ELECTRONIC AND CONTROL PROCESS DEVICES

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.

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SLIM SERIES

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SLIM series Temperature and signal converters

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

DAT4530

GENERAL DESCRIPTION

The universal isolated converter DAT 4530 is able to measure and linearise voltage, current and resistance signals, potentiometers and the standard thermocouples and Sensors with, if required, the cold junction compensation, the wires compensation.
For mV, V and mA input it is possible to set an option for the fast sampling (option HS) or to extract the square root of the measured signal (option SQRT). In function of programming, the measured values are converted in a current or voltage signal on the two outputs.
Moreover an output contact is available as trip alarm.
The device guarantees high accuracy and performances stability both versus time and temperature.

FEATURES

- Universal configurable input for: mV, TC, RTD, Res, Potentiometer, V and mA
- Two outputs configurable in current or voltage
- Trip alarm
- Configurable by dip-switch or PC
- High accuracy
- On-field reconfigurable
- Galvanic isolation among all the ways
- EMC compliant – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

Application areas

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

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°C .. +60°C
Storage temperature	-40°C .. +85°C
Humidity (not condensed)	0 .. 90 %

CURRENT CONSUMPTION	
Current output	90 mA max.
Voltage output	30 mA max.

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

ALARM TRIP	
Contact	SPST
Max Load (resistive):	
Voltage	48 V (ac/dc)
Current	0.4 A

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

INPUT			
Input type	**Min**	**Max**	**Span min**
TC (CJC int./ext.)			
J	-200°C	1200°C	100°C
K	-200°C	1300°C	100°C
S	0°C	1750°C	400°C
R	0°C	1750°C	400°C
B	0°C	1850°C	400°C
E	-200°C	1000°C	100°C
T	-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
	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	the higher of ±0.1 % and ±12 uV		
RTD	the higher of ±0.1 % and ±0.2°C		
Res.	the higher of ±0.1 % and ±0.15		
Potentiometer	± 0.05 % f.s.		
Volt	the higher of ±0.1 % and ± 2 mV		
mA	the higher of ±0.1 % and ± 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.
mV, V, mA	± 0.05 % f.s.
Input impedance	
TC, mV	>= 10 MΩ
mA	~22 Ω
Sensor excitation current	
RTD,Res	400 uA
Voltage Aux.	>18 V @ 20 mA
Line resistance influence (1)	
TC, mV	<=0.8 uV/Ohm
RTD 3 wires	0.05%/Ω (50 Ω max balanced)
RTD 4 wires	0.005%/Ω (100 Ω max balanced)
Thermal drift (1)	
Full scale	± 0.01 % / °C
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 mA	
Burn-out values			
Max. output value		22 mA or 11 V	
Min. output value		0 mA or -0.6 V	
Output load Resistance - Rload			
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		30 mA max	
Response time (10÷ 90% of F.S)		about 400 ms	
		100 ms (opt. HS)	

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

DAT 4531 A

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.

FEATURES

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

Application areas

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

CURRENT CONSUMPTION	
Current output	35 mA max.
Voltage output	20 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
TC (CJC int./ext.)			
J	-200°C	1200°C	100°C
K	-200°C	1300°C	100°C
S	0°C	1750°C	400°C
R	0°C	1750°C	400°C
B	0°C	1850°C	400°C
E	-200°C	1000°C	100°C
T	-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
Input calibration (1)			
mV, TC	> ± 0.1 % f.s. and ± 12 uV		
Linearity (1)			
TC	± 0.2 % f.s.		
mV	± 0.1 % f.s.		
Input impedance (1)			
TC, mV	>= 10 MΩ		

Line resistance influence (1)	
TC, mV	<=0.8 uV/Ohm
Thermal drift (1)	
Full scale	± 0.01% / °C
CJC	± 0.01% / °C
CJC compensation	± 0.5°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 11 V		
Min. output value	0 mA or -0.6 V		
Output load Resistance - Rload			
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.)

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

DAT 4531 B

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.

FEATURES

- Configurable input for RTD and resistance
- Configurable output in current or voltage
- Configurable by dip-switch or PC
- 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

Application areas

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

CURRENT CONSUMPTION	
Current output	35 mA max.
Voltage output	20 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
RTD (2, 3 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 wires)	0 Ω	500 Ω	50 Ω
	0 Ω	2000 Ω	50 Ω
Calibration (1)			
RTD	the higher of ±0.1 % f.s. and ±0.2°C		
Low Res.	the higher of ±0.1 % f.s. and ±0.15 Ω		
High Res.	the higher of ±0.2 % f.s. and ± 1 Ω		
Linearity (1)			
RTD	± 0.1 % f.s.		
Sensor excitation current			
RTD, Res	500 uA		
Line resistance influence (1)			
RTD 3 wires	0.05%/Ω (50 Ω max balanced)		
Thermal drift (1)			
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 Resistance - Rload			
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.)

