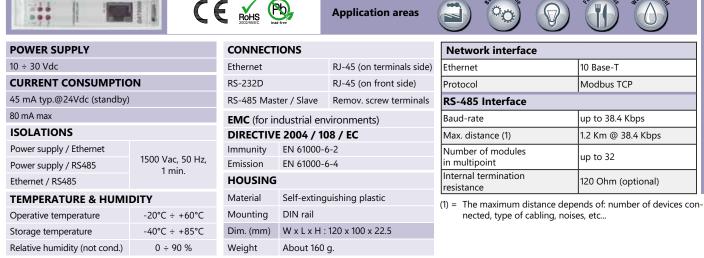
### GENERAL DESCRIPTION

The device DAT9000 is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value.

- Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to:
- Programming of the Control Logic
- Monitor, request of data, programming in real time the Intelligent Unit
   Direct programming and request of data from the Slave devices connected on the RS-485 Master.

### FFATURES

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- Functional Block programming software
- Remotely programmable
- Connection by removable screw-terminals
  - LED signalling for Link/Act Ethernet, serial RX-TX, power supply
  - Galvanic Isolation on all the ways
  - EMC compliance CE mark
  - Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
  - Suitable for DIN rail mounting in compliance with EN-50022 standard



### INTELLIGENT UNIT WITH DATA-LOGGER AND ETHERNET INTERFACE

### GENERAL DESCRIPTION

The device DAT9000 DL is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working, managing up to 8 task of recording memorized on files saved on the microSD card. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. By Ethernet it is possible to get access to the files saved on the microSD card when the Data-Logger function is active. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to: Programming of the Control Logic; Monitor, request of data, programming in real time the Intelligent Unit; Direct programming and request of data from the Slave devices connected on the RS-485 Master.

### FEATURES

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave - N.1 slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- Functional Block programming software
- Remotely programmable

Ethernet

RS-232D

Eľ

D Im

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н

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Di

W

1500 Vac, 50 Hz,

nin

RS-485 Master / Slave

CE K

- Connection by removable screw-terminals - LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- Galvanic Isolation on all the ways
- FMC compliance CF mark

Format

- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard





RJ-45 (on terminals side)

Remov. screw terminals

RJ-45 (on front side)

Ethernet	10 Base-T	
Protocol	Modbus TCP	
RS-485 Interface		
Baud-rate	up to 38.4 Kbps	
Max. distance (1)	1.2 Km @ 38.4 Kbps	
Number of modules in multipoint	up to 32	
Internal termination resistance	120 Ohm (optional)	
Compatible SD card		
Туре	microSD	
Memory size	Up to 8 GB	

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

FAT16 or FAT32





**POWER SUPPLY** 

10 ÷ 30 Vdc

**CURRENT CONSUMPTION** 

45 mA typ.@24Vdc (standby)

### 100 mA max ISOLATIONS

Fthe

Power supply / Ethernet	
Power supply / RS485	

ernet / RS485	00	1 n

### **TEMPERATURE & HUMIDITY**

Operative temperature	-20°C ÷ +60°C
Storage temperature	-40°C ÷ +85°C
Relative humidity (not cond.)	0 ÷ 90 %

MC (for industrial environments)			
IRECTIVE 2004 / 108 / EC			
nmunity	EN 61000-6-2		
nission	EN 61000-6-4		
OUSING			
aterial	Self-extinguishing plastic		
ounting	DIN rail		
im. (mm)	W x L x H : 120 x 100 x 22.5		
'eight	About 160 g.		

ww				

### INTELLIGENT UNIT WITH ETHERNET INTERFACE AND DIGITAL I/O

### **DAT 9000IO**

**POWER SUPPLY** 

**CURRENT CONSUMPTION** 

45 mA typ.@24Vdc (standby)

DIRECTIVE 2004 / 108 / EC

**EMC (for industrial environments)** 

EN 61000-6-2

EN 61000-6-4

18 ÷ 30 Vdc

100 mA max

Immunity

Emission

DIGITAL INPUTS



### GENERAL DESCRIPTION

The device DAT9000IO is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. Moreover, the device is equipped with 4 digital inputs channels and 2 relay outputs. On digital inputs are available

32-bit counters and the measure of the frequency up to 300Hz. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to:

- Programming of the Control Logic

- Monitor, request of data, programming in real time the Intelligent Unit.
- Direct programming and request of data from the Slave devices connected on the RS-485 Master.

**Application areas** 

RJ-45 (on terminals side)

1500 Vac, 50 Hz,

1 min.

2000 Vac, 50 H

1 min.

DIGITAL OU

RJ-45 (on front side)

RS-485 Master / Slave Remov. screw terminals

### FEATURES

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- N.4 Digital Inputs
- N.2 SPDT Relay Outputs

CE

- Functional Block programming software - Remotely programmable

CONNECTIONS

Ethernet

RS-232D

ISOLATIONS

Power supply / Ethernet

Power supply / RS-485

Ethernet / RS-485

Inputs / Power supply

Inputs / RS-485

- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with

**TEMPERATURE & HUMIDITY** 

Relative humidity (not cond.)

Operative temperature

Storage temperature

HOUSING

Material

Mounting

EN-50022 standard



-40°C .. +85°C

0..90%

Self-extinguishing plastic

DIN rail

67

Hz,	Dimensions (mm)		W x L x H : 120 x 100 x 22.5		
	Weight		About 190 g.		
TPUT	S				
		2			
		SPDT Relays			

Channels	4	Channels	2			
Input voltage (bipolar)		Туре	SPDT Relays			
OFF state 0 ÷ 3 V		Switching Power (max.)				
ON state	10 ÷ 30 V	2 A @ 250 Vac (resistive	load) per contact			
Impedance	4.7 ΚΩ	2 A @ 30 Vdc (resistive load) per contact				
Frequency	up to 300 Hz	Minimum load	5Vdc , 10mA			
Network interface	Network interface		Max. voltage			
Ethernet	10Base-T	250Vac (50 / 60 Hz) , 30Vdc				
Protocol	Modbus TCP	Dielectric strength between contacts				
RS-485 Interface		1000 Vac, 50 Hz, 1 min.				
Baud-rate	up to 38.4 Kbps	Dielectric strength between coil and contacts				
Max. distance (1)	1.2 Km @ 38.4 Kbps	4000 Vac, 50 Hz, 1 min.				
Number of modules in multipoint	up to 32	(1) = The maximum distance depends of: number of devices connected, type cabling, noises, etc				
Internal termination resistance	120 Ohm (optional)					

### **DAT 9000-DL-IO**



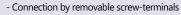
### INTELLIGENT UNIT WITH DATA-LOGGER, ETHERNET INTERFACE AND DIGITAL I/O

### **GENERAL DESCRIPTION**

The device DAT9000-DL-IO is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working, managing up to 8 task of recording memorized on files saved on the microSD card. The device is equipped with 4 digital inputs channels and 2 relay outputs. For the digital inputs, are also available 32 bit counters and the measure of the frequency up to 300 Hz. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. By Ethernet it is possible to get access to the files saved on the microSD card when the Data-Logger function is active. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to: Programming of the Control Logic; Monitor, request of data, programming in real time the Intelligent Unit; Direct programming and request of data from the Slave devices connected on the RS-485 Master.

### FEATURES

- N.1 serial interface RS-485 Modbus RTU Master
- N.1 serial interface RS-485/232 Modbus RTU Slave
- N.1 slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- N.4 Digital Inputs + N.2 SPDT Relays
- Functional Block programming software
- Remotely programmable



- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital input and output state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard



POWER SUP
18 ÷ 30 Vdc
CURRENT CO
45 mA typ.@
100 mA max

POWER SUPPLY		CONNECTIONS		TEMPERATURE & HUMIDITY		
8 ÷ 30 Vdc		Ethernet	RJ-45 (on terminals side)	Operative temperature	3	-20°C +60°C
URRENT CONSUM	PTION	RS-232D	RJ-45 (on front side)	Storage temperature		-40°C +85°C
5 mA typ.@24Vdc (	standby)	RS-485 Master / Slave	Remov. screw terminals	Storage temperature		- <del>4</del> 0 C +05 C
00 mA max		ISOLATIONS		Relative humidity (not o	Relative humidity (not cond.) 0 90 %	
MC (for industrial environments)		Power supply / Ethernet		HOUSING		
IRECTIVE 2004 / 10	08 / EC	Power supply / RS485	1500 Vac, 50 Hz, 1 min.	Material	Self-ex	tinguishing plastic
		Ethernet / RS485		Mounting	DIN rail	
mmunity EN 61000-6-2		Inputs / RS485	2000 Vac, 50 Hz,	Dimensions (mm)	WxLx	( H : 120 x 100 x 22.5
Emission EN 61000-6-4		Inputs / Power supply	1 min.	Weight	About	160 g.

DAT9000 SERIES

ΕN DI In

EN 61000-6-4	Inputs / Power supply					
4						
ar)						
0 ÷ 3 V						
10 ÷ 30 V	1					
4.7 ΚΩ						
10Base-T	10Base-T					
Modbus	Modbus TCP					
up to 38.	up to 38.4 Kbps					
1.2 Km @	38.4 Kbps					
up to 32						
tion 120 Ohm (optional)						
Compatible SD card						
Type microSD						
Up to 8 G	iB					
FAT16 or	FAT32					
	4 ar) 0 ÷ 3 V 10 ÷ 30 V 4.7 KΩ 10Base-T Modbus Up to 38. 1.2 Km @ up to 32 120 Ohm microSD Up to 8 G					

DIGITAL OUTPUTS						
Channels	2					
Туре	SPDT Relays					
Switching Power (max.)						
2 A @ 250 Vac (resistive	load) per contact					
2 A @ 30 Vdc (resistive load) per contact						
Minimum load	5Vdc, 10mA					
Max. voltage						
250Vac (50 / 60 Hz), 30Vdc						
Dielectric strength between contacts						
1000 Vac, 50 Hz, 1 min.						
Dielectric strength between coil and contacts						
4000 Vac, 50 Hz, 1 min.						

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

### INTELLIGENT UNIT WITH ETHERNET INTERFACE AND DIGITAL AND ANALOGUE I/O

### DAT 9011

### GENERAL DESCRIPTION

The device DAT9011 is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working. The device is equipped with one universal analogue input channel, one channel for Volt and mA input, two digital inputs and 2 relay outputs. On input an Auxiliary source is available to supply passive sensors on the field. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to program the

registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to program the Control Logic, to monitor, to request data and programming in real time the Intelligent Unit, to program directly the Slave devices connected on the RS-485 Master and to request data from them.

