



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.

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ATEX94/9/EC

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

**DAT 2015 IS
DAT 2015 IS/HT**



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.

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



Application areas



SMART ATEX SERIES

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

INPUT			
Input type	Min	Max	Span min
TC CJC int./ext.			
J	-200°C	1200°C	2 mV
K	-200°C	1370°C	2 mV
S	-50°C	1760°C	2 mV
R	-50°C	1760°C	2 mV
B	400°C	1820°C	2 mV
E	-200°C	1000°C	2 mV
T	-200°C	400°C	2 mV
N	-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
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	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 ±0.1 % f.s. and ±0.2 °C
Res. Low	the higher of ±0.1 % f.s. and ±0.15 Ω
Res. High	the higher of ±0.2 % f.s. and ±1 Ω
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, 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 (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		

UNIVERSAL INTRINSICALLY SAFE ISOLATED TRANSMITTER

DAT 4035 IS DAT 4035 IS/HT



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
- 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



Application areas



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

INPUT			
Input type	Min	Max	Span min
TC CJC int./ext.			
J	-200°C	1200°C	2 mV
K	-200°C	1370°C	2 mV
S	-50°C	1760°C	2 mV
R	-50°C	1760°C	2 mV
B	400°C	1820°C	2 mV
E	-200°C	1000°C	2 mV
T	-200°C	400°C	2 mV
N	-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
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	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 ±0.1 % f.s. and ±0.2 °C
Res. Low	the higher of ±0.1 % f.s. and ±0.15 Ω
Res. High	the higher of ±0.2 % f.s. and ±1 Ω
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	Max	Span min
Direct current	4 mA	20 mA	4 mA
Reverse current	20 mA	4 mA	4 mA
Output calibration			
Current	± 7 uA		

DAT 4235 IS



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 transferred 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



Application areas



SMART ATEX SERIES

TRIP ALARMS		ISOLATION		TEMPERATURE & HUMIDITY		EX DATA	
Output type	n° 2 Relays SPDT	Input/Output	2000 Vac, 50 Hz, 1min.	Operative temperature	-20°C .. +60°C	Terminals A-B-C-D; E-F-G-H-I-J; K-L Um=250V	
Contact rating	2A , 250 Vac	Input/Supply	2000 Vac, 50 Hz, 1min.	Humidity (not condensed)	0 .. 90 %	Terminals 1-2-3-4-5-6-7	Terminals 5-6-7
Load	resistive	Supply/Output	1500 Vac, 50 Hz, 1min.			Uo = 7.8 V	Uo = 30 V
Minimum load	5Vdc, 10mA					Io = 32 mA	li = 100 mA
Max Voltage	250 Vac (50/60 Hz) 110 Vdc					Po = 140 mW	Pi = 0.75W
Isolation	coil-to-contacts: 2000Vac between contacts: 1000Vac	EMC (for industrial environments)		HOUSING		Lo = 20 mH	Li = ~0 mH
POWER SUPPLY		DIRECTIVE 2004/108/EC		Material	Self-extinguish plastic	Co = 2 uF	Ci = 24 nF
Power supply voltage	20 .. 30 Vdc	Immunity	EN 61000-6-2	Mounting	DIN Rail	Ta : -20 ÷ +55°C	
Reverse polarity protection	60 Vdc max	Emission	EN 61000-6-4	Dimensions	120 x 100 x 22.5		
				Weight	about 150 g.		

INPUT			
Input type	Min	Max	Span min
TC CJC int./ext.			
J	-200°C	1200°C	2 mV
K	-200°C	1370°C	2 mV
S	-50°C	1760°C	2 mV
R	-50°C	1760°C	2 mV
B	400°C	1820°C	2 mV
E	-200°C	1000°C	2 mV
T	-200°C	400°C	2 mV
N	-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
V	0 V	10 V	500 mV
Current mA			
	0 mA	20 mA	2 mA
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	10%
Resistance			
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 ±0.1 % f.s. and ±0.15 Ω		
Res. High	the higher of ±0.2 % f.s. and ±1 Ω		
mV, TC	the higher of ±0.1 % f.s. and ±10 uV		
V	the higher of ±0.2 % f.s. and ±2 Ω		
mA	the higher of ±0.1 % f.s. and ±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°C
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	Max	Span min
Voltage	0 V	10 V	1 V
Current	0 mA	20 mA	4 mA
Output calibration			
Current	± 7 uA		
Voltage	± 10 mV		
Output Rload resistance			
Current	< 650 Ω		
Voltage	> 4.7 KΩ		

