

Analogisignaalien valvontareleet 2-kanavaisina ja myös LED-näytöllä

DA4-luettelo Internet Interface

Superkapea leveys 12,5mm

Näytöllinen leveys 27,5mm

Perusmalli leveys 20,5mm

	Termoelementit N -210...+1300 °C	Jänniteviestit
	J -210...+1200 °C RTD-anturit ja vastukset	0 mV...+50 mV
	K -210...+1370 °C Pt100 -50...+400 °C	0 mV...+100 mV
	R -50...+1760 °C Pt1000 -200...+200 °C	0 mV...+250 mV
	S -50...+1760 °C Ni100 -60...+180 °C	0 mV...+1000 mV
	B +400...+1820 °C Ni1000 -60...+150 °C	0 V...+10 V
Moduuleilla valvottavia signaaleita ohessa	Va -210...+1000 °C	0...250 mA-viestit
	T -210...+400 °C	0 mA...20 mA

Datexelin valvontareleet ontarkoitettu valvomaan suoraan esim. lämpötila- ja V- ja mA-viestejä. Mahdollista on valvoa myös mV-luokan signaaleja. Kaikissa malleissa, jolloin on helppo toteuttaa mittauksen yläraja- ja alarajavalvonnot. Rajat aseta koskettimin mallista riippuen 250VAC 2A tai 125VAC 0,5A. Raja-arvot asetetaan trimmereillä ja asettelualue on 2-98% mitta-alueesta - LED-näytöllä näytettyä. Releiden toimintasuunta raja-arvon ylityksissä valitaan DIP-kytkimillä voidaan asettaa lähtöreleen toiminnan hystereesi alueella 0,5-10% raja-arvosta. lähtöreleen viive voidaan asettaa alueelle 0-25s. Valvontareleiden käyttö-

DA4luettelo

Tuoteryhmät

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**Huomaa: Luettelosta GE3 löytyvät
näille valvontareileille
sopivat lämpötila-anturit**

FEATURES

- Input for Voltage and Current
- Two independent thresholds
- Type of alarm programmable by dip-switch as high or low
- Galvanic isolated among the ways
- Trip level and hysteresis adjustable by potentiometers
- Delay time adjustable by potentiometer from 1 up to 6 sec.
- Two relays SPDT (Form C)
- Good accuracy and linearity
- EMC compliant – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



GENERAL DESCRIPTION

The economic trip amplifier DAT 5024E is able to accept on its input normalised voltage and current signals coming from both active and passive current loops. Both the trips can be configured as high or low alarm; it is possible to regulate the trip level values by the potentiometers THR1 and THR2 located on the front side of the device.

The isolation between input and power supply is 1500 Vac. The isolation between input and the contacts of relays is 1000 Vac.

The isolations eliminate the effects of all ground loops eventually existing and allows the use of the device in heavy environmental conditions found in industrial applications.

The DAT 5024E is in compliance with the standard 89/336/EEC on the Electromagnetic Compatibility.

It is housed in a plastic enclosure of 12.5 mm thickness suitable for DIN rail mounting in compliance with EN-50022 and EN-50035 standards.

OPERATIVE INSTRUCTIONS

The device DAT 5024E must be powered by a direct voltage included in the 18 V to 30 V range. The power supply must be applied between the terminals Q (+Vdc) and R (GND). The green led PWR switched on shows the right state of supply of the device.

The input voltage signal must be applied between the terminals N (IN V) and P (GND1), while the input current signal must be applied between the terminals O (IN I) and P (GND1) for active loops (passive input), between the terminals M (+Vaux) and O (IN I) for the passive loops (active input).

The relays connections must be made as shown in the section " Relays".

The input range is programmable by the dip-switches SW2. To configure it, refer to the section "Configuration tables".

To configure, calibrate and install the device refer to the section "Configuration and calibration DAT5024E" and "Installation instructions".

The red led RL1 and RL2 switched on show the state of energizing of the relays relative to the trip 1 (RL1) and the trip 2 (RL2).

THRESHOLDS OPERATION

For the high alarm the relay goes on when the input signal is higher than the trip level and after the delay time. The relay goes off only when the input signal is lower than the trip level minus the hysteresis value or when reaches the minimum value of the input scale and after the delay time.

For the low alarm the relay goes on when the input signal is lower than the trip level and after the delay time. The relay goes off only when the input signal is higher than the trip level plus the hysteresis value or when reaches the maximum value of the input scale and after the delay time.

