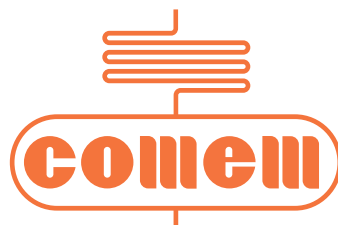


R.I.S.®

Integrated safety detector



Integrated safety detector

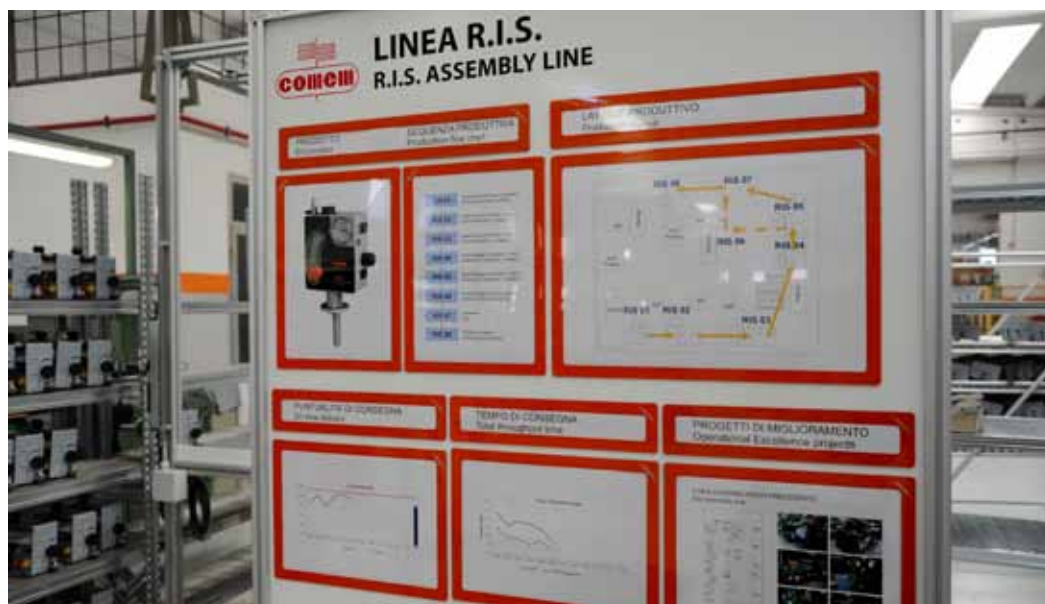
R.I.S.[®] (Integrated Safety Detector) was conceived from the need to integrate the functions performed by a number of transformer accessories in a single, compact and reliable instrument, which was capable of replacing their applications, as well as guaranteeing numerous advantages ranging from an economic to functional-aesthetic viewpoint.

R.I.S.[®]