### FEATURES

- N°1 serial interface RS-485 Modbus RTU Master
- N°1 serial interface RS-485/232 Modbus RTU Slave
- Interface Ethernet 10Base-T, Modbus TCP
- N°1 universal analogue input + N°1 current and voltage analogue input
- N°2 digital Inputs

- Auxiliary supply to power sensors on field
- N°2 passive 4-20 mA analogue outputs
- N°2 SPDT Relay Outputs
- Functional Block programming software

- Remotely programmable
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 complianceSuitable for DIN rail mounting in compliance with
- EN-50022 standard

DAT9000 SERIES

POWER SUPPLY		CONNECTIONS		TEMPERATURE & HUMIDITY				
Power supply Voltage		9 ÷ 30 Vdc	Ethernet	RJ-45 (	on terminals side)	Operative temperature		-20°C +60°C
Current consumption @ 24	4 Vdc	60 mA (170 mA max)	RS-232D	RJ-45 (on front side)		Storago tomporaturo		-40°C +85°C
Current consumption @ 10	) Vdc	147 mA (300 mA max)	RS-485 Master / Slave	Screw terminals pitch		Storage temperature		-40 C +03 C
Reverse polarity protecti	ion	60 Vdc max	Outputs Relay	5.08mm		Relative humidity (not	cond.)	090%
EMC (for industrial env	vironm	nents)	Supply/Inputs/	Screw terminals pitch 3.81mm		HOUSING		
DIRECTIVE 2004 / 108 /	EC		Analogue			Material	Self-ex	tinguishing plastic
				Mounting	DIN rail			
Immunity	EINC	01000-0-2	Isolations voltage 1500 V		1500 \/aa	Dimensions (mm)	WxLx	x H : 120 x 100 x 22.5
Emission	EN 6	1000-6-4			(on all the ways)	Weight	About 190 g.	

**Application areas** 

ANALOGUE INPUTS								
Туре	Range	Calibration	Linearity	Thermal Drift				
100 mV	-100 ÷ +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
10 V	-10 ÷ +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
20 mA	-20 ÷ +20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Pt100	-200 ÷ +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Pt1K	-200 ÷ +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Ni100	-60 ÷ +180 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Ni1K	-60 ÷ +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Res	0 ÷ 2000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Pot	20 ÷ 50000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc J	-210 ÷ +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc K	-210 ÷ +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc R	-50 ÷ +1760 ℃	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C				
Tc S	-50 ÷ +1760 ℃	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C				
Tc B	+400 ÷ +1825 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc E	-210 ÷ +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc T	-210 ÷ +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
Tc N	-210 ÷ +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C				
		Tc, mV >= 10 MΩ						
Input in	npedance	Volt >= 1 MΩ						
		Current ~ 22 Ω						
Auxiliar	y voltage	>14 V @ 20	>14 V @ 20 mA					
Line res	istance influence							
RTD 3 w	ires	0.05 %/Ω (50 Ω max)						
mV, Tc		< 0.8 uV/O	hm					

Sensor excitation current						
RTD, Re	es, Pot		~ 400 uA			
CJC comp.			± 1	°C		
Sample	time		1 se	ec.		
Warm-u	up time (TC,RTD)		3 n	nin.		
DIGITA	L INPUTS					
Channe	els		2			
Inputy	oltage (bipolar)		OF	F state : 0÷3 V		
put v	onage (bipolar)		ON	V state : 10÷30	V	
Input i	mpedance			' KOhm		
N°2 Dig	gital counter		32	bit (up to 300	Hz)	
ANALO	GUE OUTPUTS (	2 CHANN	IELS	5)		
Туре	Range	Calibrati	on	Linearity	Thermal Drift	
20 mA	4÷+20 mA	±0.05 %	f.s.	±0.05 % f.s.	100 ppm/°C	
DIGITA						
N.2 SPI	DT Relays					
Switchi	ing Power (resistiv	(a load)	2 A @ 250 Vac (per contact)			
Switchi	ing rower (resistiv	/e loau)	2 A	A @ 30 Vdc (pe	r contact)	
Minimu	m load		5Vdc , 10mA			
Max. vo	ltage		250Vac (50 / 60 Hz) ,110Vdc			
Dielectri	c strength betweer	n contacts	1000 Vac, 50 Hz, 1 min.			
Dielectri coil and	ic strength betwee contacts	en	4000 Vac, 50 Hz, 1 min.			
Serial P	Ports RS-485 (Ma	ster & Sla	ave)			
Protocol			Мс	odbus RTU		
Baud Ra	te		up to 115.2 Kbps			
Max. rec	commended distance	ce (1)	1.2 Km @ 38.4 Kbps			
Number	of modules in mult	tipoint	up	to 32		
Internal	termination resistar	nce	120	) Ohm (optional	)	

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

### INTELLIGENT UNIT WITH DATA-LOGGER FUNCTION, ETHERNET INTERFACE AND DIGITAL AND ANALOGUE I/O

### **DAT 9011-DL**

### GENERAL DESCRIPTION

The device DAT9011-DL is an Intelligent unit able to control a network of slave Modbus RTU devices connected on serial line RS-485 Master executing the reading and writing of the field values and performing the logical and mathematical functions necessary for the system working and managing up to 8 tasks of storage data. The data are saved on microSD card; it is possible to get access to the saved files by means of the Ethernet connection. The device is equipped with one universal analogue input channel, one channel for Volt and mA input, two digital inputs and 2 relay outputs. On input an Auxiliary source is available to supply passive sensors on the field. By means of the Ethernet interface or the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers value. Moreover, by means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to program the Control Logic,to monitor, to request data and programming in real time the Intelligent Unit,to program directly the Slave devices connected on the RS-485 Master and to request data from them.

### FEATURES

- N°1 serial interface RS-485 Modbus RTU Master
- N°1 serial interface RS-485/232 Modbus RTU Slave
- N°1 Slot for microSD card
- Interface Ethernet 10Base-T, Modbus TCP
- N°1 universal analogue input + N°1 current and voltage analogue input
- N°2 digital Inputs
- Auxiliary supply to power sensors on field - N°2 passive 4-20 mA analogue outputs

- N°2 SPDT Relay Outputs

- Functional Block programming software
- Remotely programmable
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, serial RX-TX, power supply
- LED signalling for digital inputs and digital outputs state
- Galvanic Isolation on all the ways
- EMC compliance CE mark
- Ethernet IEEE 802.3 EIA RS485 and RS232 compliance
- Suitable for DIN rail mounting in compliance with EN-50022 standard



70

POWER SUPPLY		CONNECTIONS	CONNECTIONS		TEMPERATURE & HUMIDITY		
Power supply Voltage	9 ÷ 30 Vdc	Ethernet	RJ-45 (	(on terminals side)	Operative temperatu	re	-20°C +60°C
Current consumption @ 24	Vdc 60 mA (170 mA max)	RS-232D	RJ-45	(on front side)	Storago tomporaturo		-40°C +60°C
Current consumption @ 10	Vdc 147 mA (300 mA max)	RS-485	Screw terminals pitch 5.08mm		Storage temperature		-40 C +60 C
Reverse polarity protection	on 60 Vdc max	Master / Slave Outputs Relay			Relative humidity (not con		0 90 %
		1 2					
EMC (for industrial envi	ronments)	Supply/Inputs/	Screw	terminals pitch	HOUSING		
DIRECTIVE 2004 / 108 /	EC	Analogue outputs	3.81mm		Material	Self-ex	tinguishing plastic
				Mounting DIN rail		il	
Immunity EN 61000-6-2		ISOLATIONS	ISOLATIONS				
		Isolations voltag	e	1500 Vac	Dimensions (mm)	WxLx	(H: 120 x 100 x 22.5
		(50 Hz, 1 min.)	5		Weight	About 190 g.	

**DIGITAL INPUTS** 

**Application areas** 

ANALO	ANALOGUE INPUTS								
Туре	Range	Calibration	Linearity	Thermal Drift					
100 mV	-100 ÷ +100 mV	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
10 V	-10 ÷ +10 V	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
20 mA	-20 ÷ +20 mA	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Pt100	-200 ÷ +850 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Pt1K	-200 ÷ +200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Ni100	-60 ÷ +180 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Ni1K	-60 ÷ +150 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Res	0 ÷ 2000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Pot	20 ÷ 50000 Ohm	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc J	-210 ÷ +1200 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc K	-210 ÷ +1370 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc R	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C					
Tc S	-50 ÷ +1760 °C	±0.1 % f.s.	±0.2 % f.s.	100 ppm/°C					
Tc B	+400÷ +1825°C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc E	-210 ÷ +1000 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc T	-210 ÷ +400 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
Tc N	-210 ÷ +1300 °C	±0.05 % f.s.	±0.1 % f.s.	100 ppm/°C					
		Tc, mV > = 7	Tc, mV >= 10 MΩ						
Input in	npedance	Volt >= 1 MΩ							
		Current ~ 22 Ω							
Auxiliar	y voltage	>14 V @ 20	>14 V @ 20 mA						
Line res	istance influence								
RTD 3 w	ires	0.05 %/Ω (	0.05 %/Ω (50 Ω max)						
mV, Tc		< 0.8 uV/O	< 0.8 uV/Ohm						
Sensor e	excitation current								
RTD, Res	s, Pot	~ 4(	~ 400 uA						

±1°C

1 sec.

3 min.

_				
	r state. U+5 v	OFF state : 0÷3 V		
10	V state : 10÷30	V		
4.7	' KOhm			
32	bit (up to 300	Hz)		
NEL	5)			
tion	Linearity	Thermal Drift		
f.s.	±0.05 % f.s.	100 ppm/°C		
2/	A @ 250 Vac (p	er contact)		
2/	2 A @ 30 Vdc (per contact)			
5V	5Vdc , 10mA			
25	250Vac (50 / 60 Hz) ,110Vdc			
10	00 Vac, 50 Hz, 1	min.		
40	4000 Vac, 50 Hz, 1 min.			
Serial Ports RS-485 (Master & Slave)				
M	odbus RTU			
up	up to 115.2 bps			
1.2	1.2 Km @ 38.4 Kbps			
up	up to 32			
120	120 Ohm (optional)			
mi	microSD			
Up	Up to 8 GB			
FA	FAT16 or FAT32			
	4.7           32           Image: state	4.7 KOhm         32 bit (up to 300         INELS)         tion       Linearity         á f.s.       ±0.05 % f.s.         2 A @ 250 Vac (p         2 A @ 30 Vdc (pe         5Vdc , 10mA         250Vac (50 / 60 H         5 1000 Vac, 50 Hz, 1         4000 Vac, 50 Hz, 1         4000 Vac, 50 Hz, 1         100 vac, 50 Hz, 1         4000 Vac, 50 Hz, 1         120 Ohm (optional         120 Ohm (optional         IncroSD         Up to 8 GB		

(1) = The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

Warm-up time (TC,RTD)

CJC comp. Sample time



0000

### **ODATEXEL**

"DAT9000 SERIES" intelligent units



### **ODAIEXEL**









### "DAT6000 SERIES": A/D interface modules for PLC

The DAT6000 series devices are an evolution in the connection techniques of the analog signals to the PLC.

Each device amplify, linearise, filter and isolate the analog signal coming from the sensors on field and convert it in an high resolution 16 bits length "word" digital signal that is transferred to the PLC by the data line of the controller.