TECHNICAL SPECIFICATIONS (Typical at 25 °C and in nominal conditions)	
INPUT	
Input signal	Voltage: 0÷10 V, 0÷5 V, 2÷10 V, 1÷5 V. Current: 0÷20 mA, 4÷20 mA.
Auxiliary supply (Vaux)	18 V min @ 20 mA
Input impedance	Voltage: >/= 1 Mohm Current: </= 50 ohm
OUTPUT	
Relays	N° 2 SPDT (Form C)
Maximum operating voltage (on resistive load)	125 Vac, 30 Vdc
Maximum operating current (on resistive load)	0.5 A @ 125 Vac, 1 A @ 30 Vdc
Maximum switching capacity (on resistive load)	62.5 VA, 30 W
Isolation between coil and contacts	1000 Vac
Isolation between contacts	1000 Vac
PERFORMANCE	
Calibration error	± 0.1 % of f.s.
Thermal drift	0.02 % of full scale/°C
Warm-up time	3 minutes
Power supply voltage (*)	18÷30 Vdc
Current consumption	110 mA max. with both the relays energized
Trip value regulation	Configurable from 2 up to 96 % of f.s.
Delay time value regulation (Delay)	Configurable from 1 up to 6 sec.
Hysteresis value regulation	Configurable from 1 up to 9.5 % of f.s.
Electromagnetic Compatibility (EMC)	Immunity: EN 61000-6-2; Emission : EN 61000-6-4.
Isolation between Input and Power supply	1500 Vac, 50 Hz, 1min.
Operating temperature	-20 ÷ 60 °C
Storage temperature	-40 ÷ 70 °C
Relative humidity (not condensed)	0 ÷ 90%
Weight	about 90 g
(*) internally protected against reverse polarity.	

CONFIGURATION AND CALIBRATION DAT 5024E

1) Referring to the tables below, set the input range by the dip-switches SW2.

2) Referring to the unit of measure of the input scale, calculate the voltage value corresponding to the trip level using the next formula:

V1 & V2 = [(trip value - min) * 2.5 V] / (max-min) where:

- trip value: trip level value expressed in the same unit measure of the input;
- min: minimum value of the input range in use;
- max: maximum value of the input range in use.

The two trip level values relative to the channels 1 and 2 are independent from each other.

The obtained value, proportional with the input scale, must be included between 0 and 2.5 V (*).

3) Connect a multimeter, selected as Volt, between the test points TP1 (trip 1), TP2 (trip 2) and REF (negative reference). By the potentiometers "THR1" and "THR2", adjust the measures in order to obtain the calculated values in the step 2.

4) Set the type of alarm (high or low) by the dip-switches "SW1" (1 & 3).

5) Adjust the hysteresis and delay time values by the potentiometers TRH and TRD, measuring the voltage between the test-points TP3 (delay) and TP4 (hysteresis) referring to the test point REF.

Delay and hysteresis are the same for both the trips.

It is possible to double the delay selected by the dip-switches SW1 (2 & 4).

Ex of configuration: input 4÷20 mA, trip 1 as max at 16 mA, trip 2 as min at 8 mA.

$$V1 = [(16\text{mA} - 4\text{mA}) * 2.5\text{V}] / (20\text{mA} - 4\text{mA}) = 1.875\text{V};$$

$$V2 = [(8\text{mA} - 4\text{mA}) * 2.5\text{V}] / (20\text{mA} - 4\text{mA}) = 0.625\text{V};$$

Dip-switch SW1 settings : Off, Off, On, Off

Dip-switch SW2 settings : Off, On, Off, On

CONFIGURATION TABLES

TRIP SETTINGS

OUT	SW1	1
THR1 (MIN)	●	
THR1 (MAX)		

DELAY SETTINGS

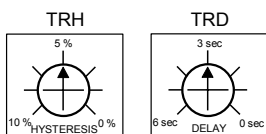
OUT	SW1	2	4
DELAY x 1			
DELAY x 2	●	●	

INPUT SIGNAL

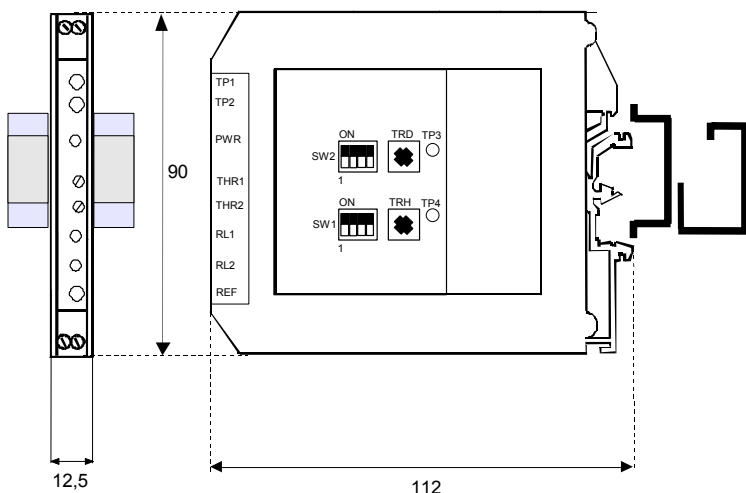
INPUT	SW2	1	2	3	4
0 ÷ 10 V				●	
2 ÷ 10 V					●
0 ÷ 5 V		●		●	
1 ÷ 5 V		●			●
0 ÷ 20 mA			●	●	
4 ÷ 20 mA			●		●

● =DIP-SWITCH: " ON"

HYSTERESIS AND DELAY REGULATIONS



DIMENSIONS (mm) & REGULATIONS



INSTALLATION INSTRUCTIONS

The DAT 5024E device is suitable for fitting to DIN rails in the vertical position. For optimum operation and long life follow these instructions:

When the devices are installed side by side it may be necessary to separate them by at least 5 mm in the following case:

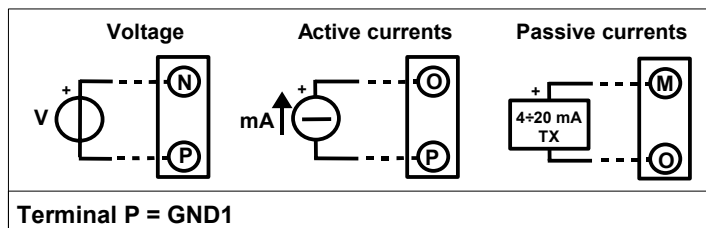
- If panel temperature exceeds 45°C and high power supply voltage (>27Vdc)
- Use of the input auxiliary supply for current input (terminal M).

