

OPERATING MANUAL

Compact Current/Compact Voltage Dual Out put Transducer



Operating Instructions

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1. Read first and then



The proper and safe operation of the device assumes that the Operating Instructions are read and the safety warnings given in the various sections Mounting, Electrical Connections, Commissioning are observed.



All operations concerning installation, electrical connections and commissioning, must be carried out by qualified, skilled personnel, and national regulations for the prevention of accidents must be observed.

2. Brief description

The Transducer converts a sinusoidal AC Current or Voltage into Two load independent DC Current or a load independent DC Voltage proportional to the measured value.

The transducer outputs are galvanically isolated from the input signal and auxiliary supply.

3. Product Features

- Arithmetical mean value measurement
Calibration to RMS with sine waveform
(Average Value)
- Accuracy class 0.2
as per International Standard IEC/EN 60 688.
- Wide range Auxiliary Power Supply:
60-300 V AC/DC. or 20-40 V AC/20-60 VDC.
- Dual Isolated DC current or DC voltage outputs.
- Output Response Time < 250 ms.
- Fast and easy installation on DIN RAIL or onto a wall
or in panel using optional screw hole bracket.
- Connection Terminal: Conventional Screw type.

4. Overview of the parts

Figure 1 shows those parts of the device which are used for mounting, electrical connections and other operations described in the Operating instructions.

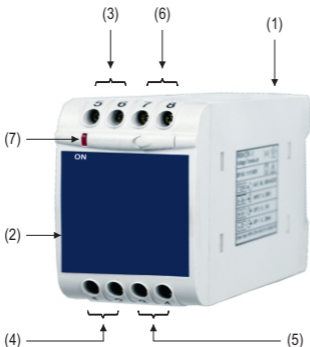


Fig. 1: Overview of the Transducer parts

- (1) Fixing Bracket
- (2) Front sticker
- (3) Input Terminals
- (4) Output-1 Terminals
- (5) Output-2 Terminals
- (6) Auxiliary supply Terminals
- (7) Red LED for Power ON indication.

5. Scope of Supply

The set of the Transducer consist of :

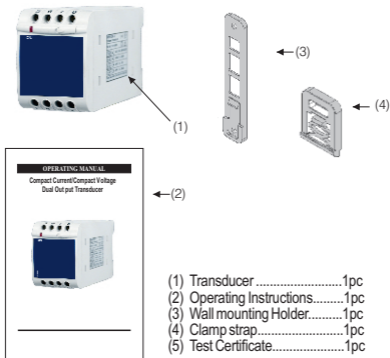


Fig. 2: Transducer Set

6. Technical Data

Measuring Input X:

Voltage Transducer :

Final value of Nominal input

$$63.5V \leq U_N \leq 500 V.$$

Voltage U_N (X2) AC RMS

Nominal Frequency F_N

50 or 60 Hz.

Nominal input Voltage burden

< 0.6 VA at U_N .

Overload Capacity:

1.2 * U_N continuously,

2 * U_N for 1 second, repeated

10 times at 10 second intervals.

Current Transducer :

Final value of Nominal input Current I_N (X2) AC RMS	1 A or 5 A.
Nominal Frequency F_N	50 or 60 Hz.
Nominal input Current burden	< 0.2VA at I_N .
Overload Capacity:	1.2 * I_N continuously, 10 * I_N for 3 second, repeated 5 times at 5 minute intervals, 20 * I_N for 3 second, repeated 5 times at 5 minute intervals, 50 * I_N for 1 second.

Measuring Output Y:

Output type	Load independent DC Voltage/Current.
Load independent DC output (Y)	0...10mA,0...20mA,2...10mA, 4...20mA,0...5V or 0...10V.
Output burden with DC current output Signal	$0 \leq R \leq 15 \text{ V/Y2}$
Output burden with DC voltage output Signal	$Y2/(2 \text{ mA}) \leq R \leq \infty$
Current limit under overload $R=0$	$\leq 1.6*Y2$ with Current output. $\leq 40 \text{ mA}$ with Voltage output.
Voltage limit under $R = \infty$	$\leq 1.6*Y2$ with Voltage output. $\leq 25 \text{ V}$ with Current output.
Residual Ripple in Output signal	$\leq 1\% \text{ pk-pk.}$
Response Time	< 250 ms.
Auxiliary Supply H/L:	
Rated operating voltage(H)	60 to 300 V AC/DC
Rated operating voltage(L)	20 to 40 VAC/20 to 60 VDC
Rated operating range of frequency	45...50...60...65 Hz
Power consumption	< 5 VA
Accuracy:(Acc. to IEC/EN 60 688)	
Accuracy class	0.2

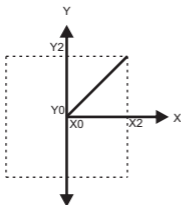
Reference conditions for Accuracy :

Ambient temperature	23°C +/- 1°C
Pre-conditioning	30 min acc. to IEC/EN 60 688
Input Variable	Rated Voltage Range /Rated Current Range.
Input waveform	Sinusoidal
Input signal frequency	50....60Hz
Auxiliary supply voltage	230 V AC/DC (High Aux.)H 24 V AC/DC (Low Aux.)L
Auxiliary supply frequency	50Hz
Output Load	$R_N = 7.5 \text{ V} / Y_2 \pm 1\%$ With DC current output signal. $R_N = Y_2 / 1 \text{ mA} \pm 1\%$ With DC voltage output signal. Acc. to IEC/EN 60 688
Miscellaneous	

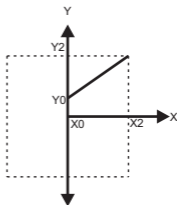
Additional Error :

Temperature influence	$\pm 0.2\% / 10^\circ\text{C}$
Influence of Variations:	As per IEC/EN 60 688 standard.

