

CATALOG
OIL LEVEL MONITOR - MNO



SUMMARY

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INTRODUCTION

Monitor Oil Level for transformers and reactors MNO, is a high-precision equipment microprocessor that indicates the oil level on a scale ranging between 0 and 100%, is indicated and provides an analog output (0-10, 0-20 or 4 to 20mA), and also the RS485 serial port with Modbus RTU protocol that allows remote access to the monitor via a supervisory

The MNO is built obeying strict quality standards and uses latest generation electronic components (SMD), your hardware is designed to withstand harsh working conditions and can be installed directly in power transformers and reactors, in panels in the courtyard of substations energy, platforms marine and chemical industries. Meets levels of requirements, supportability, and reliability in accordance with IEC, DIN, IEEE, ABNT.

As input signal the MNO has a resistive input signal configurable 0-300 ohms, or input current signal 4-20mA, for the value monitored (measured) can make three levels of programming for actuation of the contacts (Level High, Low Level and Shutdown), 3 relay outputs and one relay NOC independent signaling failures NC, 1 configurable analog output that can be 0-10, 0-20 or 4-20mA, 1 Output RS485 with Modbus RTU , all parameters can also be configured directly in front of the device or through the RS485 serial output.

MAIN FEATURES

- 4-digit display 13.8 mm of high-brightness LED (red);
- Accuracy and Resolution, < 0,5% / 0,1 %;
- Measurement Range 0-100%;
- Input for signal indicator resistive (0..300Ohms) or 4 to 20mA;
- Power Suplly universal 48...265 Vac/Vdc;
- Digital Output Rs485 - Modbus RTU, for SCADA;
- Analogue Output selectable, 0a10, 0a20 ou 4a20mA;
- Memory of the higher and lower level;
- Relay for alarm of higher level (NOC),with hysteresis selectable;
- Relay for alarm of lower level (NOC),with hysteresis selectable;
- Relay for Trip (NOC) with timer programable, for higher and /or lower level ;
- Relay for indicator fault (watchdog);
- Aluminiun Enclosure;
- Dimension 48x96x140mm;
- Easy application;