Different functions efficiently combined
in a single compact design

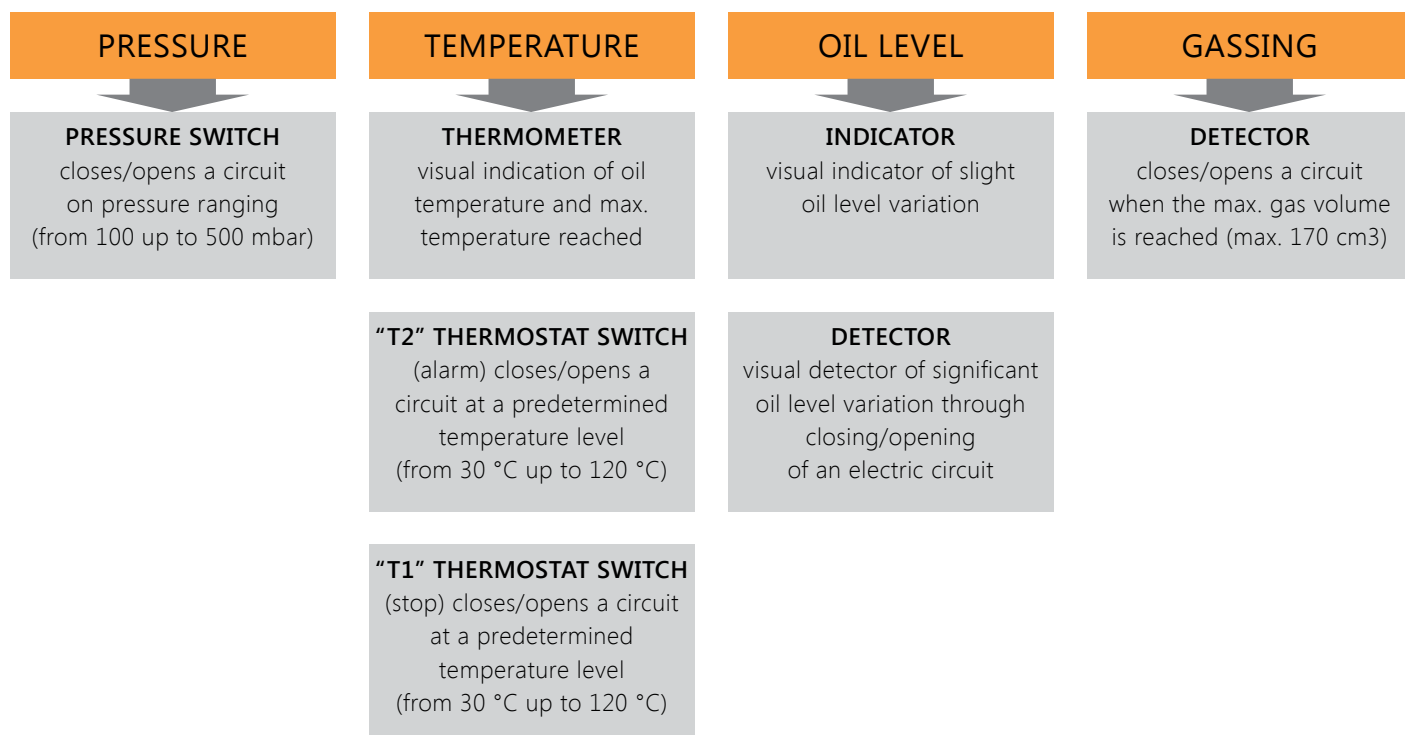


Integrated Safety Detector According to EN 50216-3

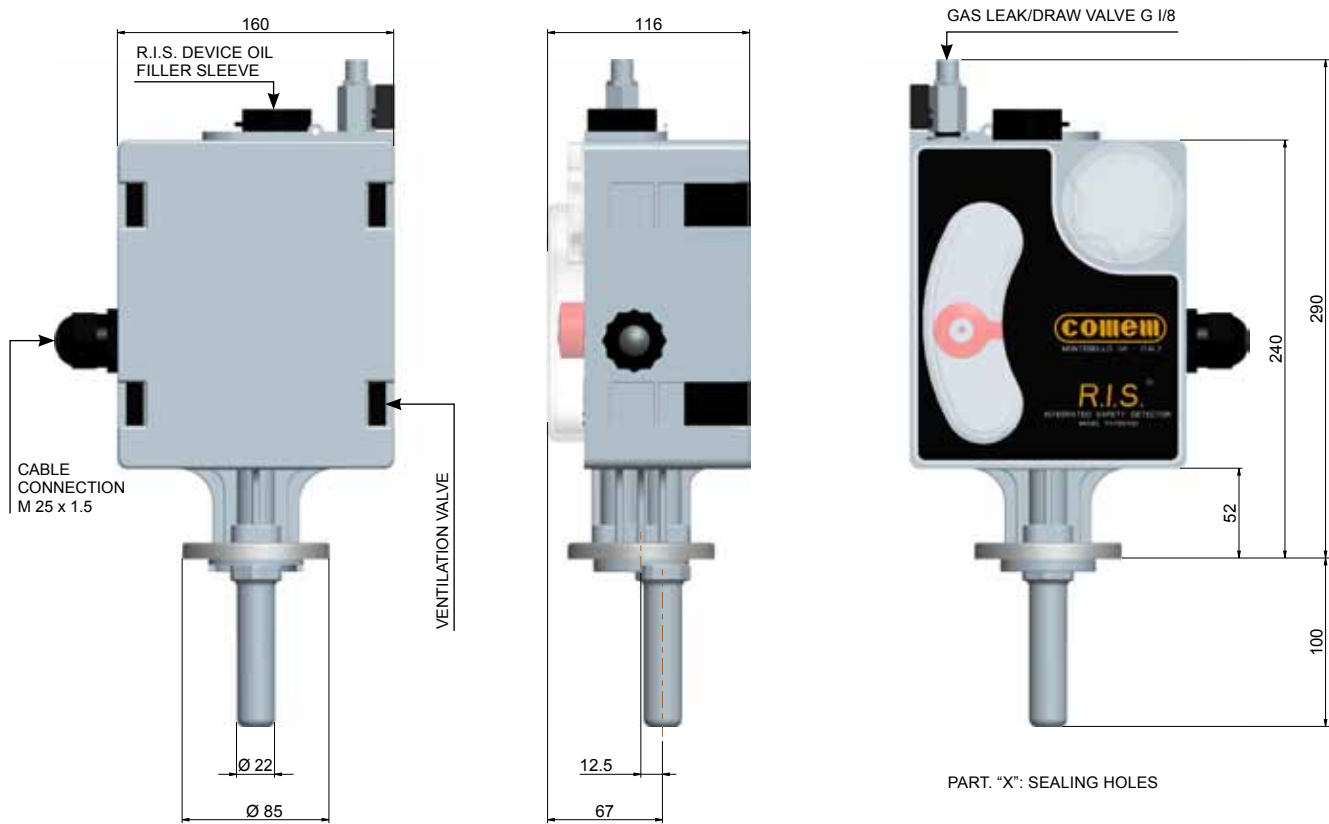


It is composed by a rugged plastic body, watertight and resistant to extreme climates, with houses a series of instruments and keeps constant control of the following operating conditions of the transformer:

R.I.S.® Integrated Safety Detector



Integrated safety detector



Description and functions	Measure	Checking test value
<p>Oil Level (Float) The device indicates any gas evolution or oil level variation.</p> <ul style="list-style-type: none"> - Slight oil level variation or any insignificant gas evolution is denoted by the float position between "MIN" & "MAX" on the display. - At major oil variation level or gas evolution the float stops at "MIN" and opens/closes the alarm circuit. - Any accumulated gas can be drawn off by the valve provided. 	max 170 cm ³	Locate the magnet close to the float (between MAX and MIN). Draw it downwards until it reaches "MIN". To reset the float to its correct position draw the magnet upwards and detach.
<p>Pressure (Pressure switch) This feature measures the internal pressure of transformer. The normal level is to be set by the user according to the transformer manufacturer's instructions. When pressure exceeds a pre set level the alarm circuit is triggered by a N/O or N/C switch.</p>	100 mbar to 500 mbar	With the internal pressure at least 100 mbar set the adjusting knob of the pressure switch to minimum.
<p>Temperature: "T2" Thermostat switch (Alarm) The feature measures the internal oil temperature of the transformer. The normal operating value is to be set by the user according to the transformer manufacturers instructions. At a pre set temperature the alarm circuit is triggered by a N/O or N/C switch (T2).</p>	30 °C to 120 °C	Open the rear cover using both hands, do not lever at one side only. The adjustment knob of the alarm switch "T2" should be set to zero.
<p>"T1" Thermostat switch (Stop) The feature measures the internal oil temperature of the transformer. The normal operating value is to be set by the user according to the transformer manufacturers instructions. At a pre set temperature the stop circuit is triggered by a N/O or N/C switch (T1).</p>	30 °C to 120 °C	The adjustment knob of the stop switch "T1" should be set to zero.
<p>Thermometer The device measures the internal temperature of the transformer, which shall be visualized outside the device through the protection window. The thermometer is equipped with a zero re-setting pointer.</p>	30 °C to 160 °C	The protection window is to be unscrewed so that the pointer shall be set to zero

