SCP1

Catalog

Preservation System Monitor

A critical part of power transformers and reactors is the expansion tank. It allows transformer oil volume expansion caused by temperature changes which the equipment is subject to.

Expansion tanks are equipped with a sealing system - normally comprised of a membrane or rubber bbag. To prevent accelerated insulation aging caused by humidity, this system prevents the contact of insulating oil with ambient air. However, eventual leaks in the membrane or bag may remain unnoticed, exposing the equipment to an ongoing contamination process for a long period of time.

The Preservation System Monitor (SCP) continuously monitors the state of this sealing, triggering an alarm in case leaks are detected and allowing fast problem resolution. It has been developed based on Treetech pioneering experience with the Membrane/Bag Burst Relay – MBR, with thousands of units operating worldwide, but featuring a series of innovations with patent applications:

- Control modules for monitoring one or two (option 2) burst sensors, allowing optimized monitoring of large-size bags or membranes;
- Serial communication port RS-485 with DNP 3.0 (option 1) and Modbus RTU open protocols;
- Alarm contacts with user-programmable operation logic;
- Sensor and control module self-diagnosis;
- Universal auxiliary supply from 38-265 Vdc / Vac, 50 / 60 Hz.
- Galvanic insulation between inputs, outputs and supply;

Optional Functions

Option 1: DNP3.0 Protocol

- Allows user to select DNP 3.0 protocol, as well as default (Modbus RTU).

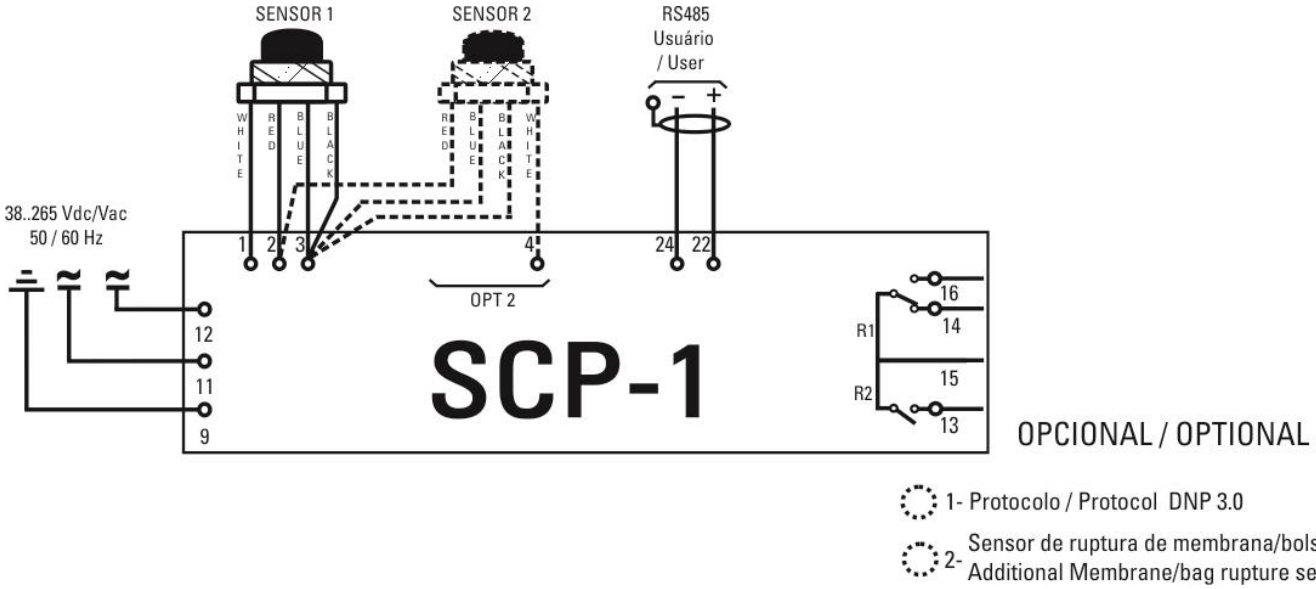
Option 2: Additional membrane/bag burst sensor

- Allows the use of an additional burst sensor, especially suitable when the bag size requires two sensors (at the ends) or when there are two bags close to each other.