Make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel. Install the device in a place without vibrations.

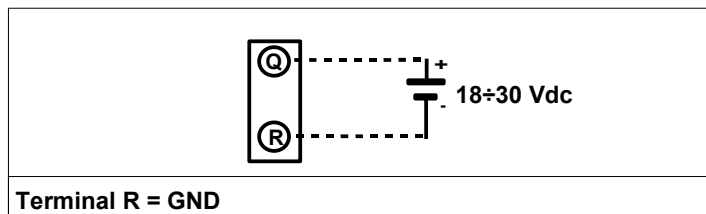
Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters, etc...) and to use shielded cable for connecting signals.

CONNECTIONS

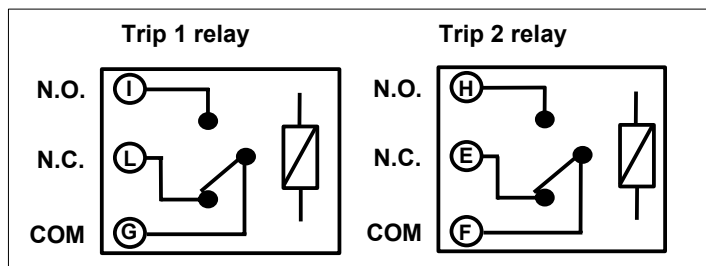
INPUT



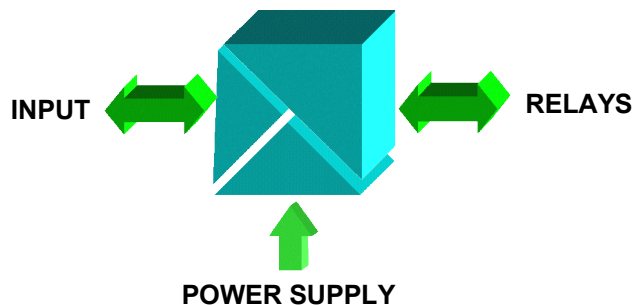
POWER SUPPLY



RELAYS



ISOLATIONS STRUCTURE

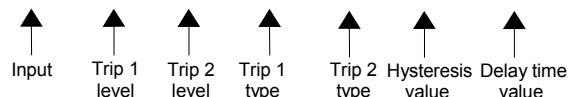


HOW TO ORDER

The DAT5024E is provided as requested on the Customer's order.

ORDER CODE:

DAT5024E 0÷10 V - 5 V - 7 V - MAX - MIN - 5 % - 1 sec.



FEATURES

- Available analog inputs: RTD, TC, Voltage, Resistance and Current
- Two independent threshold programmable as both high alarm or one high and one low alarm
- Galvanic isolated among the three ways
- Trip level and hysteresis adjustable by potentiometer
- Delay time adjustable by potentiometer up to 25 sec.
- Two relays SPDT 125Vac, 0.5 A
- High accuracy
- Low profile
- EMC compliant – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN50035



GENERAL DESCRIPTION

The converter DAT 5024/L 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 potentiometers also the values of the hysteresis level and delay time.

The isolation between input and power supply is 2000 Vac.

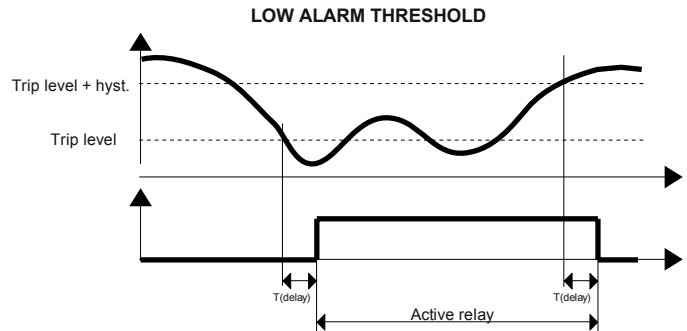
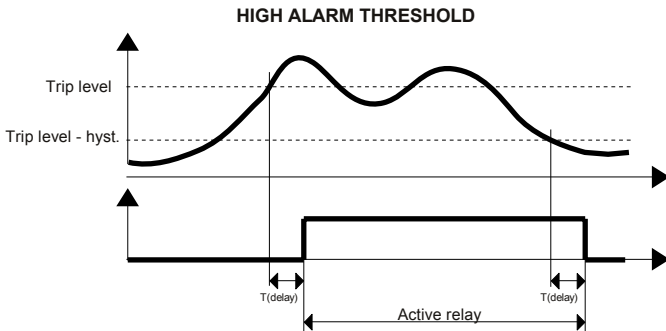
The isolation between input and contacts of relays is 2000 Vac.