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

DAT 4531 C

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
- 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

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	35 mA max.
Voltage output	20 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
PTC			
KTY81-210	-55°C	150°C	50°C
KTY81-220	-55°C	150°C	50°C
KTY84-130	-40°C	300°C	50°C
KTY84-150	-40°C	300°C	50°C
NTC			
Coster 10K	-10°C	100°C	50°C
Coster 1K	-30°C	40°C	25°C
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Calibration (1)			
PTC, NTC	the higher of ±0.1 % f.s. and ±0.2°C		
Potentiometer	± 0.05 % f.s.		
Linearity (1)			
PTC, NTC	± 0.1 % f.s.		
Sensor excitation current			
PTC,NTC	500 uA		
Thermal drift (1)			
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 11 V	
Min. output value		0 mA or -0.6 V	
Output load Resistance - Rload			
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.)

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

DAT 4531 D

GENERAL DESCRIPTION
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.
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
- 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

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	35 mA max.
Voltage output	20 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
Voltage	0 V	10 V	1V
Current	0 mA	20 mA	1 mA
Calibration (1)			
Volt	the higher of ±0.1 % f.s. and ± 2 mV		
mA	the higher of ±0.1 % f.s. and ± 6 uA		
Linearity (1)			
V, mA	± 0.05 % f.s.		
Input impedance			
Volt	>= 1 MΩ		
Current	<= 50 Ω		
Thermal drift (1)			
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 Resistance - Rload			
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) referred to the input Span (difference between max. and min.)

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

DAT 4532 A

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.

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
- 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

Application areas

Industries, Board machine, Energy, Food business, Water treatment

POWER SUPPLY	
Power supply voltage	18 .. 30 Vdc
Rever. polarity protection	60 Vdc max
CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.
ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min
TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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
HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT (2 CHANNELS)			
Input type	**Min**	**Max**	**Span min**
TC (CJC int./ext.)			
J	-200°C	1200°C	100°C
K	-200°C	1300°C	100°C
S	0°C	1750°C	400°C
R	0°C	1750°C	400°C
B	0°C	1850°C	400°C
E	-200°C	1000°C	100°C
T	-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
Input calibration (1)			
mV, TC	the higher of ±0.1 % f.s. and ±12 uV		
Linearity (1)			
TC	± 0.2 % f.s.		
mV	± 0.1 % f.s.		
Input impedance			
TC, mV	>= 10 MΩ		

Line resistance influence (1)	
TC, mV	<=0.8 uV/Ohm
Thermal drift (1)	
Full scale	± 0.01 % / °C
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		
Burn-out values			
Max. output value	22 mA or 10.6 V		
Min. output value	0 mA or -0.6 V		
Output load Resistance - Rload			
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.)

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

DAT 4532 B

GENERAL DESCRIPTION

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
- 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

Application areas

Industries, Board machine, Energy, Food business, Water treatment

POWER SUPPLY	
Power supply voltage	18 .. 30 Vdc
Rever. polarity protection	60 Vdc max
CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.
ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min
TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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
HOUSING	
Material	Self-extinguishing plastic
Dim. (mm)	W x L x H : 90 x 112 x 12.5
Weight	about 90 g.

INPUT (2 CHANNELS)			
Input type	**Min**	**Max**	**Span min**
RTD (2, 3 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 wires)	0 Ω	500 Ω	50 Ω
	0 Ω	2000 Ω	50 Ω
Calibration (1)			
RTD	the higher of ±0.1 % f.s. and ±0.2°C		
Low Res.	the higher of ±0.1 % f.s. and ±0.15 Ω		
High Res.	the higher of ±0.2 % f.s. and ± 1 Ω		
Linearity (1)			
RTD	± 0.1 % f.s.		
Sensor excitation current			
RTD, Res	500 uA		
Line resistance influence (1)			
RTD 3 wires	0.05 %/Ω (50 Ω max balanced)		
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 Resistance - Rload			
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.)