Output characteristics:



X_0 = Start value of input
 X_2 = End value of input
 U_N = Nominal input voltage



Y_0 = Start value of output
 Y_2 = End value of output
 I_N = Nominal input current

Safety:

Protection Class	II (Protection Isolated, EN 61 010)
Protection	IP 40, housing according to EN 60 529 IP 20 ,terminal according to EN 60 529
Pollution degree	2
Installation Category	III (At ≤300V), II (At >300V)
Insulation Voltage	7770V DC, Input versus outer surface. 5230V DC, Input versus all other circuits. 5230V DC, Auxiliary supply versus input and output circuits. 690V DC, Output versus output versus each other versus outer surface.

Installation Data:

Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. To UL 94, self extinguishing, non dripping, free of halogen
Mounting position	Rail mounting / wall mounting
Weight	Approx. 0.2Kg

Connection Terminal:

Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	≤ 4.0 mm ² single wire or 2 x 2.5 mm ² fine wire

Environmental:

Nominal range of use	0 °C... <u>23 °C</u> ... 45 °C (usage Group II)
Storage temperature	-40 °C to 70 °C
Relative humidity of annual mean	≤ 75%
Altitude	up to 2000 m

Ambient tests:

IEC 60 068-2-6	Vibration
Acceleration	± 2 g
Frequency range	10....150...10Hz,
Rate of frequency sweep	1 octave/minute
Number of cycles	10, in each of the three axes
IEC 60 068-2-27	Shock

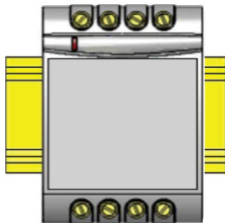
Acceleration	3 x 50g
	3 shocks in each direction
EN 60 068-2-1/-2/-3	Cold, Dry, Damp heat
IEC 61000-4-2/-3/-4/-5/-6	
EN 55 011	Electromagnetic compatibility.

7. Mounting

The Transducer can be mounted either on a top-hat rail or directly onto a wall or mounting plate.



Make sure that the ambient temperature stays within the permissible limits :
0° C and 45° C



As the front of the enclosure conforms to IP 40. The terminals of the product should be protected from liquids. Transducer should be mounted in a reasonably stable ambient temperature and where the operating

temperature is within the range 0 to 45°C . Vibration should be kept to a minimum and the product should not be mounted where it will be subjected to excessive direct sunlight.

Caution

1. In the interest of safety and functionality this product must be installed by a qualified engineer, abiding by any local regulations.
2. Voltages dangerous to human life are present at some of the terminal connections of this unit. Ensure that all supplies are de-energised before attempting any connection or disconnection.
3. These products do not have internal fuses therefore external fuses must be used to ensure safety under fault conditions.

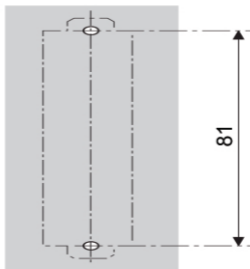


Fig. 3. Drilling plan

Drill 2 holes in the wall or panel as shown in the drilling plan (Fig. 3). Now secure the wall mounting holder to the wall or panel using two 4 mm diameter screws.

8. Electrical connections

Input connections are made directly to screw-type terminals with indirect wire pressure. Choice of cable should meet local regulations. Terminal for Current inputs will accept up to 4.0 mm² single wire or 2 x 2.5 mm² fine wire.



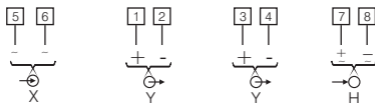
Make sure that the cables are not live when making the connections!

The 230 V power supply is potentially dangerous!

Connection	Terminal details	
	Measuring input	~
~		6
Auxilliary Power supply	~ , +	7
	~ , -	8
Measuring output-1	+	1
	-	2
Measuring output-2	+	3
	-	4



Fig. 4. Front View of Device for electrical Connections



- X = Input
- Y = Output
- H = Power supply

9. Commissioning

Switch on the measuring inputs and the power supply.
The Red LED light remains continuously ON after switching on.

10. Dimensional drawings

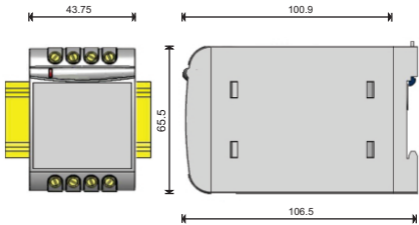


Fig. 5. Transducer Dimensions.

Note : All Dimensions are in mm.

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