The data transfer is controlled by the PLC trough a clock signal generated on its digital port; at each pulse of clock is transferred a bit of the data.

By few and simple instructions the PLC is able to acquire more analog signals on a single digital input. Moreover each module has an Enable signal, that allows the controller to multiplexing more devices to one data line and one clock signal.

### INDEX

### 74 · DAT 6011

A/D interface for PLC 2 input channels for mV or Tc **DAT 6012** A/D interface for PLC 2 input channels for RTD, Res

### 75 • **DAT 6013**

A/D interface for PLC 2 input channels for V, mA **DAT 6021** A/D interface for PLC 4 input channels for mV, Tc

### 76 • DAT 6023-I

A/D interface for PLC 4 input channels for +/- 20 mA DAT 6023-V A/D interface for PLC 4 input channels for +/- 10V

# DAT6000 SERIES

### O9



**DAT6000** A/D interface modules **SERIES** for PLC

### A/D INTERFACE FOR PLC 2 INPUT CHANNELS FOR mV OR Tc

- Configurable by DIP-switch

- EMC compliant – CE mark

with EN-50022 and EN-50035

- Galvanic isolation at 2000 Vac on three ways

- Suitable for DIN rail mounting in compliance



Power supply voltage

Current consumption

Power supply- INPUT

Operative temperature

Humidity (not cond)

Power supply- PLC

INPUT - PLC

Storage

Emission

Material

Weight

**DAT 6012** 

HOUSING

temperature

**ISOLATION VOLTAGE** 

Rever. polarity protection 60 Vdc max

**TEMPERATURE AND HUMIDITY** 

**EMC** (for industrial environments)

EN 61000-6-4

Dim. (mm) W x L x H : 90 x 112 x 12.5

about 90 g.

Self-extinguishing plastic

**DIRECTIVE 2004/108/EC** 

Immunity EN 61000-6-2

### **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

### FEATURES

- Acquisition of analogue signals on PLC's digital I/O
   Analogue input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 2 input channels

INPUT

18 .. 30 Vdc

2000 Vac

50 Hz, 1 min.

-10°C +60°C

-40°C .. +85°C

0...90 %

30 mA @ 24 Vdc

Input type

Voltage

50 mV

100 mV

500 mV

1000 mV

к

R

S

R

E

т

N

mV

Tc

Thermocouple

**INPUT CHANNELS** 

Input calibration (1)

- Configurable input for voltage up to ± 1V or Tc type J,K, R,S,B,E,T,N

Min

-50 mV

-100 mV

-500 mV

-1000 mV

-210 °C

-210 °C

-50 °C

-50 °C

+400 °C

-210 °C

-210 °C

-210 °C

± 0.1 % f.s.

± 0.2 % f.s.

**Cold junction compensation** 



**Application are** 

Max

+50 mV

+100 mV

+500 mV

+1000 mV

+1200 °C

+1372 °C

+1767 °C

+1767 °C

+1825 °C

+1000 °C

+400 °C

+1300 °C

+0.05% f •

± 0.5 °C

2

Input impedance	
mV, Tc	>= 1 MΩ
Thermal drift (1)	
Full Scale	± 0.005 % / °C
Thermal drift CJC	
Full Scale	± 0.02 %/ °C
Line resistance influence	•
mV, Tc	< 0.8 uV/Ohm
DIGITAL INTERFACE	
Voltage on terminals	typical 24 Vdc (30 Vdc max.)
ON state	>9 Vdc
Input impedance	
(ENABLE, CLK)	4.7 KOhm
Minimum output load	
(DATA)	560 Ohm (2)
Max. frequency	
Clock signal	500 Hz
Rise / Fall time	(Tr) < 0.2 ms
1) referred to input Span (diffe	rence between max. and min.

lues) (2) The load on the output DATA is controlled with the current taken from the ENABLE signal.

### A/D INTERFACE FOR PLC 2 INPUT CHANNELS FOR RTD, Res

### **GENERAL DESCRIPTION**

Linearity (1)

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

### **FEATURES**

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy
- 2 input channels

- Configurable input for Pt100, Pt1000, Ni100, Ni1000, Resistance and Potentiometers up to 2 Kohm



**Application areas** 

- Galvanic isolation at 2000 Vac on three ways

- Suitable for DIN rail mounting in compliance with

POWER SUPPLY				
Power supply	18 30 Vdc			
Current cons	sumption	30 mA @ 24 Vda		
Rever. polarit	ty protection	60 Vdc max		
ISOLATION	<b>VOLTAGE</b>			
INPUT – PLC				
Power supply	y– INPUT	2000 Vac 50 Hz, 1 min.		
Power supply	y– PLC	SU HZ, T MIN.		
TEMPERAT	FURE AND H	HUMIDITY		
Operative ter	nperature	-10°C +60°C		
Storage temp	perature	-40°C +85°C		
Humidity (no	t cond)	0 90 %		
EMC (for in	dustrial envir	ronments)		
DIRECTIVE	2004/108/	EC		
Immunity EN 61000-6-2		2		
Emission EN 61000-6-4		4		
HOUSING				
Material Self-extingui		shing plastic		
Dim. (mm)	) x 112 x 12.5			
Weight				

Input type	Min	Max		
RTD				
Pt100	-200 °C	+850 °C		
Pt1000	-200 °C	+200 °C		
Ni100	-80 °C	+180 °C		
Ni1000	-60 °C	+150 °C		
Resistance				
500 Ω	0 Ω	500 Ω		
2 ΚΩ	0 Ω	2000 Ω		
Potentiometer				
< 500 Ω*	0 %	100 %		
< 2 KΩ*	0 %	100 %		
Input channel	s	2		
Input calibrat	ion (1)	±0.1 % f.s.		
Linearity (1)				
Res, Pot.	± 0.1 % f.s.			
RDT	± 0.2 % f.s.			
RTD / Res. excitation current 0.350 mA typ.				

Full Scale	± 0.005 % / °C		
Line resistance influence			
RTD, Res	< 0.05%/Ohm		
(50 $\Omega$ max , 3 wires connection)			
DIGITAL INTERFACE			
Voltage on terminals	typical 24 Vdc (30 Vdc max.)		
ON state	>9 Vdc		
Input impedance			
(ENABLE, CLK)	4.7 KOhm		
Minimum output load			
(DATA)	560 Ohm (2)		
Max. frequency			
Clock signal	500 Hz		
Rise / Fall time (Tr) < 0.2 ms			
(1) referred to input Span (diff	erence between max and min		

referred to input Span (difference between max. and min. values)

(2) The load on the output DATA is controlled with the current taken from the ENABLE signal

\* nominal value

74

- Configurable by DIP-switch

- EMC compliant - CE mark

EN-50022 and EN-50035

Thermal drift (1) + 0.005 % / °C Full Scale



### A/D INTERFACE FOR PLC 2 INPUT CHANNELS FOR V, mA



Weight

HOUSING Material

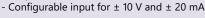
### **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

### FEATURES

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy

- 2 input channels





**Application areas** 

>= 100 KΩ

± 0.005 % / °C

<= 50 Ω



### (7)

- Galvanic isolation at 2000 Vac on three ways

- Suitable for DIN rail mounting in compliance

- Configurable by DIP-switch

- EMC compliant – CE mark

with EN-50022 and EN-50035

POWER SUPPLY				INPUT	
Power supply voltage 18 30		18 30 Vdc		Input type	Min
Current cons	sumption	30 mA @ 24 Vd	с	Voltage	
Rever. polari	ty protection	60 Vdc max	ļ	10 V	-10 V
ISOLATIO	N VOLTAGE			Current	
INPUT - PLC				Current	1
Power suppl	v– INPUT	2000 Vac		20 mA	-20 mA
Power supply PLC 50		50 Hz, 1 min.	50 Hz, 1 min.	Input channels	5
TEMPERATURE AND HUMIDITY				Input calibrati	<b>on</b> (1)
Operative temperature -10°C +60°C			Linearity (1)		
Storage -40°C +85°C			Input impedan	ce	
temperature		-40 C +05 C		V	
Humidity (not cond)		0 90 %		mA	
EMC (for in	dustrial envir	ronments)		Thormal duift (	1)
DIRECTIVE 2004/108/EC			Thermal drift (	1)	
Immunity EN 61000-6-2		l	Full Scale		
Emission EN 61000-6-4					

	DIGITAL INTERFACE			
Мах	Voltage on terminals	typical 24 Vdc (30 Vdc max.)		
	ON state	>9 Vdc		
+10 V	Input impedance			
	(ENABLE, CLK)	4.7 KOhm		
+20 mA	Minimum output load			
2	(DATA)	560 Ohm (2)		
±0.1 % f.s.	Max. frequency			
±0.1 % f.s.	Clock signal	500 Hz		
	Rise / Fall time	(Tr) < 0.2 ms		
(1) referred to input Span (difference between max. and mi				
	values) (2) The load on the output DATA is controlled with the cur- rent taken from the ENABLE signal			
S∕°C				

- Galvanic isolation at 2000 Vac on three ways

Suitable for DIN rail mounting in compliance with

kood busin

- EMC compliant - CE mark

EN-50022 and EN-50035

### A/D INTERFACE FOR PLC 4 INPUT CHANNELS FOR mV, TC

Self-extinguishing plastic

Dim. (mm) W x L x H : 90 x 112 x 12.5 about 90 g.



### **GENERAL DESCRIPTION**

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

### FEATURES

- Acquisition of analogue signals on PLC's digital I/O
- Analogue input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy - 4 input channels
- Configurable input for ± 1 V or Tc type J,K, R,S,B,E,T,N - Configurable by DIP-switch



**Application areas** 

POWER SUPPLY		INPUT				
Power suppl	y voltage	18 30 Vdc	Input type	Min	Max	
Current con	sumption	30 mA @ 24 Vdc	Voltage	Voltage		
Rever. polari	ity protection	60 Vdc max	50 mV	-50 mV	+50 mV	
ISOLATIO			100 mV	-100 mV	+100 mV	
INPUT – PLC	· · · · - · · · · · · · · · · · · · · ·		500 mV	-500 mV	+500 mV	
Power suppl		2000 Vac	1000 mV	-1000 mV	+1000 mV	
		50 Hz, 1 min.	Thermocouple			
Power supply– PLC			J	-210 °C	+1200 °C	
TEMPERATURE AND HUMIDITY		К	-210 °C	+1372 °C		
Operative temperature		-10°C +60°C	R	-50 °C	+1767 °C	
Storage temperature		-40°C +85°C	S	-50 °C	+1767 °C	
Humidity (not cond)		090%	В	+400 °C	+1825 °C	
<b>EMC</b> (for industrial environments)		E	-210 °C	+1000 °C		
DIRECTIVE 2004/108/EC		т	-210 °C	+400 °C		
			N	-210 °C	+1300 °C	
Immunity EN 61000-6-2		Input channels		4		
Emission EN 61000-6-4		4	Input calibration (1) ±0.0		±0.05 % f.s.	
HOUSING			Linearity (1)			
Material Self-extinguishing plastic		mV	± 0.1 % f.s.			
Dim. (mm) W x L x H : 90 x 112 x 12.5		Тс	± 0.2 % f.s.			
Weight about 90 g.		Cold junction	compensation	± 0.5 °C		

