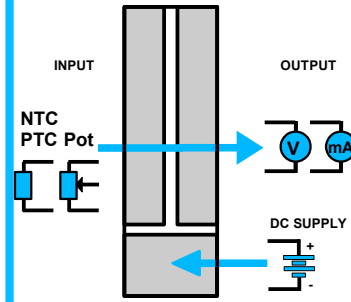




FEATURES

- 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
- UL / CE mark
- Suitable for DIN rail mounting in compliance with EN-50022 and EN-50035



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.

The programming is made by the dip-switch located in the window on the side of the enclosure. By means of dip-switches it is possible to select the input type and range and the output type without recalibrate the device.

Moreover, by Personal Computer the user can program all of the device's parameters for his own necessity.

Moreover it is available the option of alarm for signal interruption (burn-out) that allows to set the output value as high or low out of scale .

The 1500 Vac galvanic isolation on all ways (input, output and power supply) eliminates 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 4531 C is in compliance with the Directive UL 61010-1 for US market and with the Directive CSA C22.2 No 61010-1 for the Canadian market.

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.

USER INSTRUCTIONS

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

It is possible to configure the converter on field by dip-switch or Personal Computer as shown in the section " Programming ". The configuration by dip-switches can be made also if the device is powered (note: after the configuration the device takes some seconds to provide the right output measure).

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

INPUT				OUTPUT				POWER SUPPLY	
Input type	Min	Max	Min.Span	Output type	Min	Max	Min Span		
PTC				Current	0 mA	20 mA	4 mA	Power supply voltage	18 .. 30 Vdc
KTY81-210	-55°C	150°C	50°C	Voltage	0 V	10 V	1 V	Reverse polarity protection	60 Vdc max
KTY81-220	-55°C	150°C	50°C	Output resolution				Current consumption	
KTY84-130	-40°C	300°C	50°C	Current	7 uA			Current output	35 mA max.
KTY84-150	-40°C	300°C	50°C	Voltage	4 mV			Voltage output	20 mA max.
NTC				Burn-out values				ISOLATION	
Coster 10K	-10°C	100°C	50°C	Max. output value	22 mA or 10.6 V			Among all the ways	1500 Vac, 50 Hz, 1 min
Coster 1K	-30°C	40°C	25°C	Min. output value	0 mA or -0.6 V			ENVIRONMENTAL CONDITIONS	
Pot. (Rnom.< 50KΩ)	0 %	100 %	10 %	Output load Resistance - Rload				Operative Temperature	
				Current output	< 500 Ω			UL Operative Temperature	-20°C .. +60°C
				Voltage output	> 10 KΩ			Storage Temperature	-10°C .. +60°C
				Short circuit current	26 mA max.			Humidity (not condensed)	0 .. 90 %
				Response time (10+ 90%)				Maximum Altitude	2000 m
					about 500 ms			Installation	Indoor
Accuracy (1)								Category of installation	II
PTC, NTC	the higher of ±0.1% and ±0.2°C							Pollution Degree	2
Potentiometer	± 0.05 % f.s.							MECHANICAL SPECIFICATIONS	
Linearity (1)								Material	Self-extinguish plastic
PTC, NTC	± 0.1 % f.s.							IP Code	IP20
Sensor excitation current								Wiring	wires with diameter 0.8±2.1 mm ² /AWG 14-18
PTC, NTC	500 uA							Tightening Torque	0.8 N m
Thermal drift (1)								Mounting	in compliance with DIN rail standard EN-50022 and EN-50035
Full scale	± 0.01% / °C							Weight	about 90 g.
CERTIFICATIONS									
EMC (for industrial environments)									
				Immunity		EN 61000-6-2			
				Emission		EN 61000-6-4			
UL									
				US Standard		UL 61010-1			
				Canadian Standard		CSA C22.2 No 61010-1			
				CCN		NRAQ/NRAQ7			
				Typology		Open Type device			
				Classification		Industrial Control Equipment			
				File Number		E352854			

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

PROGRAMMING

CONFIGURATION BY PC

Notice: before to execute the next operations, check that the drivers of the cable CVPROG in use have been previously installed in the Personal Computer.