The isolation between power supply and contacts of relays is 1000 Vac.

The isolations eliminate the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications. The DAT 5024/L is in compliance with the standard 89/336/EEC on the Electromagnetic Compatibility.

It is housed in a plastic enclosure of 12.5 mm thickness suitable for DIN rail mounting in compliance with EN-50022 and EN-50035 standards.

THRESHOLD OPERATION



For the high alarm the relay goes on when the input signal is higher than the trip level and after the delay time. The relay goes off only when the input signal is lower than the trip level minus the hysteresis value or when reaches the minimum value of the input scale and after the delay time.

For the low alarm the relay goes on when the input signal is lower than the trip level and after the delay time. The relay goes off only when the input signal is higher than the trip level plus the hysteresis value or when reaches the maximum value of the input scale and after the delay time.

TECHNICAL SPECIFICATIONS (Typical at 25 °C and in nominal conditions)

Input type (*)	Min	Max	Input calibration (1)	Relays Output	
Voltage			±0.1%	Relays Output	N° 2 SPDT
50 mV	0 mV	+50 mV	Linearity (1)	Contact rating	0.5 A , 125 Vac
100 mV	0 mV	+100 mV	mV, V, mA		1 A , 30 Vdc
250 mV	0 mV	+250 mV	Tc, RTD	Minimum load	10 mVdc, 10 uA
1000 mV	0 mV	+1000 mV	Input impedance	Max Voltage	125 Vac (50/60 Hz)
10 V	0 V	+10 V	mV, Tc	Isolation	110 Vdc
Thermocouple			V		between contacts: 1000Vac
J	-210 °C	+1200 °C	mA	Power supply	
K	-210 °C	+1370 °C		Power supply voltage	18 .. 32 Vdc
R	-50 °C	+1760 °C	RTD excitation current	Current consumption	80 mA max @ 24 Vdc
S	-50 °C	+1760 °C	Typ. 0.6 mA	Reverse polarity protection	60 Vdc max
B	+400 °C	+1820 °C	Thermal drift (1)		
E	-210 °C	+1000 °C	Full Scale	Isolation voltage	
T	-210 °C	+400 °C	CJC comp.	Input – power supply	2000 Vac 50 Hz, 1 min.
N	-210 °C	+1300 °C	± 0.5 °C	Input – contact of relays	2000 Vac 50 Hz, 1 min.
RTD			CJC Thermal drift (1)	Power supply – contact of relay	1000 Vac 50 Hz, 1 min.
Pt100	-50 °C	+400 °C	Full Scale		
Pt1000	-200 °C	+200 °C	± 0.02 °C/ °C	Temperature & humidity	
Ni100	-60 °C	+180 °C	Line resistance influence (1)	Operative temperature	-20°C .. +60°C
Ni1000	-60 °C	+150 °C	mV, Tc	Storage temperature	-40°C .. +85°C
Resistance			Auxiliary supply	Humidity (not condensed)	0 .. 90 %
250 Ω	0 Ω	250 Ω	(only for mA input) > 18 V @ 20 mA	Housing	
2 KΩ	0 Ω	2000 Ω	(1) referred to input Span (difference between max. and min. values)	Material	Self-extinguish plastic
Current			Threshold	Mounting	DIN rail in compliance with
20 mA	0 mA	20 mA	Adjustable from 2 up to 98% f.s.		EN-50022 and EN-50035
			Hysteresis	Weight	about 100 g.
			Adjustable from 0.5 up to 10 % f.s.	EMC	
			Delay	Immunity	EN 61000-6-2
			Adjustable up to 25 sec.	Emission	EN 61000-6-4

* Specify in phase of order

OPERATIVE INSTRUCTIONS

The converter DAT 5024/L must be powered by a direct voltage included in the 18 V to 32 V range. The power supply must be applied between the terminals Q (+V) and R (-). The green led PWR switched on shows the right state of supply of the device, while the leds RL1 and RL2 switched on show the state of energizing of the relays relative to the threshold 1 (RL1) and the threshold 2 (RL2). The input connections must be made as shown in the section " Analog input connections", in function of the device ordered; specify in phase of order the type of input and the input range.

The relays connections must be made as shown in the section " Contacts of relays"

To configure and calibrate the device refer to the section "Configuration".

To install the device refer to the section "Installation instructions".

CONFIGURATION

The trip levels are adjusted by the potentiometers "THR1" and "THR2" located on the front of the device; the delay time and the hysteresis value are the same for both the thresholds. Follow next steps in order to set the correct trip level value.

1- Refer to the section " Technical Specification ", table "Input type" and find the input type in use.

2 – Refer to the unit of measure of the input scale and calculate the voltage value corresponding to the threshold value using the next formula:

$$V = (\text{trip value} - \text{min}) / (\text{max} - \text{min})$$

where:

min: minimum value of the input type in use;

max: maximum value of the input type in use;

trip value: threshold value expressed in the unit measure of input.

The obtained value, proportional with the input scale, must be included between 0 and 1 V (*).