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

DAT 4532 C

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
- 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

Application areas

Industries · Board machine · Energy · Food business · Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT (2 CHANNELS)			
Input type	**Min**	**Max**	**Span min**
PTC			
KTY81-210	-55°C	150°C	50°C
KTY81-220	-55°C	150°C	50°C
KTY84-130	-40°C	300°C	50°C
KTY84-150	-40°C	300°C	50°C
NTC			
Coster 10K	-10°C	100°C	50°C
Coster 1K	-30°C	40°C	25°C
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Calibration (1)			
PTC, NTC	the higher of ±0.1 % f.s. and ±0.2 °C		
Potentiometer	± 0.05 % f.s.		
Linearity (1)			
PTC, NTC	± 0.1 % f.s.		
Sensor excitation current			
PTC,NTC	500 uA		
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 Resistance - Rload			
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.)

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

DAT 4532 D

GENERAL DESCRIPTION

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

- Configurable input for voltage and current
- Configurable output in current or voltage
- Double channel in the same enclosure
- Configurable by dip-switch or PC
- Two independent channels
- 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

Application areas

Industries · Board machine · Energy · Food business · Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT (2 CHANNELS)			
Input type	**Min**	**Max**	**Span min**
Voltage	0 V	10 V	1 V
Current	0 mA	20 mA	1 mA
Calibration (1)			
Volt	the higher of ±0.1 % f.s. and ± 2 mV		
mA	the higher of ±0.1 % f.s. and ± 6 uA		
Linearity (1)			
V, mA	± 0.05 % f.s.		
Input impedance			
Volt	>= 1 MΩ		
Current	<= 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 Resistance - Rload			
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) referred to the input Span (difference between max. and min.)

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

DAT 4540

GENERAL DESCRIPTION

The isolated frequency converter DAT 4540 is able to measure, up to 20 KHz, the frequency of TTL, Namur, NPN, PNP and Tachometer digital signals. In function of programming, the measured values are converted in a current or voltage signal. Moreover two relays are available in order to be programmed as trip alarm (version "-R"). For the Namur input is continuously checked the integrity of the sensor; in case of fault (short circuit or interruption), on the transistor output is generated an alarm.
The device guarantees high accuracy and performances stability both versus time and temperature.

FEATURES

- Measure of the frequency for the following digital contacts input: Namur, TTL, NPN, PNP, Tachometer, Volt
- Configurable output as current or voltage
- Double optional trip alarm
- Fault alarm condition for Namur sensor
- Configurable by Dip-switch or PC
- High accuracy
- On-field reconfigurable
- Galvanic isolation among all ways
- EMC compliant – CE mark
- Suitable for DIN rail mounting in according to EN-50022 and EN-50035 standards

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	90 mA max.
Voltage output	30 mA max.
(+ 10mA for each relay output active)	

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

HOUSING	
Material	Self-extinguishing plastic
DAT 4540 (mm)	WxLxH: 90 x 112 x 12.5
DAT 4540-R (mm)	WxL xH: 90 x 112 x 22.5
Weight	about 90 g.

INPUT	
Namur (DIN 19234)	
Low level Trig.	< 1.2 mA
High level Trig.	> 2.1 mA
Voltage Aux.	8.2 V – 8 mA
Impedance	~ 1000 Ohm
Interruption Alarm	< 0.2 mA
Short Circuit Alarm	> 7.0 mA
TTL	
Low level Trig.	< 0.8 V
High level Trig.	> 2.0 V
Impedance	> 20 KOhm
PNP	
Low level Trig.	< 4.0 V
High level Trig.	> 7.0 V
Voltage Aux.	17 V – 20 mA
Impedance	~ 2.2 KOhm
Tachometer	
Low level Trig.	< -50 mV
High level Trig.	> +50 mV
Impedance	> 100 KOhm
Voltage (programmable)	
Level Trigger	0.05 V ÷ 7.0 V
Voltage Aux.	5 ÷ 17 V @ 20 mA
Impedance	> 20 KOhm

Frequency	0.1 Hz ÷ 20 KHz
Sample Time	< 50ms + period

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	
Voltage Aux.		>12V @ 20 mA	
Burn-out values			
Max. output value		22 mA or 11 V	
Min. output value		0 mA or -0.6 V	
Output load Resistance - Rload			
Current output		< 500 Ω	
Voltage output		> 10 KΩ	
Short circuit current		30 mA max	

RELAY OUTPUTS	
Relay Outputs (Only for version "-R") N° 2 SPDT	
Max. load (Resistive)	250 Vac, 2A
Isolation between terminals	1000 Vac max
Transistor Output	
Max. load (Resistive)	30 Vdc, 100mA

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

DAT 4631 A

GENERAL DESCRIPTION

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.