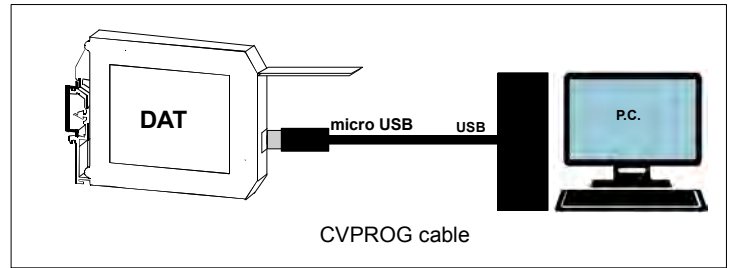
By software DATESOFT from version 2.7 it is possible to:

- set the default programming of the device;
- program the options not available with the dip-switch;
(burn-out level, CJC offset, trip alarm settings, delay on output, etc...);
- read, in real time, the input and output measures;
- follow the dip-switches configuration wizard.

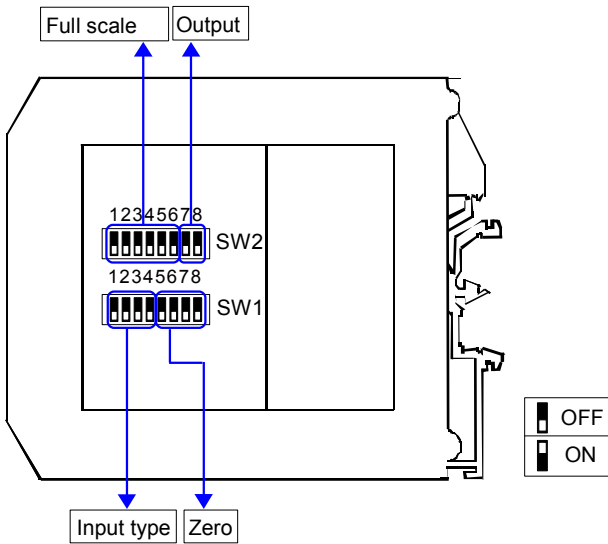
To configure the device follow the next steps:

- 1) Open the protection plastic label on the front of the device.
- 2) Connect the two plugs of cable CVPROG to the Personal Computer (USB plug) and to the device (uUSB plug) .
- 3) Run the software DATESOFT
- 4) Select the COM port in use and click on "Open COM".
- 5) Click on the icon "Program".
- 6) Set the programming data.
- 7) Click on the icon "Write" to send the programming data to the device.

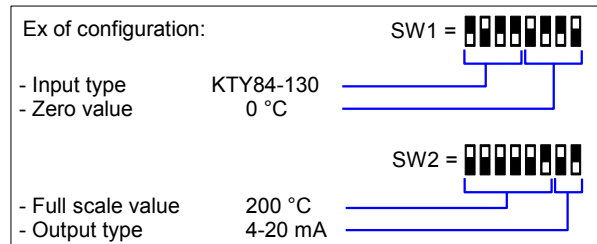
For information about DATESOFT refer to the software's user guide.



CONFIGURATION BY DIP-SWITCHES



- 1) Open the suitable door on the side of the device.
- 2) Set the input type by the dip-switch SW1 [1..4] (see TAB.1)
- 3) Set the minimum input scale value (Zero) by the dip-switch SW1 [5..8] (see TAB.3)
- 4) Set the maximum input value (Full scale) by the dip-switch SW2 [1..6] (see TAB.3)
- 5) Set the output type by the dip-switch SW2 [7..8] (see TAB.2)



NOTE:

- It is also possible to set the dip-switches using the wizard of the configuration software following the procedure described in the section "Configuration by PC" until the step 6 and clicking on "Switch".

DIP-SWITCH CONFIGURATION TABLES

TAB.1
Input type settings

SW1	1	2	3	4	
					EPROM *
					Pot
					KTY81-210 KTY81-220
					KTY84-130 KTY84-150
					Coster 10K
					Coster 1K

TAB.2
Output type settings

SW2	7	8	
			0-20 mA
			4-20 mA
			0-10 V
			0-5 V

NOTES:

* To configure the range for the input type selected (TAB.1) refer to the section of the TAB.3 on next page relative to it (ex: for Potentiometer use the table TAB.3b).

* If the dip-switches SW1 [1..4] are all set in the position 0 ("EPROM"), the device will follow the configuration programmed by PC (input type and range, output type and range and options).

* If the dip-switches SW1 [5..8] are all set in the position 0 ("Default"), the device will follow the input scale programmed by PC for the input type selected by the dip-switches SW1 [1..4]

* Eventual wrong dip-switches settings will be signalled by the blinking of the led "PWR".

