ELECTRONIC AND CONTROL PROCESS DEVICES

DATEXEL

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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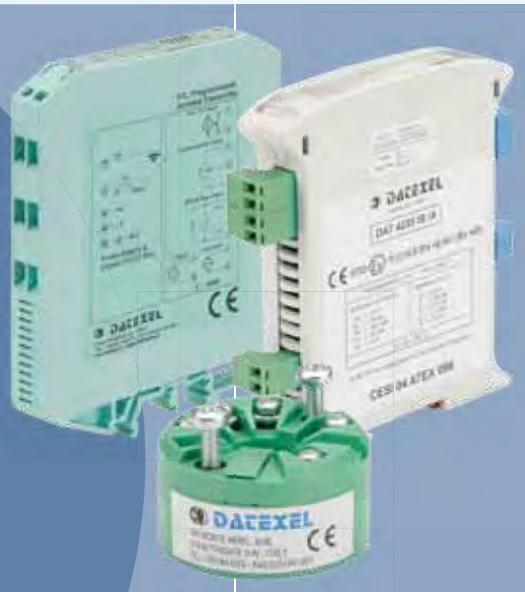
SMART ATEX SERIES

ATEX94/9/EC

03



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

Industries · Energy · Water treatment · Petrochemical offshore

POWER SUPPLY	
Power supply voltage	11 .. 30 Vdc
Reverse polarity protection	60 Vdc max.

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +70°C **-20°C .. +85°C (vers. 'HT')**
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

HOUSING	
Material	Self-extinguishing plastic
Dimensions (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

EX DATA	
Output /supply	**Input**
Ui = 30 V	Uo = 6.2 V
Ii = 100 mA	Io = 100 mA
Pi = 0.75 W	Po = 500 mW
Li = 0.1 mH	Lo = 3.6 mH
Ci = 10 nF	Co = 5 uF
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

Industries · Energy · Water treatment · Petrochemical offshore

POWER SUPPLY	
Power supply voltage	11 .. 30 Vdc
Reverse polarity protection	60 Vdc max.

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +70°C **-20°C .. +85°C (vers. 'HT')**
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

HOUSING	
Material	Self-extinguishing plastic
Dimensions (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

EX DATA	
Output /supply	**Input**
Ui = 30 V	Uo = 6.2 V
Ii = 100 mA	Io = 100 mA
Pi = 0.75 W	Po = 500 mW
Li = 0.1 mH	Lo = 3.6 mH
Ci = 10 nF	Co = 5 uF
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 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**

Application areas

Industries · Energy · Water treatment · petrochemical offshore

TRIP ALARMS	
Output type	n° 2 Relays SPDT
Contact rating	2A , 250 Vac 2A , 30 Vdc
Load	resistive
Minimum load	5Vdc, 10mA
Max Voltage	250 Vac (50/60 Hz) 110 Vdc
Isolation	coil-to-contacts: 2000Vac between contacts: 1000Vac

POWER SUPPLY	
Power supply voltage	20 .. 30 Vdc
Reverse polarity protection	60 Vdc max

ISOLATION	
Input/Output	2000 Vac, 50 Hz, 1min.
Input/Supply	2000 Vac, 50 Hz, 1min.
Supply/Output	1500 Vac, 50 Hz, 1min.

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

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +60°C
Humidity (not condensed)	0 .. 90 %

HOUSING	
Material	Self-extinguish plastic
Mounting	DIN Rail
Dimensions	120 x 100 x 22.5
Weight	about 150 g.

EX DATA	
Terminals A-B-C-D; E-F-G-H-I-J; K-L Um=250V	
Terminals 1-2-3-4-5-6-7	Terminals 5-6-7
Uo = 7.8 V	Uo = 30 V
Io = 32 mA	Ii = 100 mA
Po = 140 mW	Pi = 0.75W
Lo = 20 mH	Li = ~0 mH
Co = 2 uF	Ci = 24 nF
Ta : -20 ÷ +55°C	