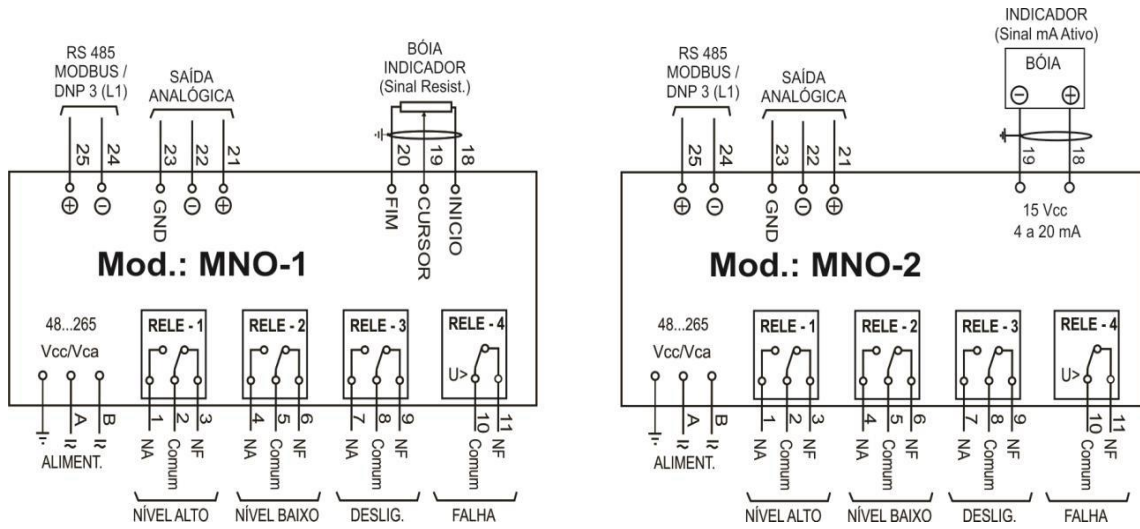
DADOS TÉCNICOS

Monitor de Nível de Óleo	
Operating Voltage	48 to 265 Vdc / Vac 50/60 Hz
Operating Temperature	-40 to + 85 ° C
Consumption	<15 W
Entry-level level	Float (0 to 400 ohms or 4 to 20 mA)
Measuring Range	0 to 100%
Analog Output and Maximum Load Options *	0 ... 1 mA - 8000 Ohms *
	0 ... 5 mA - 8000 Ohms
	0 ... 10 mA - 8000 Ohms
	0 ... 20 mA - 8000 Ohms
	4 ... 20 mA - 8000 Ohms
Maximum Error of Measurement Inputs	0.25% of end of scale
Maximum Analog Output Error	0.25% of end of scale
Output Contacts	4 - Potential Free
Maximum Switching Power	40W / 250 VA
Maximum Switching Current	6.0 A
Maximum Driving Current	RS485 (ANSI / TIA / EIA-485-A)
Serial Communication Port	Modbus RTU and DNP 3.0 (Slave)
Auto Baud Rate	2,400 to 57,600 bps
Enclosure (DIN IEC 61554)	48 x 96 x 140 mm - Aluminum
Panel mounting	Panel Flush Mount
Protection level (NBR IEC 60529)	TP40 (front) and IP30 (rear)

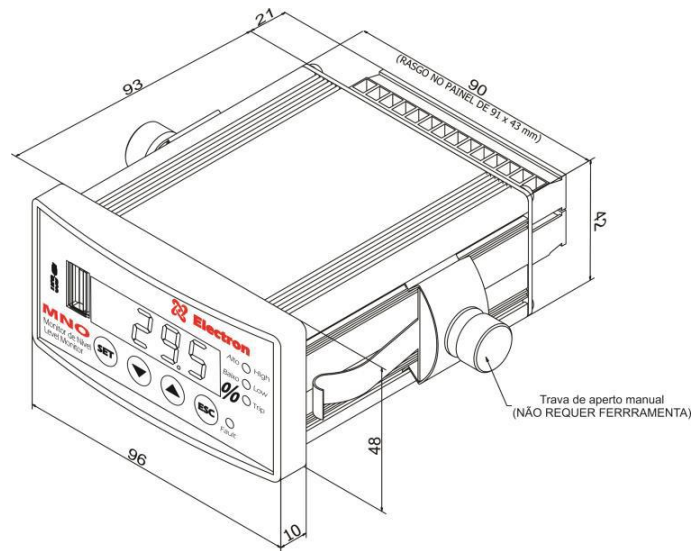
TYPE TESTS PERFORMED

- Applied Voltage (IEC 60255-5): 2kV / 60Hz / 1 min. (against land);
- Impulse Voltage (IEC 60255-5): 1.2 / 50 egsec. / 5kV / 3 neg. and 3 pos. / 5 sec. Interval;
- Electrostatic Discharges (IEC 60255-22-2): Air mode = 8kV / Counted mode = 6 kV;
- Immunity to radiated electromagnetic disturbance (IEC61000-4-3): 80 to 1000 MHz / 10V / m;
- Immunity to Fast Electrical Transients (IEC60255-22-4): Power / Input / Outputs = 4KV / common. 2kV;
- Surge Immunity (IEC60255-22-5): phase / neutral 1KV, 5 per polar. (±) - phase-ground / neutral-ground 2KV, 5 per polar (±);
- Immunity to conducted electromagnetic disturbances (IEC61000-4-6): 0.15 to 80 MHz / 10V / m;
- Climate Test (IEC60068-21-14): - 10°C + 70°C / 72 hours;
- Vibration resistance (IEC60255-21-1): 3 axes / 10 to 150Hz / 2G / 160min / axis;
- Vibration Response (IEC60255-21-1): 3 axes / 0.075mm-10 at 58 Hz / 1G from 58 to 150 Hz / 8min / axis;

CONNECTION DIAGRAMS



DIMENSIONS



APPLICATION EXAMPLE



INSTALLATION ACCESSORIES



MAGNETIC
INDICATOR



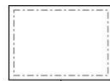
ADAPTATION MASK
96x96 p/ 48x96



PANEL FOR OUTDOOR
APPLICATION

ORDER SPECIFICATION

Monitor de Nível de Óleo- MNO



Sensor de Entrada	
1	Resistiva
2	4 a 20 mA