

Data Sheet

Digital Isolated Transmitter Model OMX 380iPM

Distributed by



www. BristolInstruments.com

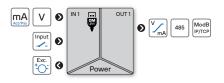
Bristol Instruments 90 Canal Street, 4th Floor Boston, MA 02114

> Toll free 877-866-8500

OMX 380iPM



DIGITAL ISOLATED TRANSMITTER



OPERATION

The device can be configured either by DIP switches located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off).

OPTION

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 and Modbus protocol.



OMX 380iPM



- Input 0...20 mA/4...20 mA/0...10 V
- Output 0/4...20mA/0...5mA/0...2/5/10V/±10V
- Rate up to 7200 meas./s
- Teach-in, Digital filters, Tare, Linearization
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC/24 VAC

Excitation • Data output

The OMX 380i model series are very fast DIN rail mountable digital transmitters with a Teach-in function.

Type OMX 380iPM is a isolated transmitter. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor, fast 24-bit $\Delta\Sigma$ ADC with PGQ and 16-bit DAC, which guarantees high accuracy and excellent stability.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT

Measuring range: adjustable in menu

Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal

Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal

Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT

Type: isolated, programmable with a resolution of 16 bit, rate < 160 μ s Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

EXCITATION

Range: 24 VDC/1 W, isolated

Linearization: non-linear signal is converted by a 100-point linear interpolation

Tare: designed to reset display upon non-zero input signal

Fixed tare: fixed preset tare

Min./max. value: registration of min./max. value reached during measurement Simulation: test mode in which range, value and duration of the step can be set Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS

Floating average: from 2...30 measurements Exponential average: from 2...100 measurements Arithmetic 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

Resetting Min/Max: resetting min/max value

Hold Min/Max: start of a measurement to evaluate the Min/Max value

Sample: start of a one-time measurement

TECHNICAL DATA

No. of inputs	1 The range is OM Link free	selectable either by DII SW from PC	switch or by
PM Range	020 mA	< 200 mV	Inpu
	420 mA	< 200 mV	Inpu
	010 V	1 MΩ	Input

EXTERNAL INPUT

No. of inputs	2, on conta	ect
Function	OFF TARE CL.TAR. CL.M.M. HOLD SAMPLE HLD.MIN HLD.MAX HLD.M-M KEYLCK	no function assigned tare activation reset of Tare reset of Tare reset of Min./Max values measurement paused take a one-off measurement start measurement of MIN start measurement of MAX start measurement of MAX-MIN device buttons blocked

INSTRUMENT SPECIFICATION

TC	15 ppm/°C
Accuracy	±0.01% of FS ±0.02 % of FS PM - I
Rate	1007 200 measurements/s speed of 400 meas/s is with FFT signal filtering
Latency	< 580 μs
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, tare, preset tare, min/max value, math. functions, delayed start, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm /expo- nential / power / root
Linearization	linear interpolation in 100 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 25°C and 40 % r.h.

ANALOG OUTPUT

1
isolated, adjustable with 16-bit DAC, output type and range is selectable
15 ppm/°C
0.024 % from FS
±0.02% of FS ±0.03% of FS ±0.05% of FS 02 V / 05 m/
response to change of value < 160 μs
02/5/10 V, ±10 V, resistive load ≥ 1 k Ω 05/20 mA/420 mA, comp. < 600 Ω /12 V Indication of broken current loop Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, Modbus RTU / TCP
Data format	8 bit + no parity + 1 stop bit
Rate	300230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)
Ethoroot	10 (100D===T M==H=== TCD (ID (Cl===)

EXCITATION

Fixed voltage	24 VDC/< 60 mA, isolated

POWER SUPPLY

Range	1030 VDC / 24 AC, \pm 10 %, PF \ge 0.4, I_{STP} < 40 A / 1 ms, isolated Protection by fuse inside the device.
Consumption	< 3.1 W / 3.0 VA

MECHANIC PROPERTIES

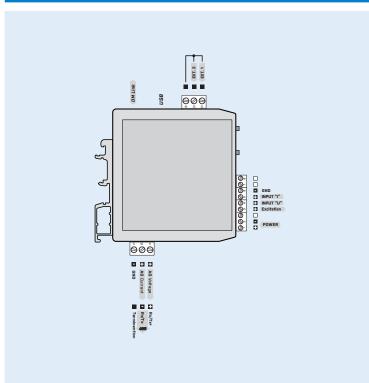
Material	PA66, incombustible UL 94 V-0, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm ²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°60°C
Storage temperat.	-20°85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. test between supply and input 2.5 kVAC for 1 min. test between input and outputs
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 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



ORDER CODE			
OMX 380il	PM	-] - 🔲
Output	Analog Data - RS 485	1 2	
	Data - Ethernet	3	
Specification	customized version, do not fill in		00

Basic configuration of the instrument is indicated in bold.