3 – Connect a multimeter, selected as Volt, between the test points TP1 and REF. By the potentiometer "THR1", adjust the measure in order to obtain the calculated value in the step 2; with such operation the threshold 1 value has been adjusted. Repeat the same operation for the threshold 2 using the potentiometer "THR2" and the test point TP2 (referred to the test point REF).

4 – Open the door located on the side of device.

5 – Set the type of alarm (high or low) for the threshold 2 by the DIP-switch "SW1".

6 – Adjust the delay time value (**) by the dedicated potentiometer as indicated in the section "Dimensions and regulations".

7 – Adjust the hysteresis(***) level by the dedicated potentiometer as indicated in the section "Dimensions and regulations".

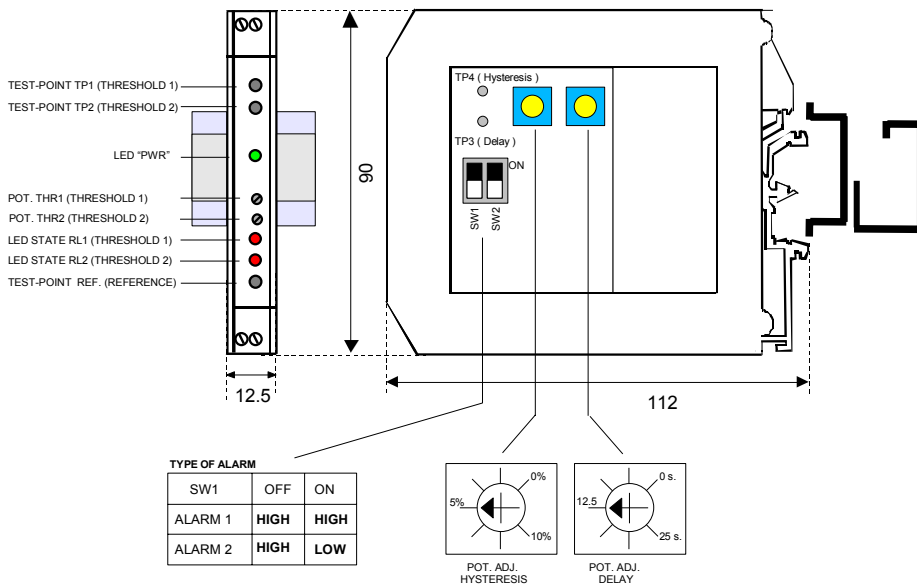
NOTES:

(*)The maximum threshold value is internally limited at 98 %, the minimum at 2 %; the values of de-energizing for the relays "Trip value + hysteresis" and "Trip value – hysteresis" are limited to not get over the limits of the scale of measure.

(**) The delay time value is the same for the energizing and de-energizing of the relay; the minimum time between these operation it's about 1 second (time to have a stable measure) .

(***)The minimum hysteresis level value is internally limited at 0.5 %.

DIMENSIONS (mm) & REGULATIONS



INSTALLATION INSTRUCTIONS

The DAT 5024/L device is suitable for fitting to DIN rails in the vertical position. For optimum operation and long life follow these instructions:

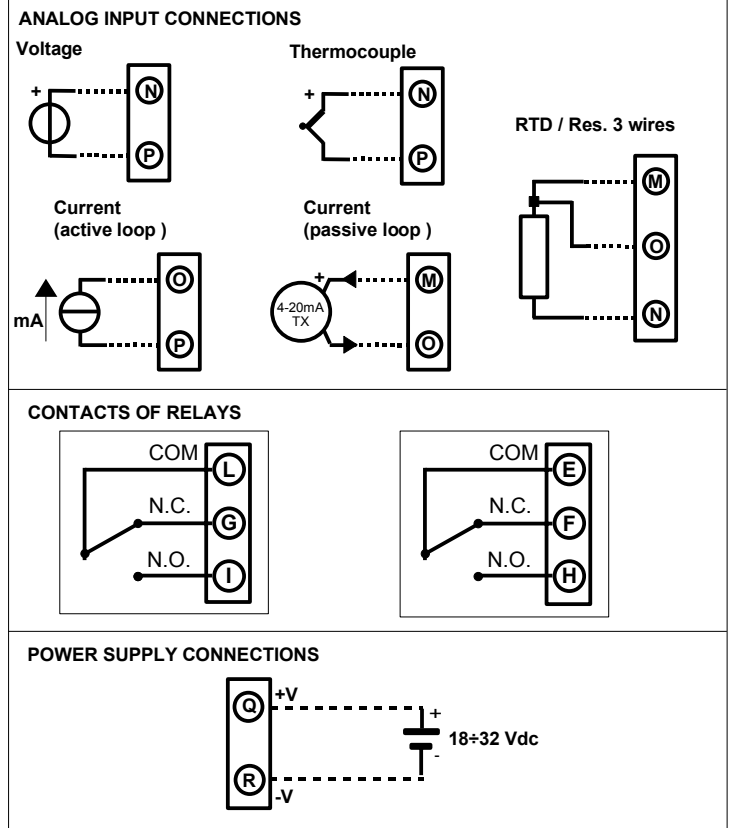
When the devices are installed side by side it may be necessary to separate them by at least 5 mm in the following case:

- If panel temperature exceeds 45°C and high power supply voltage (>27Vdc)
- Use of the input auxiliary supply for current input (terminal M).