FEATURES

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

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
TC (CJC int./ext.)			
J	-200°C	1200°C	100°C
K	-200°C	1300°C	100°C
S	0°C	1750°C	400°C
R	0°C	1750°C	400°C
B	0°C	1850°C	400°C
E	-200°C	1000°C	100°C
T	-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
Input calibration (1)			
mV, TC	the higher of ±0.1 % f.s. and ±12 uV		
Linearity (1)			
TC	± 0.2 % f.s.		
mV	± 0.1 % f.s.		
Input impedance (1)			
TC, mV	>= 10 MΩ		

Line resistance influence (1)	
TC, mV	<=0.8 uV/Ohm
Thermal drift (1)	
Full scale	± 0.01% / °C
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	
Burn-out values			
Max. output value		22 mA or 10.6 V	
Min. output value		0 mA or -0.6 V	
Output load Resistance - Rload			
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.)

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

DAT 4631 B

GENERAL DESCRIPTION

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.

FEATURES

- Configurable input for RTD and resistance
- Double output configurable in current or voltage
- Configurable by dip-switch or PC
- 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

Application areas

Industries · Board machine · Energy · Food business · Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
RTD (2, 3 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 wires)	0 Ω	500 Ω	50 Ω
	0 Ω	2000 Ω	50 Ω
Calibration (1)			
RTD	the higher of ±0.1 % f.s. and ±0.2 °C		
Low Res.	the higher of ±0.1 % f.s. and ±0.15 Ω		
High Res.	the higher of ±0.2 % f.s. and ± 1 Ω		
Linearity (1)			
RTD	± 0.1 % f.s.		
Sensor excitation current			
RTD, Res	500 uA		
Line resistance influence (1)			
RTD 3 wires	0.05 %/Ω (50 Ω max balanced)		
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 Resistance - Rload			
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.)

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

DAT 4631 C

GENERAL DESCRIPTION

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

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

Application areas

Industries · Board machine · Energy · Food business · Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
PTC			
KTY81-210	-55°C	150°C	50°C
KTY81-220	-55°C	150°C	50°C
KTY84-130	-40°C	300°C	50°C
KTY84-150	-40°C	300°C	50°C
NTC			
Coster 10K	-10°C	100°C	50°C
Coster 1K	-30°C	40°C	25°C
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %
Calibration (1)			
PTC, NTC	the higher of ±0.1 % f.s. and ±0.2 °C		
Potentiometer	± 0.05 % f.s.		
Linearity (1)			
PTC, NTC	± 0.1 % f.s.		
Sensor excitation current			
PTC,NTC	500 uA		
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 Resistance - Rload			
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.)

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

DAT 4631 D

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
- Configurable by dip-switch or PC
- 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

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT			
Input type	**Min**	**Max**	**Span min**
Voltage	0 V	10 V	1 V
Current	0 mA	20 mA	1 mA
Calibration (1)			
Volt	the higher of ±0.1 % f.s. and ± 2 mV		
mA	the higher of ±0.1 % f.s. and ± 6 uA		
Linearity (1)			
V, mA	± 0.05 % f.s.		
Input impedance			
Volt	>= 1 MΩ		
Current	<= 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 Resistance - Rload			
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) referred to the input Span (difference between max. and min.)

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

DAT 4632 D

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
- On-field reconfigurable
- Galvanic isolation among all the ways
- EMC compliant – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035

Application areas: Industries, Board machine, Energy, Food business, Water treatment

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

CURRENT CONSUMPTION	
Current output	55 mA max.
Voltage output	25 mA max.

ISOLATION	
Among all the ways	1500 Vac, 50 Hz, 1 min

TEMPERATURE AND HUMIDITY	
Operative temperature	-20°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

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

INPUT (2 CHANNELS)			
Input type	**Min**	**Max**	**Span min**
Voltage	0 V	10 V	1 V
Current	0 mA	20 mA	1 mA
Calibration (1)			
Volt	the higher of ±0.1 % f.s. and ± 2 mV		
mA	the higher of ±0.1 % f.s. and ± 6 uA		
Linearity (1)			
V, mA	± 0.05 % f.s.		
Input impedance			
Volt	>= 1 MΩ		
Current	<= 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 Resistance - Rload			
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) referred to the input Span (difference between max. and min.)