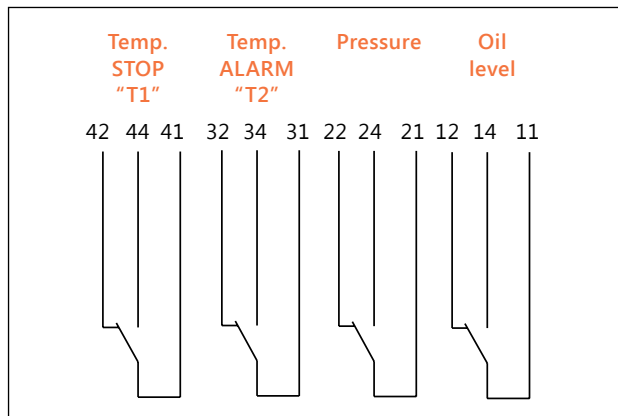
General feature

DEGREE OF PROTECTION (EN 60529)	IP 66
DEGREE OF SHOCK TIGHTNESS (EN50102)	IK 07
SALT-FOG TIGHT	1000 h
UV-RAY RESISTANCE (UNI-ISO 4892 / UNI-ISO 4582)	500 h
TEMPERATURE RESISTANCE	-40 °C TO +120 °C
CABLE CONNECTION	M 25 x 1.5
CABLE BOX (EN 50005 / EN 60947-7-1 / IEC 947-7-1)	ACCORDING TO STANDARD
WIRE SECTION TO BE USED ON CLAMP BOX	UP TO 2.5 mm ²
MAX. RATED PRESSURE	500 mbar
ELECTRICAL CHARACTERISTICS	INSULATED ENVELOPE

Current	A.C.						D.C.						
	Ohmic			Ohmic inductive (cosφ > 0,5)			Ohmic			Ohmic inductive (L/R < 40ms)			
Voltage	220	127	24										
Electric rating	OIL LEVEL	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A
	PRESSURE SWITCH	6A	6A	6A	24	24	24	0,6A	0,6A	0,6A	0,6A	0,6A	0,6A
	THERMOSTAT	16A	16A	16A	4A	4A	4A	0,6A	0,6A	0,6A	0,2A	0,3A	1,8A

Wiring diagram by EN 50005 Standard

- Temp. STOP "T1" (terminals 44-41-42)
- Temp. ALARM "T2" (terminals 34-31-32)
- Pressure (terminals 24-21-22)
- Oil level (terminals 14-11-12)



TESTS

R.I.S.[®] has fully passed the type tests prescribed by both European Standard EN 50216-3 and by COMEM internal technical standards, which are listed as follows:

Type tests

- Pressure overload: 2.5 bar - 2 minutes - with oil at 115 °C
- Operation at extreme temperatures: at -40 °C and 120 °C
- Classification of the IP 66 protection rating: EN 60529
- Classification of ambient conditions: 4K2, 4Z2, 4B1, 4C2, 4S3, according to EN 60721-3-4
- Mechanical vibrations 4M4 (shock 250 m/sec². Time spectrum "I": 11 ms), according to EN 60721-3-4
- Classification of seismic conditions Level 2 class 0: according to EN 60068
- Max. inclined operation: 15°
- Gas or oil volume for contact switching at ambient temperature and at the average working temperature of the transformer: max. 170 cm³
- Contact response time: < 0.5 seconds
- Allowed max. magnetic field value: 25 mT (no intervention of R.I.S.[®] According to EN 50216-3
- Mechanical shock protection IK 07: according to EN 50102
- Tightness test - 1000 hours in saline saturated atmosphere UNI-ISO 9227-93 (NSS)
- Tightness test against UV ageing according to UNI ISO 4892.