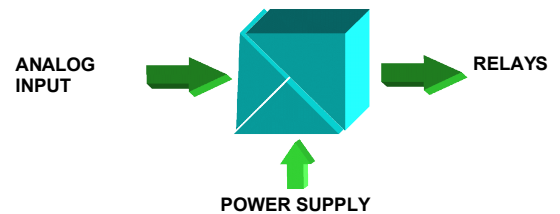
Make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel. Install the device in a place without vibrations.

Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters, etc...) and to use shielded cable for connecting signals.

CONNECTIONS



ISOLATION STRUCTURE

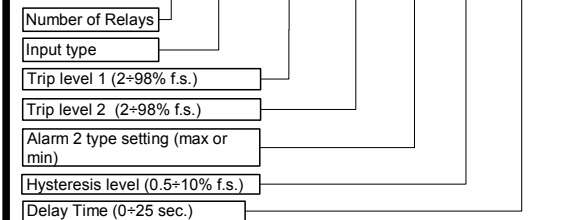


HOW TO ORDER

In phase of order it is necessary to specify the input type (refer to the " Technical Specifications " section) and the number of relays. The DAT 5024/L is provided as requested on the Customer's order.

ORDER CODE

DAT 5024/L - 2 - Pt100 - 100°C - 50°C - MIN - 5% - 2 sec.



DAT 5024/D



FEATURES

- Available analog inputs: RTD, TC, Voltage, Resistance and Current
- Two independent threshold programmable as both high alarm or one high and one low alarm
- Galvanic isolated among the three ways
- Trip level and hysteresis adjustable by potentiometer
- Delay time adjustable by potentiometer up to 25 sec.
- Two relays SPDT 250 Vac, 2A
- High accuracy
- 3 digits display for the visualisation of the trip level
- EMC compliant – CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN50035

GENERAL DESCRIPTION

The converter DAT 5024/D 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 potentiometers. It is possible to check it by the test-points or the 3 digits display located on the front of the device; to simplify this operation, on the display the trip level appears in the same format of the input analog signal.

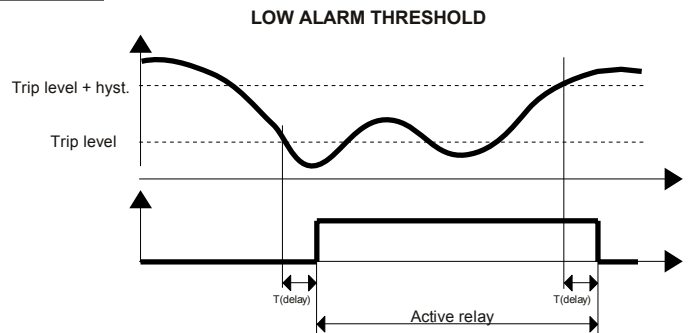
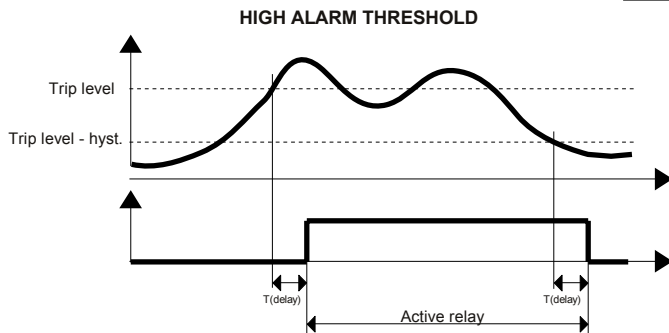
It is possible to adjust by potentiometers also the values of the hysteresis level and delay time.

The isolation between input and power supply is 2000 Vac. The isolation between input and contacts of relays is 2000 Vac. The isolation between power supply and contacts of relays is 1500 Vac.

The isolations eliminate the effects of all ground loops eventually existing and allows the use of the converter in heavy environmental conditions found in industrial applications. The DAT 5024/D is in compliance with the standard 89/336/EEC on the Electromagnetic Compatibility.

It is housed in a plastic enclosure of 27.5 mm thickness suitable for DIN rail mounting in compliance with EN-50022 and EN-50035 standards.

THRESHOLD OPERATION



For the high alarm the relay goes on when the input signal is higher than the trip level and after the delay time. The relay goes off only when the input signal is lower than the trip level minus the hysteresis value or when reaches the minimum value of the input scale and after the delay time.

For the low alarm the relay goes on when the input signal is lower than the trip level and after the delay time. The relay goes off only when the input signal is higher than the trip level plus the hysteresis value or when reaches the maximum value of the input scale and after the delay time.