Input impedance	
mV, Tc	>= 1 MΩ
Thermal drift (1)	
Full Scale	± 0.005 % / °C
Thermal drift CJC	
Full Scale	± 0.02 %/ °C
Line resistance influence	)
mV, Tc	< 0.8 uV/Ohm
DIGITAL INTERFACE	
Voltage on terminals	typical 24 Vdc (30 Vdc max.)
ON state	>9 Vdc
Input impedance	
(ENABLE, CLK)	4.7 KOhm
Minimum output load	
(DATA)	560 Ohm (2)
Max. frequency	
Clock signal	500 Hz
Rise / Fall time	(Tr) < 0.2 ms

(2) The load on the output DATA is controlled with the current taken from the ENABLE signal

### A/D INTERFACE FOR PLC 4 INPUT CHANNELS FOR +/- 20 mA



**GENERAL DESCRIPTION** The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC.

### - Configurable by DIP-switch

- Galvanic isolation at 2000 Vac on three ways
- EMC compliant CE mark
- Suitable for DIN rail mounting in compliance
- with EN-50022 and EN-50035

### POWER SUPPLY

DAT 6000 SERIES

76

Weight

DAT 6023-V

Power suppl	y voltage	18 30 Vdc		
Current consumption		30 mA @ 24 Vdc		
Rever. polari	ty protection	60 Vdc max		
ISOLATIO	N VOLTAGE			
INPUT – PLC				
Power suppl	y– INPUT	2000 Vac 50 Hz, 1 min.		
Power suppl	y– PLC	50 112, 1 11111.		
TEMPERATURE AND HUMIDITY				
Operative ter	mperature	-10°C +60°C		
Storage temperature		-40°C +85°C		
Humidity (not cond)		0 90 %		
EMC (for industrial environments)				
DIRECTIVI	2004/108/	EC		
Immunity	EN 61000-6-2	2		
Emission EN 61000-6-4		÷		
HOUSING				
Material Self-extinguishing plastic				
Dim. (mm) W x L x H : 90		) x 112 x 12.5		

about 90 g.

### The digital signal can be connected to any input of the PLC.

- FEATURES
- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy

Min

-20 mA

- 4 input channels - Configurable input for ± 20 mA

INPUT Input type

Current

Input channels

Input impedance

Thermal drift (1)

Linearity (1)

Input calibration (1)

20 mA

mΑ

Full Scale

Application areas

Max

+20 mA

±0.1 % f.s.

±0.1 % f.s.

4

<= 50 Ω

± 0.005 % / °C

The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution.

DIGITAL INTERFACE				
Voltage on terminals	Voltage on terminals         typical 24 Vdc (30 Vdc max.)			
ON state >9 Vdc				
Input impedance				
(ENABLE, CLK) 4.7 KOhm				
Minimum output load				
(DATA)	560 Ohm (2)			
Max. frequency				
Clock signal	500 Hz			
Rise / Fall time	(Tr) < 0.2 ms			

(1) referred to input Span (difference between max. and min. values) (2) The load on the output DATA is controlled with the current taken from the ENABLE signal

### A/D INTERFACE FOR PLC 4 INPUT CHANNELS FOR +/- 10V

**GENERAL DESCRIPTION** 

The devices of the DAT6000 series are an evolution in the techniques of connection of analog signals to PLC. The devices of this series amplify, linearise, isolate, filter and convert the analog signals coming from various sensors in a high resolution. The digital signal can be connected to any input of the PLC.

Max

+10 V

±0.1% f.s.

±0.1% f.s.

4

>/= 100 KΩ

± 0.005 % / °C

### **FEATURES**

- Acquisition of analog signals on PLC's digital I/O
- Analog input to any PLC or micro PLC
- Up to 16-bit resolution with Full Scale high accuracy

Min

-10 V

- 4 input channels

INPUT

Input type

Input channels

Input impedance

Thermal drift (1)

Linearity (1)

Input calibration (1)

Voltage

10V

Volt

Full Scale

- Configurable input for ± 10 V

CE NOHS B

- Configurable by DIP-switch - Galvanic isolation at 2000 Vac on three ways - EMC compliant - CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

typical 24 Vdc (30 Vdc max.)

>9 Vdc

4.7 KOhm

560 Ohm (2)

(Tr) < 0.2 ms

500 Hz

(1) referred to input Span (difference between max. and min.

(2) The load on the output DATA is controlled with the cur-



Voltage on terminals

**Minimum output load** 

rent taken from the ENABLE signal

Input impedance

Max. frequency

**Rise / Fall time** 

**ON** state

(DATA)

values)

Clock signal

(ENABLE, CLK)

	POWER SU		
	Power supply voltage		18 30 Vdc
	Current consumption		30 mA @ 24 Vdc
	Rever. polarit	ty protection	60 Vdc max
	ISOLATION	N VOLTAGE	
	INPUT – PLC		
	Power supply- INPUT		2000 Vac 50 Hz, 1 min.
	Power supply– PLC		
	TEMPERAT	HUMIDITY	
	Operative temperature		-10°C +60°C
	Storage temperature	-40°C +85°C	
	Humidity (not cond)		0 90 %
<b>EMC</b> (for industrial environments)			onments)
	DIRECTIVE 2004/108/EC		
	Immunity	2	
	Emission EN 61000-6-4		4
	HOUSING		
	Matarial	Calf autinauti	abina plastic

<b>1</b> aterial	Self-extinguishing plastic
im. (mm)	W x L x H : 90 x 112 x 12.5
Veight	about 90 g.

D W

### 

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**ELECTRONIC AND CONTROL PROCESS DEVICES** 

www.datexel.it

DAT6011

### "DAT6000 SERIES" A/D interface modules for PLC

DAT6011

77

ELECTRONIC AND CONTROL PROCESS DEVICES









### "DAT1000 SERIES": temperature transmitters for DIN B in-head mounting

The transmitters of the DAT1000 series can accept at their input signals coming from 2,3 or 4 wires Pt100, thermocouple and potentiometer sensors or voltage signals (mV). The devices provide a 4÷20 mA two wire current loop output signal.

The series is composed of devices with input configurable by PC with or without galvanic isolation. Moreover it is available a version of the transmitters of the DAT1000 series developed for the use in potentially explosive atmospheres certified in according to the DIRECTIVE ATEX 94/9/EC. (see p. 24 to 26).

### INDEX

- 80 DAT 1010 Two wire transmitter for RTD programmable by PC
- 81 DAT 1015

Two wire universal transmitter programmable by PC

### 82 • DAT 1061

Isolated two wire Transmitter for RTD programmable by PC

### 83 • DAT 1066

Isolated two wire universal transmitter programmable by PC

## DAT1000 SERIES

10





**DAT1000** Temperature transmitters for **SERIES** DIN B in-head mounting

### **DAT 1010**

### TWO WIRE TRANSMITTER FOR RTD PROGRAMMABLE BY PC



**GENERAL DESCRIPTION** 

The transmitter DAT 1010 is able to execute many functions such as: measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input.

The measured values are converted in a 4÷20 mA current signal .

The device guarantees high accuracy and performances stability both in time and in temperature.

**Application areas** 

### FEATURES

- Configurable input for RTD, mV, Resistance and Potentiometer
- 4  $\div$  20 mA configurable output on current loop
- Configurable by Personal Computer
- High accuracy



- On-field reconfigurable
- Programming of the unit measure as °C or °F

Energy

- EMC compliant CE mark
- Suitable for DIN B in-head mounting
- Option for DIN rail mounting in compliance with EN-50022 ("KIT DIN RAIL" Option)

Span min 4 mA 4 mA

POWER SUPPLY				<b>TEMPERATURE &amp; HUMIDIT</b>	1		
Power supply voltage	2	10 32Vdc		Operative temperature		-40°C +	85°C
				Storage temperature		-40°C +85°C	
Reverse polarity prot	ection	60 Vdc max		Humidity (not condensed)	condensed) 0 90		%
EMC (for industrial e	environmen	ts)		HOUSING			
DIRECTIVE 2004/108	/EC			Material	PC + .	ABS VO	
				Mounting	DIN B	head or bigger	
Immunity		EN 61000-6-2		Dimensions (mm)	Ø= 43	3 mm ; H = 24 m	nm
Emission		EN 61000-6-4		Weight	about		
NPUT				INPUT			
Input type	Mir	Max	Span min	Line resistance influence(1)			
RTD 2,3,4 wires		<b>I</b>		mV	<=0.8 u\	//Ohm	
Pt100	-200°	C 850°C	50°C	RTD 3 wires	0.05 %/Ω	$\Omega$ (50 $\Omega$ balanced	max.)
Pt1000	-200°		50°C	RTD 4 wires	0.005 %/	Ω (100 $Ω$ balance	d max.)
	-60°C		50°C	RTD excitation current			
			50°C	Typical	0.350 mA	0.350 mA	
Ni1000	-60°C	. 150 C	50 C	Thermal drift (1)			
Voltage			1	Full scale ± 0.01 % / °C			
mV	-100m	V +700mV	2 mV	Burn-out values	- 1		
Potentiometer				Max. value output about			
	0 0	200 Ω	10%	Min. value output about			
Nominal value	200 0	Ω 500 Ω	10%	Response time (10÷90% of f.s.)			
	0.5 KG	2 ΚΩ	10%	(1) referred to input Span (differ	ence betwe	en max. and mi	n. values)
RES. 2,3,4 wires	- 1			OUTPUT			
Low	0 Ω	300 Ω	10 Ω	Output type	Min	Max	Span r
High	0 Ω	2000 Ω	200 Ω	Direct current	4 mA	20 mA	4 m
Input calibration(1)				Reverse current	20 mA	4 mA	4 m
RTD		e higher of ±0.1 % f.s		Output calibration			
Res. Low	th	e higher of ±0.1 % f.s	s. or ±0.15 Ω	Current	±7uA		
Res. High		e higher of ±0.2 % f.					
mV	th	e higher of ±0.1 % f.s	s. or ±18 uV				
Input impedance							
mV	>:	= 10 ΜΩ					
Linearity (1)							
RTD	±	0.1 % f.s					