Routine tests

Before shipment each piece is also subjected to the following routine tests:

- Tightness test: 30 minutes - 1 bar - with oil at 90 °C
- Operation of thermostats
- Pressure switch operation
- Oil level switch operation.

Options on request

- Pneumatic pump set / oil re-fill in altitude. Code: 5400806001.

Supply conditions

R.I.S.[®] is supplied in a single sturdy carton (dimensions: 400 mm x 200 mm x 160 mm, weight: 2.2 kg) and complete with the following accessories:

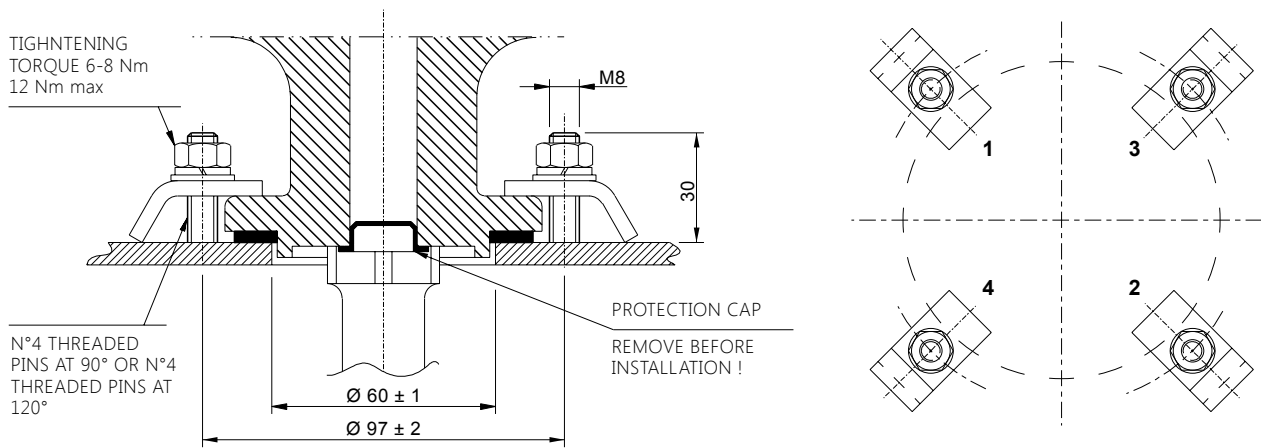
- Instruction booklet for installation and use
- Fixing kit
- Test report.

R.I.S.[®] Mounting instruction fitting (on to) a transformer tank

- $\varnothing 60 \text{ mm} \pm 1 \text{ mm}$ diam. hole on the tank
- Flat gasket (provided with the unit)
- Stainless steel fixing brackets (4 pcs packed)
- Stainless steel flat washers according to UNI 6592 $\varnothing 8,4 \text{ mm}$ (4 pcs packed)
- Stainless steel spring washers according to UNI 1751 $\varnothing 8,4 \text{ mm}$ (4 pcs packed)
- Stainless steel M8 nuts according to UNI 5588 (4 pcs packed).

Tighten the nuts in position 1,2,3,4 with torque nut 3 Nm to 4 Nm in a cross pattern; repeat the operation following the same sequence until the suggested value is reached.

Due to the deformation of the cover during lifting of the transformer, an oil leak could be possible. It is suggested to use covers of suitable thickness (min. 6-8 mm).



COMEM

Strada Regionale 11, Signolo 22
36054 Montebello Vicentino (VI) - ITALY
Tel. +39 0444 449311
Fax +39 0444 449352 - 440359
E-mail: comem@comem.com

www.comem.com

Due to technical product updates, the information contained in this catalogue may be subject to change without notice.

© Copyright 2012 COMEM.
All rights reserved.

Ed. 08/2012