TECHNICAL SPECIFICATIONS (Typical at 25 °C and in nominal conditions)

Input type (*)	Min	Max	Input calibration (1)	Relays Output	N° 2 SPDT
Voltage			±0.1%	Contact rating	2A , 250 Vac
50 mV	0 mV	+50 mV	Linearity (1)	2 A , 30 Vdc	
100 mV	0 mV	+100 mV	mV, V, mA	Minimum load	5 Vdc, 10mA
250 mV	0 mV	+250 mV	Tc, RTD	Max Voltage	250 Vac (50/60 Hz)
1000 mV	0 mV	+1000 mV	Input impedance	Isolation	110 Vdc
10 V	0 V	+10 V	mV, Tc		coil-to-contacts: 2000Vac
			V		between contacts: 1000Vac
			mA	Power supply	
Thermocouple			> 1 MΩ	Power supply voltage	18 .. 32 Vdc
J	-210 °C	+1200 °C	> 100 KΩ	Current consumption	110 mA max @ 24 Vdc
K	-210 °C	+1370 °C	< 50 Ω	Reverse polarity protection	60 Vdc max
R	-50 °C	+1760 °C	RTD excitation current		
S	-50 °C	+1760 °C	Typ. 0.6 mA	Isolation voltage	
B	+400 °C	+1820 °C	Thermal drift (1)	Input – power supply	2000 Vac 50 Hz, 1 min.
E	-210 °C	+1000 °C	Full Scale	Input – contact of relays	2000 Vac 50 Hz, 1 min.
T	-210 °C	+400 °C	± 0.02 % / °C	Power supply – contact of relay	1000 Vac 50 Hz, 1 min.
N	-210 °C	+1300 °C	CJC comp.		
			± 0.5 °C	Temperature & humidity	
RTD			CJC Thermal drift (1)	Operative temperature	-20°C .. +60°C
Pt100	-50 °C	+400 °C	Full Scale	Storage temperature	-40°C .. +85°C
Pt1000	-200 °C	+200 °C	± 0.02 °C/ °C	Humidity (not condensed)	0 .. 90 %
Ni100	-60 °C	+180 °C	Line resistance influence (1)	Housing	
Ni1000	-60 °C	+150 °C	mV, Tc	Material	Self-extinguish plastic
			< 0.8 uV/Ohm	Mounting	DIN rail in compliance with
Resistance			Auxiliary supply		EN-50022 and EN-50035
250 Ω	0 Ω	250 Ω	(only for mA input) > 18 V @ 20 mA	Weight	about 125 g.
2 KΩ	0 Ω	2000 Ω	(1) referred to input Span (difference between max. and min. values)	EMC	
Current			Threshold	Immunity	EN 61000-6-2
20 mA	0 mA	20 mA	Adjustable from 2 up to 98% f.s.	Emission	EN 61000-6-4
			Hysteresis		
			Adjustable from 0.5 up to 10 % f.s.		
			Delay		
			Adjustable up to 25 sec.		
			Display		
			3 digits (h=10 mm)		

* Specify in phase of order

OPERATIVE INSTRUCTIONS

The converter DAT 5024/D must be powered by a direct voltage included in the 18 V to 32 V range. The power supply must be applied between the terminals Q (+V) and R (-). The leds RL1 and RL2 switched on show the state of energizing of the relays relative to the threshold 1 (RL1) and the threshold 2 (RL2). The input connections must be made as shown in the section " Analog input connections", in function of the device ordered; specify in phase of order the type of input and the input range.

The relays connections must be made as shown in the section " Contacts of relays"

To configure and calibrate the device refer to the section "Configuration".

To install the device refer to the section "Installation instructions".

CONFIGURATION

By the 3 digits display, it is possible to visualize the trip level in the same format of the input signal; the resolution of the measure depends from the input range; set the dip-switch on the front side to the position 1 or 2 to visualize the trip level relative to the threshold in use. The trip levels are adjusted by the potentiometers "THR1" and "THR2" located on the front of the device; the delay time and the hysteresis value are the same for both the thresholds. Follow next steps in order to set the correct trip level value.

1- Refer to the section " Technical Specification ", table "Input type" and find the input type in use.

2 – Refer to the unit of measure of the input scale and calculate the voltage value corresponding to the threshold value using the next formula:

$$V = (\text{trip value} - \text{min}) / (\text{max} - \text{min})$$

where:

min: minimum value of the input type in use;

max: maximum value of the input type in use;

trip value: threshold value expressed in the unit measure of input.

The obtained value, proportional with the input scale, must be included between 0 and 1 V (*).

3 – Connect a multimeter, selected as Volt, between the test points TP1 and REF. By the potentiometer "THR1", adjust the measure in order to obtain the calculated value in the step 2; with such operation the threshold 1 value has been adjusted. Repeat the same operation for the threshold 2 using the potentiometer "THR2" and the test point TP2 (referred to the test point REF).

4 – Open the door located on the side of device.

5 – Set the type of alarm (high or low) for the threshold 2 by the DIP-switch "SW1".

6 – Adjust the delay time value (**) by the dedicated potentiometer as indicated in the section "Dimensions and regulations".

7 – Adjust the hysteresis(***) level by the dedicated potentiometer as indicated in the section "Dimensions and regulations".