mV, TC

the higher of  $\pm 0.1~\%$  f.s. or  $\pm 18~uV$ 

TWO WIRE UNIVER	RSAL TRA	NSM	ITTER PROG	RAMMAB	BLE B	Y PC					
DAT 1015	The RTDs on it More The	s sensors, conversions s input. eover the DAT 1015 measured values a	015 is able to ex on of a linear re 5 is able to mea re converted in	esistance asure an n a 4÷20	many functions such e variation, conversio d linearise the stanc ) mA current signal. formances stability	on of a voltage s dard thermocou	ignal even ples with in	coming Iternal co	from a potenti	ometer connected	
DACEXEL     Setting and the setting and t	ce	FEATURES - Configurable input for RTD, TC, mV, Res Potentiometer - 4 ÷ 20 mA configurable output on curre - Configurable by Personal Computer - High accuracy				sistance and - Programmi - EMC compl ent loop - Suitable for - Option for		ramming complian able for DI on for DIN	reconfigurable ming of the unit measure as °C or °F npliant – CE mark for DIN B in-head mounting or DIN rail mounting in compliance with 2 ("KITDIN RAIL" Option)		
				Por state	Ар	plication areas	undustries	Soard machine	Euerg	tood busing	water treatment
POWER SUPPLY						TEMPERATUR	E & HUMIDI	ТҮ			
		10	221/1-			Operative tem	perature			-40°C	+85°C
Power supply voltage		10	32Vdc			Storage tempe	erature			-40°C	+85°C
Reverse polarity prote	ction	60 V	dc max			Humidity (not	condensed)			0 90	%
EMC (for industrial er	vironmen	ts)				HOUSING					
•		,				Material		PC	2 + AB	5 V0	
DIRECTIVE 2004/108/	EC										~
Immunity		EN 6	1000-6-2						DIN B head or bigger		
Emission		EN 6	1000-6-4			Dimensions (mm)Ø = 43 mm ; H = 24 mmWeightabout 50 g.					
INPUT						INPUT					
Input type	Min	1	Мах	Span m	in	Input impeda	ance				
TC CJC int./ext.	•			•		TC, mV		>= 1	0 MΩ		
J	-200°	c	1200°C	2 mV		Linearity (1)					
К	-200°	C I	1370°C	2 mV		ТС			2 % f.s.		
S	-50°0	c i	1760°C	2 mV		RTD			1 % f.s		
R	-50°(	C	1760°C	2 mV		Line resistand	ce influence(	,	8 uV/O	la	
В	400°0	2	1820°C	2 mV		TC, mV RTD 3 wires				nm 0 Ω balanced	(may)
E	-200°(	c	1000°C	2 mV		RTD 5 wires			-	$100 \Omega$ balance	
<u>-</u> Т	-200°(		400°C	2 mV		RTD excitatio	on current	10.001	) /0/12 (		
N	-200°(		1300°C	2 mV		Typical		0.350	) mA		
RTD 2,3,4 wires	1 200 1	-		1 2		CJC comp.		± 0.5			
Pt100	-200°(	-	850°C	50°C		Thermal drift	: (1)				
Pt1000	-200°		200°C	50°C		Full scale		± 0.0	01 % / °C	2	
Ni100	-200 ( -60°(		180°C	50°C		CJC		± 0.0	)1 % / °(	C	
Ni1000	-60°C			50°C		Burn-out valu	ues				
	-60 (	-	150°C	50 C		Max. value ou	tput	abou	ıt 21.6 n	nA	
Voltage	100		700 1/			Min. value out	•		ıt 3.5 m	A	
mV	-100 n		+700 mV	2 mV		Response time			ut 400		
Potentiometer	0 0		200 Ω	10%		(1) referred to ir	nput Span (dif	ference b	etween	max. and m	in. values)
(Nominal value)	200 0		500 Ω	10%							
	0.5 KG	2	2 ΚΩ	10%		OUTPUT					
Resistance 2,3,4 wires	1					Output type		Min		Max	Span min
Low	0 Ω		300 Ω	10 Ω		Direct current Reverse currer	at I	4 mA 20 mA		20 mA 4 mA	4 mA 4 mA
High	0 Ω		2000 Ω	200 Ω				20 111	`		<del>-</del> 111A
Input calibration(1)	-					Output calibr	auon	± 7	μΔ		
RTD	the highe	r of ±	0.1 % f.s. or ±0.	2 °C		Current		1 1 1	un		
Res. Low	the highe	r of ±	0.1 % f.s. or ±0.	15 Ω							
Res. High	the highe	r of ±	0.2 % f.s. or ±1	Ω							

DAT1000 SERIES

**DAT 1061** 

### ISOLATED TWO WIRE TRANSMITTER FOR RTD PROGRAMMABLE BY PC

### **GENERAL DESCRIPTION** The isolated transmitter DAT 1061 is able to execute many functions such as : measure and linearisation of the temperature characteristic of RTDs sensors, conversion of a linear resistance variation, conversion of a voltage signal even coming from a potentiometer connected on its input. The measured values are converted in a 4+20 mA current signal. The device guarantees high accuracy and performances stability both in time and in temperature. **FEATURES** - On-field reconfigurable - Configurable input for RTD, mV, Resistance and - Programming of the unit measure as °C or °F Potentiometer - EMC compliant - CE mark - Galvanic isolation at 1500 Vac - Suitable for DIN B in-head mounting - 4 $\div$ 20 mA configurable output on current loop DACEXE E Option for DIN rail mounting in compliance with - Configurable by Personal Computer C EN-50022 ("DIN RAIL" Option) - High accuracy Energy ÖÖ **Application areas** $\langle \gamma \rangle$

			2002/95/EC	lead-freé					
POWER SUPPLY					<b>TEMPERATURE &amp; HUMID</b>	ΟΙΤΥ			
Power supply voltage		07 32\	/dc		Operative temperature		-40°C +	-85°C	
Reverse polarity protect	tion	60 Vdc max					/0°C	05%	
ISOLATION VOLTAGE					Storage temperature		-40°C +	-05 C	
Input- output/Power s	upply	1500 Va	c, 50 Hz,1 m	nin.	Humidity (not condensed)		0 90	%	
EMC (for industrial en	vironmen	its)			HOUSING				
DIRECTIVE 2004/108/	EC				Material	Material PC + ABS V0			
					Mounting	DIN E	3 head or bigge		
Immunity		EN 6100	0-6-2		Dimensions (mm)	Ø= 4	3 mm ; H = 24 r	nm	
Emission		EN 6100	0-6-4		Weight	abou	t 50 g.		
Input				_	Input				
nput type	Mir	n	Мах	Span min	Line resistance influence				
RTD 2,3,4 wires	I				mV	<=0.8 u	V/Ohm		
Pt100	-200°	°C	850°C	50°C	RTD 3 wires	0.05 %/0	5 %/Ω (50 Ω balanced max.)		
Pt1000	-200°	-	200°C	50°C	RTD 4 wires	RTD 4 wires $0.005 \%/\Omega$ (100 $\Omega$ balanced m		ed max.)	
Ni100	-60°C		180°C	50°C	RTD excitation current				
Ni1000	-60°C	-	150°C	50°C	ТурісаІ	0.350 m	0.350 mA		
	-00 0		150 C	J 30 C	Thermal drift (1)				
Voltage	100	<u>, , , , , , , , , , , , , , , , , , , </u>	700 1/	2.14	Full scale	± 0.01 %	o∕°C		
mV	-100m	ו Vו	+700mV	2 mV	Burn-out values				
Potentiometer	1			<b>T</b>	Max. value output	about 20			
	0 0	2	200 Ω	10%	Min. value output	about 3.			
Nominal value	200 0	2	500 Ω	10%	Value max. fault	about 2			
	0.5 Kg	Ω	50 ΚΩ	10%	Value min. fault	about 3.			
Resistance 2,3,4 wires	;				Response time (10÷90% of	- 1			
Low	0 Ω		300 Ω	10 Ω	(1) referred to input Span (di	ifference betw	een max. and mi	n. values)	
High	0 Ω		2000 Ω	200 Ω	ουτρυτ				
Input calibration(1)					Output type	Min	Max	Span mir	
RTD	th	ne higher o	of ±0.1 % f.s	. or ±0.2 °C	Direct current	4 mA	20 mA	4 mA	
Res. Low	th	ne higher o	of ±0.1 % f.s	. or ±0.15 Ω	Reverse current	20 mA	4 mA	4 mA	
Res. High	th	ne higher o	of ±0.2 % f.s	s. or ±1 Ω	Output calibration			+ mA	
mV	th	ne higher o	of ±0.1 % f.s	. or ±10 uV	Current	± 7 uA			
Input impedance						ruA			
mV	>:	= 10 MΩ			]				
Linearity (1)					]				