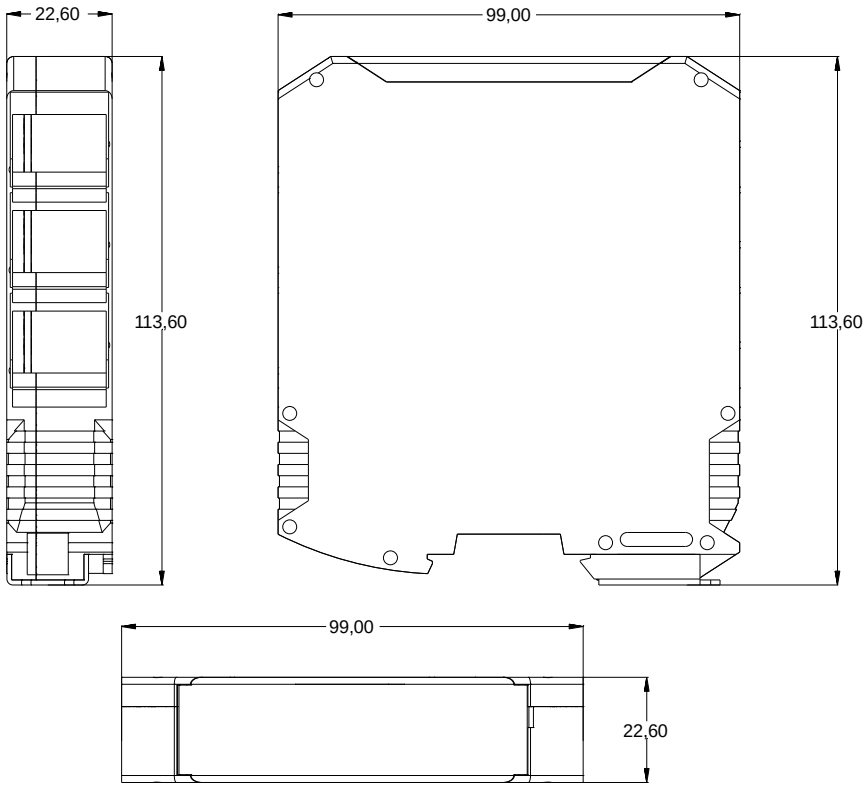
Technical Data

Condition	Interval / Description
Supply Voltage:	38-265 Vac/Vdc 50/60 Hz
Max. consumption:	< 8 W
SCP Working Temperature:	-40 to +85 ºC
Sensor Working Temperature:	-40 to +100 ºC
Burst Sensor Inputs:	1 or 2, supplied separately
SCP Protection Class:	IP 20
Sensor Protection Class:	IP 67
Connections - SCP:	0.3 to 2.5 mm², 22 to 12 AWG
Sensor Cable:	2 x 0.5 mm²; 20 AWG
SCP Attachment:	DIN Rail 35 mm
LEDs:	Two three-color LEDs for status indication
Relay outputs (Potential Free):	1 reversible + 1 NO
Max. switching power: Max. switching voltage: Max. supply current:	70 W(dc) / 220 VA(ac) 250 Vdc / 250 Vac 5 A
Serial Communication Ports:	1 RS-485 for supervision / monitoring system
Communication protocols:	Modbus RTU or DNP 3.0 level 1 (option)

Wiring Diagram



Dimensions

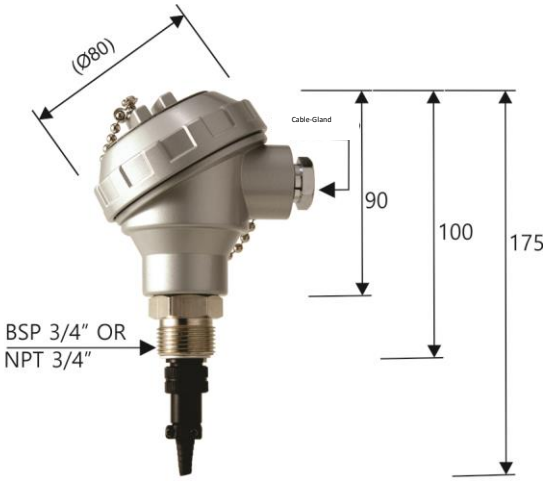


Remark: All measures in mm.

Optional Accessories

Pull Box for MBR / SCP - CPMBR

Chain



Dimension in mm

Features

Head:	Cast aluminum, KNC painted
Cable Gland:	Tin, nickel plated - Thread 1/2" BSP
Chain:	Tin, nickel plated
Screws:	Nickel-plated tin or stainless steel
Adapter:	Stainless steel

Order Specification

The Preservation System Monitor - SCP is provided with universal supply, 85-265 Vdc/Vac, 50/60Hz. The sensor is supplied with 5-meter cable as standard (other lengths available upon request). Therefore, only the following should be specified in the purchase order:

- Preservation System Monitor - SCP:
  - ✓ Quantity.

- SCP Relay Sensor:
  - ✓ Quantity;
  - ✓ Cable length, if other than the 5-meter standard (Upon request).

- Optional Accessory - CP-MBR Pull Box:
  - ✓ Quantity;
  - ✓ Thread option: 3/4” BSP (British Standard Pipe) or 3/4” NPT (National Pipe Thread)

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