CURRENT LOOP REPEATER / SUPPLY FOR HAZARDOUS AREA SENSORS

DAT 5030 IS



GENERAL DESCRIPTION

The DAT 5030 IS device is a galvanic isolated Intrinsically Safety Barrier, defined as "Associated Apparatus". The input can measure 0-20 mA or 4-20 mA current loops, both active or passive mode; auxiliary power supply is available to supply the current loop through the hazardous area (ZONE 0). The measure is converted in output as voltage signal (0-10V or 2-10V) or current signal (0-20mA or 4-20mA). Auxiliary power supply is available to supply the current loop connected to the output.

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

- PROTECTION MODE: II (1) G D [Ex ia] IIC - [Ex iaD] according to the Directive ATEX 94/9/EC
- Din Rail mounting suitable in according to EN-50022

Available in 4 different versions:

- DAT5030 IS A Single channel
- DAT5030 IS B Double channel
- DAT5030 IS AH Single channel HART compatible
- DAT5030 IS BH Double channel HART compatible



Application areas



POWER SUPPLY		TEMPERATURE & HUMIDITY		HOUSING	
Power supply voltage	20 ÷ 30 Vdc	Operating temperature	-20°C .. +60°C	Material	Self-extinguish plastic
Current consumption	80 mA per channel with Vaux operating	Storage temperature	-40 ÷ 85 °C	Mounting	DIN Rail
Reverse polarity protection	60 Vdc max.	Relative humidity (not condensed)	0 .. 90 %	Dimensions (mm)	120 x 100 x 22.5

ISOLATION		EMC (for industrial environments)		WEIGHT	
Input/Output	2000 Vac @ 50 Hz, 1min.	DIRECTIVE 2004/108/EC		Single CH	about 100 g.
Input/Supply	2000 Vac @ 50 Hz, 1min.	Immunity	EN 61000-6-2	Double CH	about 160 g.
Supply/Output	1500 Vac @ 50 Hz, 1min.	Emission	EN 61000-6-4		
Between channels	2000 Vac @ 50 Hz, 1min.				

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
Io = 93 mA	Ii = 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
Io = 46 mA	Ii = 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 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 B in-head mounting



Application areas



SMART ATEX SERIES

POWER SUPPLY		TEMPERATURE & HUMIDITY		EX DATA	
Power supply voltage	11 .. 30 Vdc	Operative temperature	-20°C .. +70°C -20°C .. +85°C (vers. 'HT')	Output /supply	Input
Reverse polarity protection	60 Vdc max.	Storage temperature	-40°C .. +85°C	Ui = 30 V	Uo = 6.2 V
		Humidity (not condensed)	0 .. 90 %	Ii = 100 mA	Io = 100 mA
EMC (for industrial environments)		HOUSING		Pi = 0.75 W	Po = 500 mW
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Li = 0.1 mH	Lo = 3.6 mH
Immunity	EN 61000-6-2	Dimensions	Ø= 43 mm ; H = 24 mm	Ci = 10 nF	Co = 5 uF
Emission	EN 61000-6-4	Weight	about 50 g.	T6 : -20 ÷ +55°C T5 : -20 ÷ +70°C T4 : -20 ÷ +85°C (vers. 'HT')	
		Mounting	DIN B head or bigger		

INPUT			
Input type	Min	Max	Span min
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
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	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 ±0.1 % f.s. and ±0.15 Ω		
Res. High	the higher of ±0.2 % f.s. and ±1 Ω		
mV	the higher of ±0.1 % f.s. and ±10 uV		
Input impedance			
mV	≥ 10 MΩ		
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	Max	Span min
Direct current	4 mA	20 mA	4 mA
Reverse current	20 mA	4 mA	4 mA
Output calibration			
Current	± 7 uA		

INTRINSICALLY SAFE PC CONFIGURABLE TRANSMITTER FOR UNIVERSAL INPUT

DAT 1015 IS DAT 1015 IS/HT



GENERAL DESCRIPTION

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.