DAT1000 SERIES

RTD

± 0.1 % f.s



DAT1000 SERIES

83

### .

Output type

Direct current

Current

Reverse current

**Output calibration** 

Min

4 mA

20 mA

±7uA

Мах

20 mA

4 mA

Span min

4 mA

4 mA

						MABLE BY PC					
DAT 1066	L	The isc ristic o conneo Moreo The mo	f RTDs sensors, c cted on its input. over the DAT 1066 easured values ar	DAT 1066 is able conversion of a li is able to measure converted in a	near i ire an 4÷20	xecute many functions resistance variation, co d linearise the standa 0 mA current signal. formances stability bo	onversion of a vol rd thermocouples	tage s with	signal even coi internal cold ju	ming from a	potentiomete
DATEXEL Martine And Martine A		FEATURES - Configurable input for RTD, TC, mV, Resi Potentiometer - Galvanic isolation at 1500 Vac - 4 ÷ 20 mA configurable output on curre - Configurable by Personal Computer - High accuracy				ent loop - Option fo		d reconfigurable mming of the unit measure as °C or °F mpliant – CE mark e for DIN B in-head mounting for DIN rail mounting in compliance with 122 ("KITDIN RAIL" Option)			
		(		Rad-free	Арр	plication areas	undustries esort	machine O	Evergh	4 sod busines	water treatmen
POWER SUPPLY						TEMPERATURE	& HUMIDITY				
Power supply voltage		07 3	2Vdc			Operative tempe	rature		-	40°C +85	5°C
Reverse polarity protec	tion	60 Vd	c max								
ISOLATION VOLTAGE						Storage tempera	ture		-	40°C +85	ъ°С
Input- output/Power su		1500 \	/ac, 50 Hz,1 mi	in.		Humidity (not co	ondensed)			0 90 %	
EMC (for industrial en		(S)				HOUSING		-			
DIRECTIVE 2004/108/	EC					Material			C + ABS VO		
Immunity		EN 610	000-6-2			Mounting			IN B head c		
-						Dimensions (mm	ו)	Ø	ð= 43 mm ;∣	H = 24 mn	ı
Emission		EN 610	000-6-4			Weight		а	bout 50 g.		
Input						Input					
Input type	Min		Мах	Span min		Input calibration	on(1)				
						D T D			higher of ±	0.1% fs o	r +0 2 °C
IC CJC Int./ext.						RTD			-		
	-200°0	c	1200°C	2 mV		Res. Low		the	higher of ±	0.1 % f.s. o	r ±0.15 Ω
J	-200°0		1200°C 1370°C	2 mV 2 mV		Res. Low Res. High		the the	higher of ± higher of ±	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
ĸ		2				Res. Low Res. High mV, TC		the the	higher of ±	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S	-200°C		1370°C	2 mV		Res. Low Res. High mV, TC Input impedan	ce	the the the	higher of ± higher of ± higher of ±	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R	-200°C -50°C -50°C		1370°C 1760°C	2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV	ce	the the the	higher of ± higher of ±	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R B	-200°C		1370°C 1760°C 1760°C	2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1)	ce	the the the	higher of ± higher of ± higher of ± 10 MΩ	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R B E	-200°C -50°C -50°C 400°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC	ce	the the the >= ± 0	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s.	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R B E T	-200°C -50°C -50°C 400°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD		the the the >= ± 0	higher of ± higher of ± higher of ± 10 MΩ	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R B B E T N	-200°C -50°C -50°C 400°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC		the the the >= ± 0 ± 0	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s.	0.1 % f.s. o 0.2 % f.s. c	r ±0.15 Ω or ±1 Ω
J K S R B E T T N RTD 2,3,4 wires	-200°C -50°C 400°C -200°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance		the the the >= ± 0 ± 0	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV
J K S R B E E T T N RTD 2,3,4 wires Pt100	-200°C -50°C 400°C -200°C -200°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 850°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV		the the >= ± 0 ± 0	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s D.8 uV/Ohm	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T T N RTD 2,3,4 wires Pt100 Pt1000	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 1300°C 850°C 200°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires	influence(1)	the the >= ± 0 ± 0	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω I	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T T N RTD 2,3,4 wires Pt100 Pt1000 Ni100	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -200°C		1370°C         1760°C         1760°C         1820°C         180°C         300°C         850°C         200°C         180°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires <b>RTD excitation</b> Typical	influence(1)	the the the >= ± 0 ± 0 <=( 0.05 0.00	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω I	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K K S R B B E T T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 1300°C 850°C 200°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires <b>RTD excitation</b> Typical <b>CJC comp.</b>	influence(1) current	the the the >= ± 0 ± 0 <=( 0.05 0.00	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω I 05 %/Ω (100 Ω	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K K S R B E E T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -200°C -200°C		1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 850°C 200°C 180°C 150°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD excitation Typical CJC comp. Thermal drift (	influence(1) current	the the the >= ± 0 ± 0 .005 0.005 0.000 0.355 ± 0.	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 05 %/Ω (100 Ω 55 °C	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K K S R B E E T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -60°C -60°C -60°C	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 850°C 200°C 180°C 180°C 150°C 400°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires CJC comp. Thermal drift ( Full scale	influence(1) current	the the the ± 0 ± 0 <=( 0.05 0.000 0.35 ± 0. ± 0.	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 55 %/Ω (100 Ω 50 mA 55 °C 01 % / °C	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage mV	-200°C -50°C 400°C -20	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 180°C 180°C 150°C 150°C 400°C 150°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD excitation Typical CJC comp. Thermal drift ( Full scale CJC	influence(1) current 1)	the the the ± 0 ± 0 <=( 0.05 0.000 0.35 ± 0. ± 0.	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 05 %/Ω (100 Ω 55 °C	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage mV Potentiometer	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -200°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 180°C 180°C 150°C 150°C +700 mV 200 Ω	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires RTD 2 comp. Thermal drift ( Full scale CJC Burn-out value	influence(1) current 1)	the the the the ± 0 ± 0 0.05 0.00 0.35 ± 0. ± 0.	higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω I 05 %/Ω (100 Ω 50 mA 5°C 01 % / °C 01 % / °C	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T N RTD 2,3,4 wires Pt100 Pt1000 Ni1000 Ni1000 Voltage mV Potentiometer (Nominal value)	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -200°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C -60°C	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 180°C 180°C 150°C 150°C 400°C 150°C	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires RTD 4 wires CJC comp. Thermal drift ( Full scale CJC Burn-out value Max. value outp	influence(1) current 1) s ut	the the the the 2 = 0.05 0.005 0.000 0.35 ± 0.000 ± 0.000 ± 0.000 ± 0.000	higher of ± higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 55 %/Ω (100 Ω 50 mA 55 °C 01 % / °C 01 % / °C ut 20.5 mA	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
TC CJC int./ext.         J         K         S         R         B         E         T         N         RTD 2,3,4 wires         Pt100         Pt1000         Ni100         Ni1000         Voltage         mV         Potentiometer         (Nominal value)         Resistance 2,3,4 wires	-200°C -50°C 400°C -20	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 130°C 130°C 150°C 150°C 400°C 150°C 150°C 500 Ω 500 Ω	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires RTD 4 wires CJC comp. Thermal drift ( Full scale CJC Burn-out value Max. value outp Min. value outp	influence(1) current 1) s ut ut	the the the the the the the the the the	higher of ± higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 05 %/Ω (100 Ω 50 mA 5°C 01 % / °C 01 % / °C ut 20.5 mA ut 3.8 mA	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage mV Potentiometer (Nominal value) Resistance 2,3,4 wires Low	-200°C -50°C 400°C -200°C -200°C -200°C -200°C -200°C -200°C -60°	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 180°C 180°C 150°C 150°C 400 Ω 500 Ω 500 Ω	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires RTD 4 wires CJC comp. Thermal drift ( Full scale CJC Burn-out value Max. value outp Min. value outp Value max. fault	influence(1) current 1) s ut ut	the the the the ± 0 ± 0 (0.05 0.00 0.05 0.00 0.00 ± 0 ± 0 ± 0 ± 0 ± 0 0 ± 0 0 ± 0 0 0.05	higher of ± higher of ± higher of ± higher of ± 10 MΩ 2 % f.s. 1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω I 05 %/Ω (100 Ω 5 %/Ω (100 Ω 00 mA 5 °C 01 % / °C 01 % / °C 01 % / °C ut 20.5 mA ut 3.8 mA ut 21.6 mA	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)
J K S R B E T N RTD 2,3,4 wires Pt100 Pt1000 Ni100 Ni100 Voltage mV Potentiometer (Nominal value) Resistance 2,3,4 wires	-200°C -50°C 400°C -20	C C C C C C C C C C C C C C C C C C C	1370°C 1760°C 1760°C 1820°C 1000°C 400°C 1300°C 200°C 130°C 130°C 150°C 150°C 400°C 150°C 150°C 500 Ω 500 Ω	2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV 2 mV		Res. Low Res. High mV, TC Input impedan TC, mV Linearity (1) TC RTD Line resistance TC, mV RTD 3 wires RTD 4 wires RTD 4 wires RTD 4 wires RTD 4 wires CJC comp. Thermal drift ( Full scale CJC Burn-out value Max. value outp Min. value outp	influence(1) current 1) s ut ut	the the the the ± 0 ± 0 (0.05 0.00 0.35 ± 0. ± 0. ± 0. ± 0. ± 0. abo abo abo	higher of ± higher of ± higher of ± higher of ± 10 MΩ .2 % f.s. .1 % f.s 0.8 uV/Ohm 5 %/Ω (50 Ω l 05 %/Ω (100 Ω 50 mA 5°C 01 % / °C 01 % / °C ut 20.5 mA ut 3.8 mA	0.1 % f.s. o 0.2 % f.s. c 0.1 % f.s. o	r ±0.15 Ω r ±1 Ω r ±10 uV ax.)

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### Digital indicators for panel mounting DAT9550, DAT8050 and "DAT700 SERIES"

The series is composed of devices dedicated to process and temperature measurement.

The **DAT9550** is graphic display size 48 x 96 mm communicating on RS-485 with MODBUS RTU protocol.

The **DAT8050** is a programmable digital indicator for current loop size 48x96 mm with 4 digit LED visualization.

The DAT700 series is composed of devices size 36x72 mm (DAT701, DAT702, DAT733. DAT734, DAT735).

### INDEX

86 · DAT 9550

**ODAIEXEL** 

Remote Graphic Display on RS-485 with Modbus RTU protocol **DAT 8050** 

Loop powered 4 digit LED programmable digital indicator

- 87 **DAT 701** 
  - 3.5 digit LED digital indicator
  - **DAT 702**
  - 3.5 digit LCD digital indicator
- 88 DAT 733
  - 3.5 digit LCD digital indicator
  - **DAT 734**

3.5 digit LCD or LED display digital thermometer for Pt100

- **DAT 735** 89 •
  - 3.5 digit LCD or LED display digital thermometer for Thermocouple

< > × ×

DAT9550

DATENEL

# DIGITAL INDICATORS

11

DAT9550DAT8050Digital indicators forDAT700 SERIESpanel mounting

### **REMOTE GRAPHIC DISPLAY ON RS-485 WITH MODBUS RTU PROTOCOL**

supply & RS-485) and RJ45 (RS-232)

- Galvanic Isolation on all the ways

- EMC compliance - CE mark

DIN-43700

- Compact enclosure dimensions (DIN 48 x 96 mm)

Suitable for panel mounting in compliance with

## DAT 9550

### GENERAL DESCRIPTION

The device DAT 9550 is a graphic display designed for panel mounting and communicating with Modbus RTU protocol on RS-485 and RS-232 serial Slave port. Moreover on the device there is a RS-485 Master port by means of which it is possible to communicate with the eventual Modbus Slave devices connected. It can be used as Slave peripheral for the visualization of the data coming from the Intelligent Units of the DAT9000 series or from a PC, PLC or panel operator.

### FEATURES

- Graphic display 132x32 pixels
- RS-485/RS-232 Modbus-RTU Slave Interface
- RS-485 Modbus-RTU Master Interface
- Remotely programmable
- Connection by removable screw-terminals (power



Application areas

CONNECTIONS



POWER SUPPLY			CONNECTIONS			
Power supply voltage	10 ÷ 30 Vdc	RS-232D		RJ-45		
	45 mA typ. @ 24Vdc (standby,max. brightness)	RS-485/Sup	ply	Removable screw terminal blocks		
Current consumption	80 mA max	HOUSING				
		Material	Noryl self-	extinguishing plastic (U	L94-V0)	
ISOLATIONS		Mounting	Panel mou	nting		
Power supply/ RS485	1500 Vac, 50 Hz, 1 min.	Dim. (mm)	Dim. (mm) W x L x T : 96 x 48 x 74			
TEMPERATURE & HUMIDITY		Weight about 160 g.				
Operative temperature	-20°C +60°C	In compli	ance with	IEE 802.3 EIA RS-48	35 and RS-232	
Storage temperature	-30°C +80°C	Baud-rate			up to 38.4 Kbps	
Humidity (not condensing)	090%	Max. distan	ce (1)		1.2 Km @ 38.4 Kbps	
<b>EMC</b> (for industrial environme	ants)	Internal ter	mination res	istance	120 Ohm (optional)	
,	ents)	Display				
DIRECTIVE 2004/108/EC		. ,			132x32 pixel	
Immunity	EN 61000-6-2	Graphic Are	a		13.2 * 48.1 mm	
Emission	EN 61000-6-4	(1) = The maximum distance depends of: number of devices connected, ty			hber of devices connected, type	

 The maximum distance depends of: number of devices connected, type of cabling, noises, etc...