TAB.3a – Settings for PTC, NTC

Zero		Full scale									
SW1 5 6 7 8		°C	SW2 1 2 3 4 5 6		°C	SW2 1 2 3 4 5 6		°C	SW2 1 2 3 4 5 6		°C
	Default			Default		75		210		370	
	-200			0		80		220		380	
	-150			5		85		230		390	
	-100			10		90		240		400	
	-50			15		95		250		425	
	-40			20		100		260		450	
	-30			25		110		270		475	
	-20			30		120		280		500	
	-10			35		130		290		525	
	0			40		140		300		550	
	5			45		150		310		600	
	10			50		160		320		650	
	20			55		170		330		700	
	30			60		180		340		750	
	50			65		190		350		800	
	100			70		200		360		850	

TAB.3b –Settings for Potentiometer

Zero		Full scale									
SW1 5 6 7 8		%	SW2 1 2 3 4 5 6		%	SW2 1 2 3 4 5 6		%	SW2 1 2 3 4 5 6		%
	Default			Default		34		66		98	
	0			5		36		68		100	
	15			6		38		70		100	
	20			8		40		72		100	
	25			10		42		74		100	
	30			12		44		76		100	
	35			14		46		78		100	
	40			16		48		80		100	
	45			18		50		82		100	
	50			20		52		84		100	
	55			22		54		86		100	
	60			24		56		88		100	
	65			26		58		90		100	
	70			28		60		92		100	
	75			30		62		94		100	
	80			32		64		96		100	

INSTALLATION INSTRUCTIONS

The 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 cases:

- If panel temperature exceeds 45°C.
- Use of high power supply value ($> 27 \text{ Vdc}$).
- Use of output current.

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.

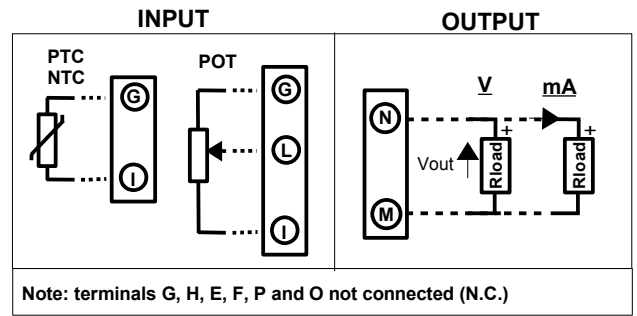
Install the device in a place without vibrations.

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.

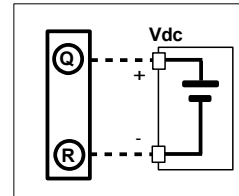
ISOLATION STRUCTURE



CONNECTIONS



POWER SUPPLY(*)

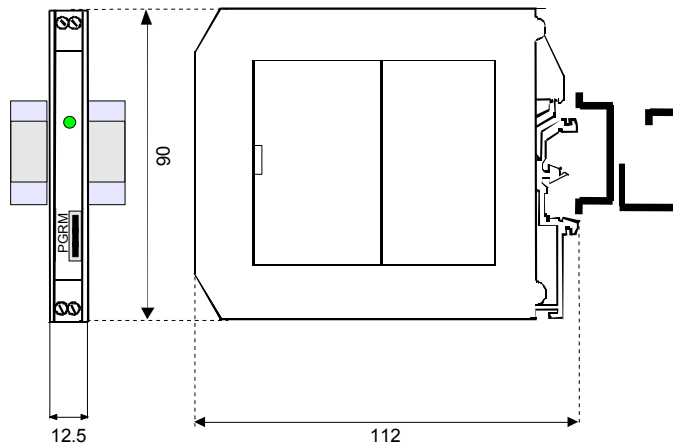


(*) Note: for UL installation the device must be powered using a power supply unit classified NEC class 2 or SELV

LIGHT SIGNALLING

LED	COLOUR	STATE	DESCRIPTION
PWR	GREEN	ON	Device powered
		OFF	Device not powered
		BLINKING	Wrong dip-switches setting

DIMENSIONS (mm)

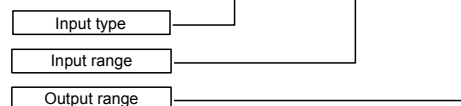


HOW TO ORDER

The device is provided as requested on the Customer's order. Refer to the section "Programming" to determine the input and output ranges. In case of the configuration is not specified, the parameters must be set by the user.

ORDER CODE EXAMPLE:

DAT 4531C / KTY84-130 / 0 ÷ 200 °C / 4 ÷ 20 mA



The symbol reported on the product indicates that the product itself must not be considered as a domestic waste. It must be brought to the authorized recycle plant for the recycling of electrical and electronic waste. For more information contact the proper office in the user's city, the service for the waste treatment or the supplier from which the product has been purchased.