Data Sheet

Digital Isolated AC Signal Conditioner
OMX 333PWR

Distributed by

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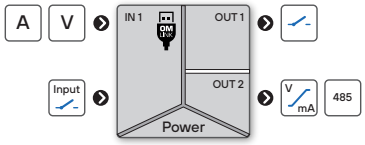
OMX 333PWR

- Range 0...1 / 2.5 / 5 A; 0...60 / 150 / 300 mV
  0...10 / 120 / 250 / 450V
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Digital filters, Tare
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Data output

DIGITAL ISOLATED AC TRANSMITTER



The OMX 333 model series are simple DIN rail mountable adjustable trasmitters.

Type OMX 333PWR is a universal alternating current V-A meter with the extention of functions for further network analysis. The instrument measures voltage, current, active power and with calculation also apparent power and cos fi.

The instrument is based on a microcontroller, true RMC and DAC, which provides good accuracy, stability and ease of use.

OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recomend the use of OM Link interface, which in conjunction with free control SW alows for modification and storage of all instrument's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Teach-In: Min and Max values can be assigned to any two values of (unknown) input signal
Measuring modes (PWR): voltage (V_{RMS}), current (A_{RMS}), power (W) and with calculation apparent power (S) and power factor (cos fi)

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 0.2 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PWR Range	0...60 mV	21 kOhm	Input 5
	0...150 mV	21 kOhm	Input 5
	0...300 mV	1,2 kOhm	Input 5
	0...1 A	< 150 mV	Input 5
	0...2,5 A	< 150 mV	Input 5
	0...5 A	< 150 mV	Input 5
	0...10 V	152 kOhm	Input 3
	0...120 V	930 kOhm	Input 1
	0...250 V	730 kOhm	Input 3
	0...450 V	930 kOhm	Input 1
Input frequency	40...400 Hz		
Measured quantities	Voltage (V_{RMS}) Current (A_{RMS}) Active power (P) *with calculation* Reactive powen (Q) Apparent power Power factor (cos fi)		

EXTERNAL INPUT

No. of inputs	1, on contact	
Function	OFF	no function assigned
	HOLD	measurement paused
	LOCK	control keys blocking
	TARE	tare activation
	CL. TA.	tare resetting

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.3 % of FS + 1 digit
Rate	0.5...5 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for > 200 V and 5 A ranges*
Functions	tare
Digital filters	exponential average, rouding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2 W / 2 VA

MECHANIC PROPERTIES

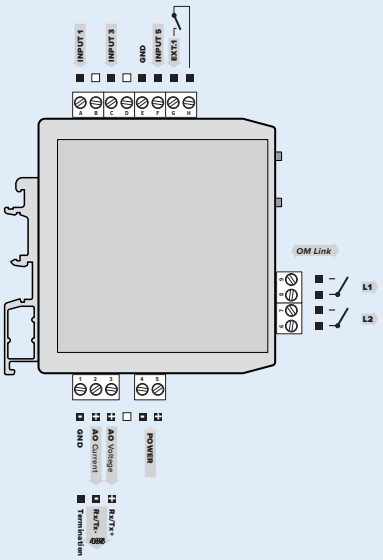
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



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Volatge range	0...10 V/120 V	**S**					
	0...250 V/450 V	**U**					
Current range	0...60 mV/300 mV		**K**				
	0...1 A/2,5 A/5 A		**P**				
Comparators	no			**0**			
	1x relay (Form A)			**1**			
	2x relay (Form A)			**2**			
	1x open collector			**3**			
	2x open collector			**4**			
Output	none				**0**		
	analog				**1**		
	RS 485				**2**		
Specification	customized version, do not fill in						**00**

Basic configuration of the instrument is indicated in bold.