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

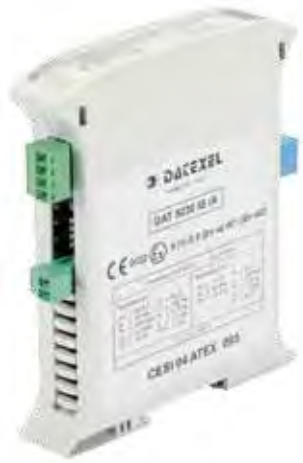
INPUT	
Input impedance	
TC, mV	>= 10 MΩ
V	>= 1 MΩ
mA	<= 50 Ω
Linearity	
TC	± 0.2 % f.s.
RTD	± 0.1 % f.s
Line resistance influence	
TC, mV,V	<=0.8 uV/Ohm
RTD 3-wires	0.05 %/Ω (50 Ω balanced max.)
RTD 4-wires	0.005 %/Ω (100 Ω balanced max.)
RTD excitation current	
Typical	0.350 mA
CJC comp.	± 0.5°C
Thermal 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	
Power supply voltage	20 ÷ 30 Vdc
Current consumption	80 mA per channel with Vaux operating
Reverse polarity protection	60 Vdc max.

TEMPERATURE & HUMIDITY	
Operating temperature	-20°C .. +60°C
Storage temperature	-40 ÷ 85 °C
Relative humidity (not condensed)	0 .. 90 %

HOUSING	
Material	Self-extinguish plastic
Mounting	DIN Rail
Dimensions (mm)	120 x 100 x 22.5

ISOLATION	
Input/Output	2000 Vac @ 50 Hz, 1min.
Input/Supply	2000 Vac @ 50 Hz, 1min.
Supply/Output	1500 Vac @ 50 Hz, 1min.
Between channels	2000 Vac @ 50 Hz, 1min.

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

WEIGHT	
Single CH	about 100 g.
Double CH	about 160 g.

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

POWER SUPPLY	
Power supply voltage	11 .. 30 Vdc
Reverse polarity protection	60 Vdc max.

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +70°C **-20°C .. +85°C (vers. 'HT')**
Storage temperature	-40°C .. +85°C
Humidity (not condensed)	0 .. 90 %

EX DATA	
Output /supply	**Input**
Ui = 30 V	Uo = 6.2 V
Ii = 100 mA	Io = 100 mA
Pi = 0.75 W	Po = 500 mW
Li = 0.1 mH	Lo = 3.6 mH
Ci = 10 nF	Co = 5 uF

T6 : -20 ÷ +55°C
T5 : -20 ÷ +70°C
T4 : -20 ÷ +85°C (vers. 'HT')

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

HOUSING	
Material	Self-extinguishing plastic
Dimensions	Ø= 43 mm ; H = 24 mm
Weight	about 50 g.
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

Industries · Energy · Water treatment · Petrochemical offshore

POWER SUPPLY	
Power supply voltage	11 .. 30 Vdc
Reverse polarity protection	60 Vdc max.

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +70°C **-20°C .. +85°C (vers. 'HT')**
Storage temperature	-40°C .. +85°C
Humidity (not condensed)	0 .. 90 %

EX DATA	
Output /supply	**Input**
Ui = 30 V	Uo = 6.2 V
Ii = 100 mA	Io = 100 mA
Pi = 0.75 W	Po = 500 mW
Li = 0.1 mH	Lo = 3.6 mH
Ci = 10 nF	Co = 5 uF
T6 : -20 ÷ +55°C T5 : -20 ÷ +70°C **T4 : -20 ÷ +85°C (vers. 'HT')**	

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

HOUSING	
Material	Self-extinguishing plastic
Dimensions	Ø= 43 mm ; H = 24 mm
Weight	about 50 g.
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

POWER SUPPLY	
Power supply voltage	11 .. 30 Vdc
Reverse polarity protection	60 Vdc max.

ISOLATION	
Input - Output/Power supply	2000 Vac, 50 Hz,1 min.

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

TEMPERATURE & HUMIDITY	
Operative temperature	-20°C .. +70°C **-20°C .. +85°C (vers. 'HT')**
Storage temperature	-40°C .. +85°C
Humidity (not condensed)	0 .. 90 %

HOUSING	
Material	Self-extinguishing plastic
Mounting	DIN B head or bigger
Dimensions (mm)	Ø = 43 mm ; H = 24 mm
Weight	about 90 g.

EX DATA	
Output /supply	**Input**
Ui = 30 V	Uo = 6.2 V
Ii = 100 mA	Io = 100 mA
Pi = 0.75 W	Po = 500 mW
Li = 0.1 mH	Lo = 3.6 mH
Ci = 10 nF	Co = 5 uF

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
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	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
Min. output value	about 3.6 mA
Response time (10÷90% of f.s.)	about 400 ms

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