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 B in-head mounting



Application areas



POWER SUPPLY		TEMPERATURE & HUMIDITY		EX DATA	
Power supply voltage	11 .. 30 Vdc	Operative temperature	-20°C .. +70°C -20°C .. +85°C (vers. 'HT')	Output /supply	Input
Reverse polarity protection	60 Vdc max.	Storage temperature	-40°C .. +85°C	Ui = 30 V	Uo = 6.2 V
		Humidity (not condensed)	0 .. 90 %	Ii = 100 mA	Io = 100 mA
EMC (for industrial environments)		HOUSING		Pi = 0.75 W	Po = 500 mW
DIRECTIVE 2004/108/EC		Material	Self-extinguishing plastic	Li = 0.1 mH	Lo = 3.6 mH
Immunity	EN 61000-6-2	Dimensions	Ø= 43 mm ; H = 24 mm	Ci = 10 nF	Co = 5 uF
Emission	EN 61000-6-4	Weight	about 50 g.	T6 : -20 ÷ +55°C T5 : -20 ÷ +70°C T4 : -20 ÷ +85°C (vers. 'HT')	
		Mounting	DIN B head or bigger		

INPUT			
Input type	Min	Max	Span min
TC CJC int./ext.			
J	-200°C	1200°C	2 mV
K	-200°C	1370°C	2 mV
S	-50°C	1760°C	2 mV
R	-50°C	1760°C	2 mV
B	400°C	1820°C	2 mV
E	-200°C	1000°C	2 mV
T	-200°C	400°C	2 mV
N	-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
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	10%
Resistance			
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 ±0.1 % f.s. and ±0.15 Ω		
Res. High	the higher of ±0.2 % f.s. and ±1 Ω		
mV, TC	the higher of ±0.1 % f.s. and ±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 (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		

**DAT 1065 IS
DAT 1065 IS/HT**



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.

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



Application areas



SMART ATEX SERIES

POWER SUPPLY		TEMPERATURE & HUMIDITY		EX DATA	
Power supply voltage	11 .. 30 Vdc	Operative temperature	-20°C .. +70°C -20°C .. +85°C (vers. 'HT')	Output /supply	Input
Reverse polarity protection	60 Vdc max.	Storage temperature	-40°C .. +85°C	Ui = 30 V	Uo = 6.2 V
ISOLATION		Humidity (not condensed)	0 .. 90 %	Ii = 100 mA	Io = 100 mA
Input - Output/Power supply	2000 Vac, 50 Hz, 1 min.	HOUSING		Pi = 0.75 W	Po = 500 mW
EMC (for industrial environments)		Material	Self-extinguishing plastic	Li = 0.1 mH	Lo = 3.6 mH
DIRECTIVE 2004/108/EC		Mounting	DIN B head or bigger	Ci = 10 nF	Co = 5 uF
Immunity	EN 61000-6-2	Dimensions (mm)	Ø = 43 mm ; H = 24 mm	T6 : -20 ÷ +55°C T5 : -20 ÷ +70°C T4 : -20 ÷ +85°C (vers. 'HT')	
Emission	EN 61000-6-4	Weight	about 90 g.		

INPUT			
Input type	Min	Max	Span min
TC CJC int./ext.			
J	-200°C	1200°C	2 mV
K	-200°C	1370°C	2 mV
S	-50°C	1760°C	2 mV
R	-50°C	1760°C	2 mV
B	400°C	1820°C	2 mV
E	-200°C	1000°C	2 mV
T	-200°C	400°C	2 mV
N	-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
Potentiometer (Nominal value)	0 Ω	200 Ω	10%
	200 Ω	500 Ω	10%
	0.5 KΩ	2 KΩ	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 ±0.1 % f.s. and ±0.15 Ω		
Res. High	the higher of ±0.2 % f.s. and ±1 Ω		
mV, TC	the higher of ±0.1 % f.s. and ±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
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ELECTRONIC AND CONTROL PROCESS DEVICES

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



Application areas