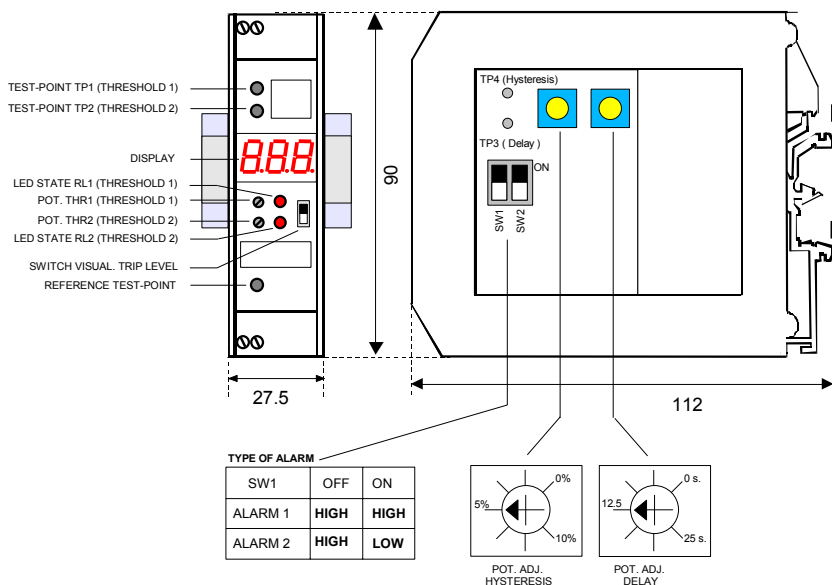
NOTES:

(*)The maximum threshold value is internally limited at 98 %, the minimum at 2 %; the values of de-energizing for the relays "Trip value + hysteresis" and "Trip value – hysteresis" are limited to not get over the limits of the scale of measure.

(**) The delay time value is the same for the energizing and de-energizing of the relay; the minimum time between these operation it's about 1 second (time to have a stable measure) .

(***)The minimum hysteresis level value is internally limited at 0.5 %.

DIMENSIONS (mm) & REGULATIONS



INSTALLATION INSTRUCTIONS

The DAT 5024/D device is suitable for fitting to DIN rails in the vertical position. For optimum operation and long life follow these instructions:

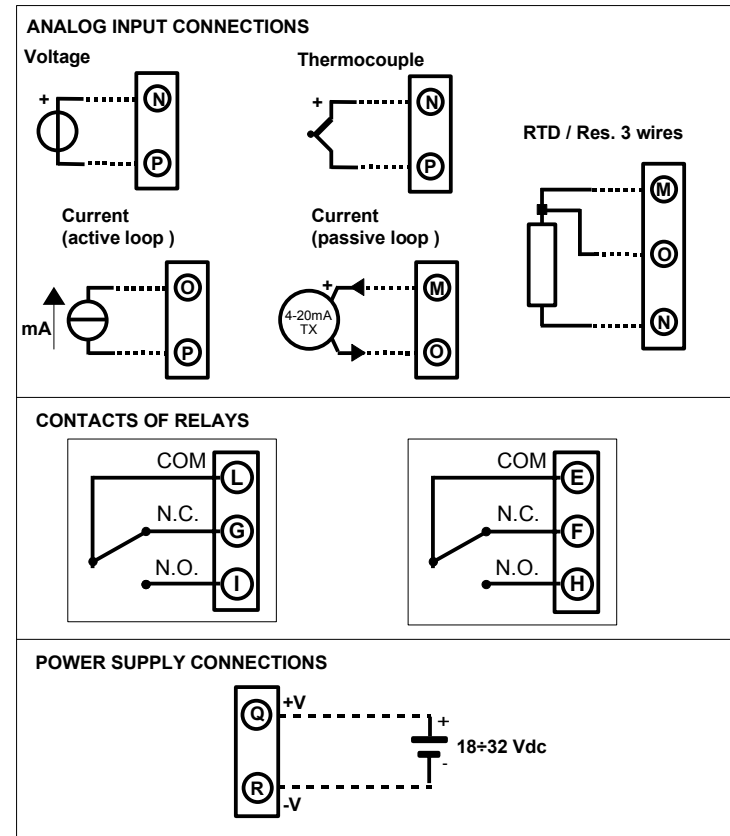
When the devices are installed side by side it may be necessary to separate them by at least 5 mm in the following case:

- If panel temperature exceeds 45°C and high power supply voltage (>27Vdc)
- Use of the input auxiliary supply for current input (terminal M).

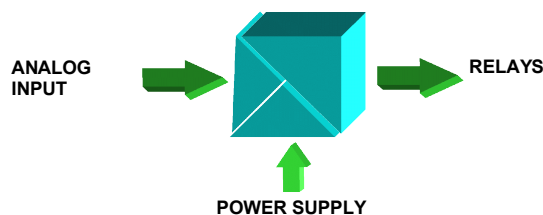
Make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel. Install the device in a place without vibrations.

Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters, etc...) and to use shielded cable for connecting signals.

CONNECTIONS



ISOLATION STRUCTURE



HOW TO ORDER

In phase of order it is necessary to specify the input type (refer to the " Technical Specifications " section) and the number of relays. The DAT 5024/D is provided as requested on the Customer's order.

ORDER CODE

DAT 5024/D - 2 - Pt100 - 100°C - 50°C - MIN - 5% - 2 sec.

Number of Relays	2
Input type	Pt100
Trip level 1 (2÷98% f.s.)	100°C
Trip level 2 (2÷98% f.s.)	50°C
Alarm 2 type setting (max or min)	MIN
Hysteresis level (0.5÷10% f.s.)	5%
Delay Time (0÷25 sec.)	2 sec.

■ = Requested □ = Optional