DIGITAL INDICATORS



### LOOP POWERED 4 DIGIT LED PROGRAMMABLE DIGITAL INDICATOR

**GENERAL DESCRIPTION** The digital panel indicator DAT 8050 accept on the input a 4 - 20 mA current loop signal. The input current signal is used to supply the device introducing a 5 Vdc voltage drop-out on the current loop, so is not required any external supply source. The user can program the visualisation of the measure in the range from -1999 up to 9999 points in order to set the values of the physical or electrical parameter transmitted on the current loop in the desired format. The programming of the visualization is made by the buttons "SET" and "ENTER" located on the front side of the instrument.

### FEATURES

- 4÷20 mA loop powered
- Voltage Drop-out < 5V
- High accuracy and linearity

- 0.52" LED display

- Visualization configurable on the front side - Connections on removable screw terminals
- Compact case size (DIN 48 x 96 mm)
- EMC compliance CE mark
- Elvic compliance CE mark

± 0.01 % of f.s. / °C

	HOHS 2002/REEC kead-free				
<b>TEMPERATURE &amp; HUMID</b>	лтү	INPUT			
Operative temperature	-20°C +60°C	Input signal	4 ÷ 20 mA		
Storage temperature	-40°C +85°C	Voltage drop-out	< 5 V		
Humidity (not condensing)	090%	Limitation current	< 50 mA		
EMC (for industrial environm	nents)	DISPLAY			
DIRECTIVE 2004/108/EC		Type of visualization	4 digits LED		
Immunity	EN 61000-6-2	Digit height	0.52"		
Emission HOUSING	EN 61000-6-4	Range of visualization (*)	Programmable on the front side, from "-1999" up to "9999", with High: 1( on left side). Low: -1( on left side)		
Material	Noryl self-extinguishing plastic (UL94-V0)	Minimum measurable current	3.8 mA (visualization "Lo" in case of lower measure)		
Dim. (mm)	W x H x T : 48 x 96 x 74	Maximum measurable current	20.2 mA (visualization "Hi" in case of higher measure)		
Weight	about 150 g.				
		CHARACTERISTICS AN	ID PERFORMANCES		
		Reading accuracy	the better than $\pm$ 0.05 % of f.s. or $\pm$ 1 digit.		
		Resolution	4 uA		
		Response time	< 0.5 sec.		

Application areas

(\*) = default visualization : 4.00 ÷ 20.00

Thermal drift

### 3

3.5 DIGIT L	8.5 DIGIT LED DIGITAL INDICATOR						
DAT 701		The D signal In fur - DAT - DAT - DAT	ERAL DESCRIPTION AT 701 is a 3.5 digit LED digita applied to its input . nction of the parameters requ 701 V - A: measure of voltage 701 I - A: measure of voltage 701 I - A: measure of current 701 I - B: measure of current	ested in phase of order, the e signal with amplitude from e signal with amplitude from signal with amplitude from	e following versions of the $m \pm 200 \text{ mV}$ up to $\pm 20 \text{ V}$ ; m $\pm 2 \text{ V}$ up to $\pm 200 \text{ V}$ ; n $\pm 2 \text{ V}$ up to $\pm 200 \text{ V}$ ; n $\pm 200 \text{ mA}$ up to $\pm 2 \text{ mA}$ ;	easure the normalised current or voltage device are available:	
- V - Pr ra - Hi			FURES Itage or current inputs grammable decimal poir io h accuracy and linearity co-zero	nt and Attenuation	<ul> <li>Measuring freeze by command</li> <li>Options for low consumption or high brightness</li> <li>EMC compliant – CE mark</li> <li>Low profile (15 mm) DIN 36 x 72 mm housing</li> <li>Mounting on panel in according to DIN-43700 standard</li> </ul>		
		(		Application areas	volustries sport machine	Energy read business and treating	
TEMPERA	TURE & HUMI	DITY	INPUT		VISUALISATION		
Operative te	•	-10°C +60°C	Configuration	Bipolar, true diffe- rential	Scale of visualisation	2000 points (from 0 up to 1999 or from -1999 up to 0)	
Storage tem	perature ot condensing)	-40°C +85°C 0 90 %	Input impedance		Out of range visualisation	High = 1; Low = -1	
	5.			basic scale: 10 MΩ	Type of visualization	3.5 digit standard LED display (version S)	
	ndustrial enviror		Voltage	attenuated scale: 1 $M\Omega$	Display LED	3.5 digit high efficiency LED display (version H)	
	E 2004/108/EC EN 61000-6-2	•	Current	From 1 $\Omega$ up to 1K $\Omega$	Digit height	0.52 "	
Immunity Emission	EN 61000-6-2		Maximum input signal	2.5 full scale	CHARACTERISTICS	AND PERFORMANCES	
HOUSING			Common mode voltage	± 2 V referred to the power supply ground	Reading accuracy	± 0.1 % of f.s.	
Material	Self-extinguishi	ing plastic	Common mode	86 dB	Thermal drift	0.005 % of f.s./°C	
Mounting	Panel mounting	51	rejection ratio		Reading rate	3 read/second	
Dim. (mm)	W x H x T : 72 x	,	rejection ratio	50 dB @ 50 Hz	Power supply voltage	5 Vdc ± 5 %	
		. 50 X 15	Decimal point	From front side, on	Current consumption	Version S: 90 mA	
Weight about 50 g.		programming	three decades		Version H: 180 mA		

### **3.5 DIGIT LCD DIGITAL INDICATOR**

**DAT 702** 

### **GENERAL DESCRIPTION**

The DAT 702 is a 3.5 digit LCD digital indicator with high accuracy and reliability able to measure the normalised current or voltage signal applied to its input .

Signal applied to its input.
In function of the parameters requested in phase of order, the following versions of the device are available:
DAT 702 V - A: measure of voltage signal with amplitude from ± 200 mV up to ± 20 V;
DAT 702 V - B: measure of voltage signal with amplitude from ± 2 V up to ± 200 V;
DAT 702 I - A: measure of current signal with amplitude from ± 200 µA up to ± 2 mA;
DAT 702 I - B: measure of current signal with amplitude from ± 2 mA up to ± 200 mA.

### FEATURES

- Voltage or current inputs - Programmable decimal point and Attenuation
- ratio

- High accuracy and linearity - Auto-zero
- Mounting on panel in according to DIN-43700 standard



- Measuring freeze by command

- EMC compliant - CE mark

- Single power supply voltage (5 Vdc or 9 Vdc)

- Low profile (15 mm) DIN 36 x 72 mm housing



<b>TEMPERATURE &amp; HUMIDITY</b>		INPUT		VISUALISATION		
Operative te	mperature -10°C +60°C		Configuration	Bipolar, true	Type of visualization	Static polarised Liquid Cristal Display for
Storage tem	torage temperature -40°C +85°C		differential			wide angle of visualization
Humidity (no	ot condensing)	090%	Input impedance		Digit height	0.35"
,	5,		Voltago	basic scale: 10 $M\Omega$		
EMC (for in	ndustrial enviro	nments)	Voltage	attenuated scale: $1 M\Omega$		AND PERFORMANCES
DIRECTIV	DIRECTIVE 2004/108/EC		Current	From 1 Ω up to 1KΩ	Reading accuracy	± 0.1 % of f.s.
Immunity	EN 61000-6-2			1	Thermal drift	0.005 % of f.s./°C
Emission	EN 61000-6-4		Maximum input signal	2.5 full scale	Reading rate	3 read/second
EIIIISSIOII	EN 01000-0-4	4 Common mode voltage		± 2 V referred to the		Version 5 : 5 Vdc ± 5 %
HOUSING	i		3	power supply ground	Power supply voltage	
Material	Self-extinguish	ing plactic	Common mode	86 dB	, 3	Version 9 : 9 Vdc ± 10 %
	<u> </u>	31	rejection ratio			Version 5 : 3 mA
Mounting	Panel mounting	g	Normal mode rejection ratio	50 dB @ 50 Hz	Current consumption	Version 9 : 0.5 mA
Dim. (mm)	W x H x T : 72 x	< 36 x 15	Decimal point	From rear side, on three		Version 7:0.5 mix
Weight			programming	decades		



### **GENERAL DESCRIPTION**

The DAT 733 is a current loop, 3.5 digit LCD digital indicator with high accuracy and reliability. By dip-switches and potentiometers, it is possible to set the visualisation of the input measure in engineering units in a range included between 100 and 2000 points, to set the zero point between -1999 and 1999 and the position of the decimal point.

### FEATURES

- 4 ÷ 20 mA current loop self-powered
- Visualisation configurable in engineering units
- High accuracy and linearity
- Measure freezing by command

- EMC compliant CE mark
- DIN 36 x 72 mm housing
- Mounting on panel in according to DIN 43700 standard

TEMPERA	TURE & HUM	IDITY	INPUT		VISUALISATION		
Operative to	emperature	-10°C +60°C	Signal type	4÷20 mA from current loop	Type of visualization	Static polarised Liquid Crystal Display for wide angle of visualisation	
Storage tem	•	-40°C +80°C	Voltage drop	2.5 V	Digit height	0.35"	
Humidity (n	ot condensing)	0 90 %	Maximum input signal	50 mA			
EMC (for i	EMC (for industrial environments)			By dip switch and	CHARACTERISTICS	S AND PERFORMANCES	
	· · · · · · · · · · · · · · · · · · ·		Visualisation settings regulation by		Reading accuracy	±0.1 % del f.s.	
	DIRECTIVE 2004/108/EC		Zero value visualisation	potentiometers		0.005 % of f.s./°C	
Immunity	EN 61000-6-2		range	From -1999 up to 1999		3 read/second	
Emission	EN 61000-6-4	I 61000-6-4 Scales of visualisation		Scale 1 from 100 up to 700 points Scale 2 from 700 up to 1400 points	Power supply	Self-powered from the input signal	
HOUSING	i			Scale 3 from 1400 up to 2000 points		5.9.0	
Material	Self-extinguish	ing plastic	Decimal point setting				
Mounting	Panel mountin	g	From rear side, on three dec	ades by dip-switch			
Dim. (mm)	W x H x T : 72	x 36 x 39	Out of scale visualisatio	Out of scale visualisation			
Weight	About 100 g.		High: 1( on left side). Low: -1(	on left side)			

**Application areas** 



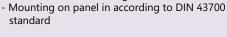
### GENERAL DESCRIPTION

The DAT 734 is a 3.5 digit LCD or LED display, digital thermometer for Pt100 2 or 3 wires sensor with high accuracy and reliability. The range of measure must be chosen in phase of order between the two options : -50 ÷ 200 °C or 0 ÷ 600 °C.

**FEATURES** 

- Input for Pt100 2 or 3 wires sensors
- Visualisation on LCD or LED display
- High accuracy
- Measure freezing by command





180 mA (high efficiency), 90 mA (standard)

10 mA

Low current consumption
 EMC compliant – CE mark

- DIN 36 x 72 mm housing

3.5 DIGIT LCD OR LED DISPLAY DIGITAL THERMOMETER FOR PT100

<b>TEMPERATURE &amp; HUMIDITY</b>		INPUT	
Operative temperature	-10°C +60°C	Signal type	2 or 3 wires Pt100 sensor
Storage temperature	-40°C +80°C	Input range	-50 ÷ 200 °C / 0 ÷ 600 °C
Relative Humidity (not condensing)	090%	Out of scale visualisation	High: 1 (on left side). Low: -1 (on left side)
<b>EMC</b> (for industrial environments)		VISUALISATION	
DIRECTIVE 2004/108/EC		Type of visualization (LCD	Static polarised Liquid Cristal Display for wide angle
Immunity	EN 61000-6-2	- Version C)	of visualization
Emission	EN 61000-6-4	Digit height	0.35"
HOUSING		Type of visualization (LED - Version D)	High efficiency LED display or standard LED display
Material	Self-extinguishing plastic	Digit height	0.52"
Mounting	Panel mounting		
Dim. (mm)	W x H x T : 72 x 36 x 39	CHARACTERISTICS AND	PERFORMANCES
Weight	About 100 g.	Reading accuracy	± 0.25 % of f.s.
		Response time	800 ms
		Power supply voltage	5 Vdc ± 5 %
		Thermal drift	0.02 % of f.s./°C

**Current consumption** 

Version D

Version C



### 3.5 DIGIT LCD OR LED DISPLAY DIGITAL THERMOMETER FOR THERMOCOUPLE



### **GENERAL DESCRIPTION**

The DAT 735 is a 3.5 digit LCD or LED display, digital thermometer for Thermocouple sensor type E, K, J, N, S and T with high accuracy and reliability.

### FEATURES

- Input for Thermocouple sensors type E, K, J, N, S and T Visualisation on LCD or LED display

**Application areas** 

- High accuracy
- Measure freezing by command

CE VIER CONSTRUCTION

- Low current consumption
- EMC compliant CE mark
- DIN 36 x 72 mm housing

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VISUALISATION

- Mounting on panel in according to DIN-43700 standard

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<b>TEMPERATURE &amp; HUMIDITY</b>					
Operative te	-10°C +60°C				
Storage temp	perature	-40°C +80°C			
Humidity (not condensing)		090%			
EMC (for industrial environments)					
DIRECTIVE 2004/108/EC					
Immunity	EN 61000-6-2				
Emission	EN 61000-6-4				
HOUSING					
Material	Self-extinguishing plastic				
Mounting	Panel mounting				
Dim. (mm)	W x H x T : 72 x 36 x 39				
Weight	About 100 g.				

Thermocouple type E, K, J, N, S and T		
Ranges of measure		
0 ÷ 900 °C		
0 ÷ 1200 °C		
0 ÷ 600 °C		
0 ÷ 1200 °C		
0 ÷ 1600 °C		
0 ÷ 300 °C		
High: 1 (On the left side); Low -1 (On the left side)		

			c polarised Liquid Cristal Display vide angle of visualization		
	Digit height	0.35'	'		
	Type of visualization (LED - Version D)		efficiency LED display or stan- LED display		
	Digit height	0.52'	1		
CHARACTERISTICS AND PERFORMAN			DEDEODMANICES		
ł	Reading accuracy		PERFORIVIAINCES		
			±0.25 % of f.s.		
	Cold Junction Compensation		±0.5 °C		
1	Thermal drift		0.02 % of f.s./°C		
	Response time		800 ms		
	Power supply voltage		5 Vdc ± 5 %		
J	Current consumption		Version D: 180 mA (high efficiency), 90 mA (standard)		

89

### **JAIEXEL**

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F2

FJ F4 DAT9

DATEXEL S.C

DAT9

ELECTRONIC AND CONTROL PROCESS DEVICES

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4







### **ACCESSORIES AND SOFTWARE**

### **Power Supply:**

Power Supply MEANWELL MDR-series

### Accessories / Software:

All of the DATEXEL devices configurable by PC need, for their configuraton, special software combined with communication interface between device and PC.

Configuration interface with USB INPUT (**PRODAT USB**)

The software available to configure the DATEXEL devices are the following:

- PROSOFT: configuration software for **SMART + SMART IS** series devices
- DATESOFT: configuration software for SLIM series devices
- DEV 9K: configuration software for intelligent unit DAT9000 series

### INDEX

- 92 MDR 20-12 / MDR 40-12 / MDR 60-12 / MDR 100-12 Power Supply DIN rail
- 93 MDR 20-24 / MDR 40-24 / MDR 60-24 / MDR 100-24 Power Supply DIN rail

### 94 • SOFTWARE

### PRODAT USB

Configuration interface for USB port

PROSOFT Configuration software for SMART series devices

### DATESOFT

Configuration software for SLIM series devices

### Dev 9K

Configuration software for intelligent units DAT9000 series

# ACCESSORIES AND SOFTWARE

12





ACCESSORIES AND SOFTWARE AND Power Supply MEANWELL. Devices and software with interface between devices and PC.

DIN RAIL POWER SUPPLY	DIN	RAIL	POWER	SUPPLY
-----------------------	-----	------	-------	--------

	CAIL POWER SUPPLY						
MDR-60-12			MDR-20-12				
		ROHS 2002/55/EC			Β	ROHS 2002/MS/EC	
INPUT	85264 VAC 120370 VDC		INPUT		85264 VAC		
OUTPUT	12 VDC @ 5 A		OUTPUT		12 VDC @ 1.67 A		
MDR-100-12			MDR-40-12		BCE		
	85264 VAC	2002/95/EC lead-free	INDUT	hsteldes	85264 VAC	2002/95/EC lead-free	
INPUT	120370 VDC		INPUT		120370 VDC		
OUTPUT	12 VDC @ 7.5 A		OUTPUT		12 VDC @ 3.33 A	Α	
	Ар	plication areas	undustria	to solutinachina Energy	tood business	Halor treatment	



Other devices are available on request. For more technical information log on to the website: www.meanwell.com

POWER SUPPLY

92



### DIN RAIL POWER SUPPLY

MDR-60-24	<image/>	MDR-20-24	<image/>
INPUT	85264 VAC 120370 VDC		85264 VAC 120370 VDC
OUTPUT	24 VDC @ 2.5 A	OUTPUT	24 VDC @ 1 A
MDR-100-24		MDR-40-24	
	COUSE CBCE		COULUS AND CBCE
INPUT	85264 VAC 120370 VDC		85264 VAC 120370 VDC
OUTPUT	24 VDC @ 4 A	OUTPUT	24 VDC @ 1.7 A
	Application are	as	teo estat machine Energy cool busines and treatines

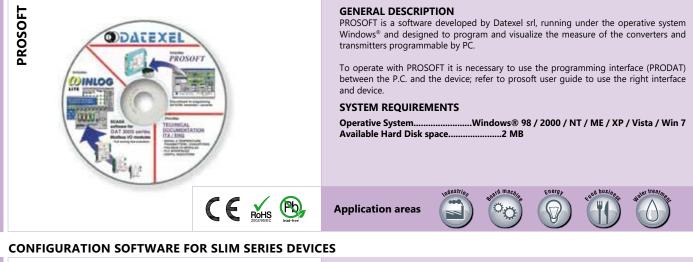
Other devices are available on request. For more technical information log on to the website: www.meanwell.com

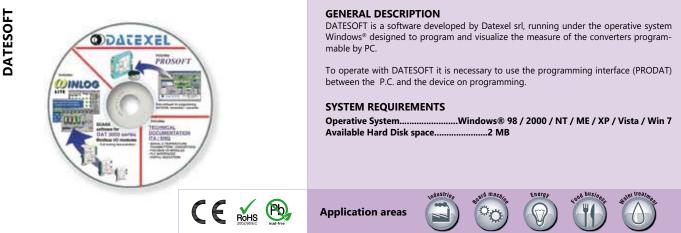
93

### **CONFIGURATION INTERFACE FOR USB PORT**

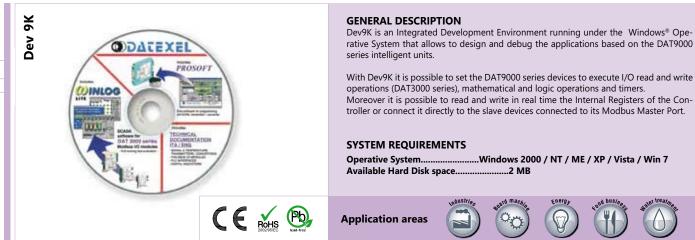


### **CONFIGURATION SOFTWARE FOR SMART SERIES DEVICES**





### **CONFIGURATION SOFTWARE FOR INTELLIGENT UNITS DAT9000 SERIES**



### DATEXEL: CONFIGURATION SOFTWARE

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22

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### **General conditions**

The sale of the products described, in this catalog, is in compliance with the requirements listed below that are considered in force after formal order will be accepted only if received by us in writing. These terms and conditions of sale (including any type of written specification, quotation and / or additional terms and conditions) will determine only the sale of all goods and services (including, without limitation, hardware, software and accessories in the Catalog and described in the proper price list). The receipt or acceptance of delivery by the buyer of any product ordered or purchased will constitute your acceptance of these terms and conditions.

### Minimum billable amount

The minimum billable amount for each order is € 150.00. For orders less than this amount, for orders more than one device for which the total amount does not exceed the minimum billable (€ 150.00) will be required to pay on delivery or bank transfer at ready goods.

### Payment terms

All payments must be made with a bank document. At the first delivery cash payment or bank transfer is required. Unless otherwise agreed, payment standards are provided within 30 calendar days from date of invoice. In case of late or missed payment, the company DATEXEL act in accordance with the provisions of Legislative Decree n. 231 October 9, 2002 as required by Directive 2000/35/EC.

### Prices

All prices quoted in the catalog list are exclusive of VAT Ex-works our factory Work Tradate (VA).

### Guarantee

All products are guaranteed against defects and manufacturing faults under current law. We don't accept returns for repair or replacement under warranty even if not previously authorized. The transportation costs of any product returned for repair or replacement even if under warranty are responsibility of the buyer. Will not be accepted unless agreed in advance, collect shipments (if received materials c / repair or replace, under warranty, shipped freight collect, the same will be rejected). The guarantee of all material we produce is valid for a period of 24 months from date of shipment. All work done under warranty will be ex works DATEXEL (VA). All repaired or replaced products are covered for the remaining period by the remaining term of the original warranty. Are not covered, by warranty products or components subject to wear.

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Unless otherwise specified, the return devices shall be subject to repair. In advance DATEXEL will provide, to the customer, by fax or e-mail, a document that will be described the type of fault / anomaly. This document, once completed, will be returned to DATEXEL that examined the content, will grant the authorization to return by providing all necessary information regarding the individual appearing on the shipping document and the method of delivery. It will care by DATEXEL, than, to inform the internal staff responsible for return acceptance. Upon receipt of the goods, authorized personnel will verify that the same is accompanied by the documents agreed during a return authorization and will repair or replace the defective product. If the goods were not accompanied by the documents mentioned above can be made to the sender rejected. Will not be repaired under warranty all products received outside the period of 24 months from the delivery date and all products that are damaged due to misuse or failure to comply with the conditions of use indicated on identification labels and related technical data sheets.

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