R.I.S.®

Integrated safety detector

comem

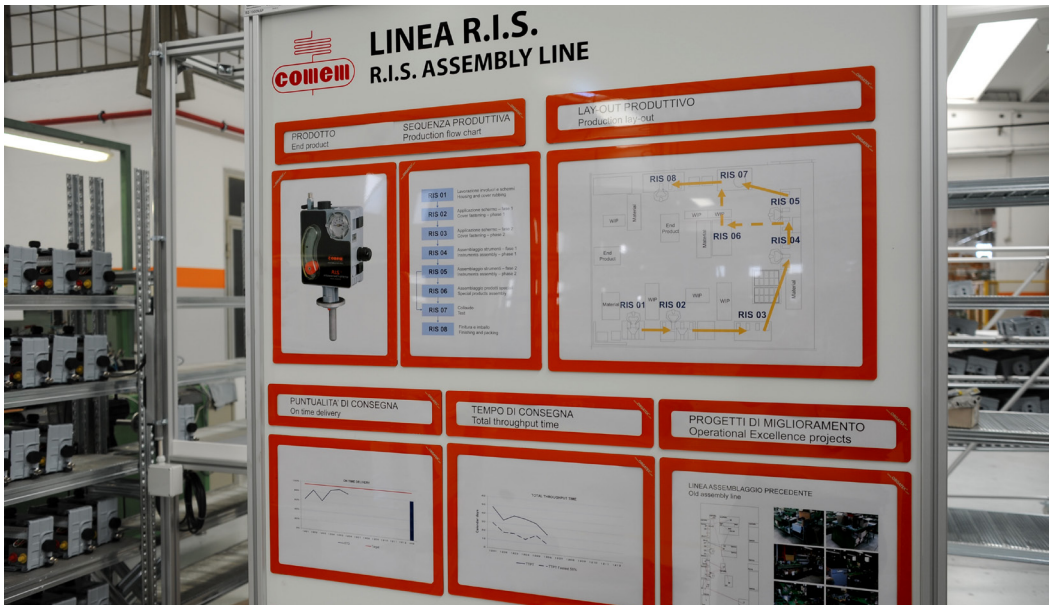
Integrated safety detector

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

PRESSURE

PRESSURE SWITCH
closes/opens a circuit on pressure ranging (from 100 up to 500 mbar)

TEMPERATURE

THERMOMETER
visual indication of oil temperature and max. temperature reached

"T2" THERMOSTAT SWITCH
(alarm) closes/opens a circuit at a predetermined temperature level (from 30 °C up to 120 °C)

"T1" THERMOSTAT SWITCH
(stop) closes/opens a circuit at a predetermined temperature level (from 30 °C up to 120 °C)

OIL LEVEL

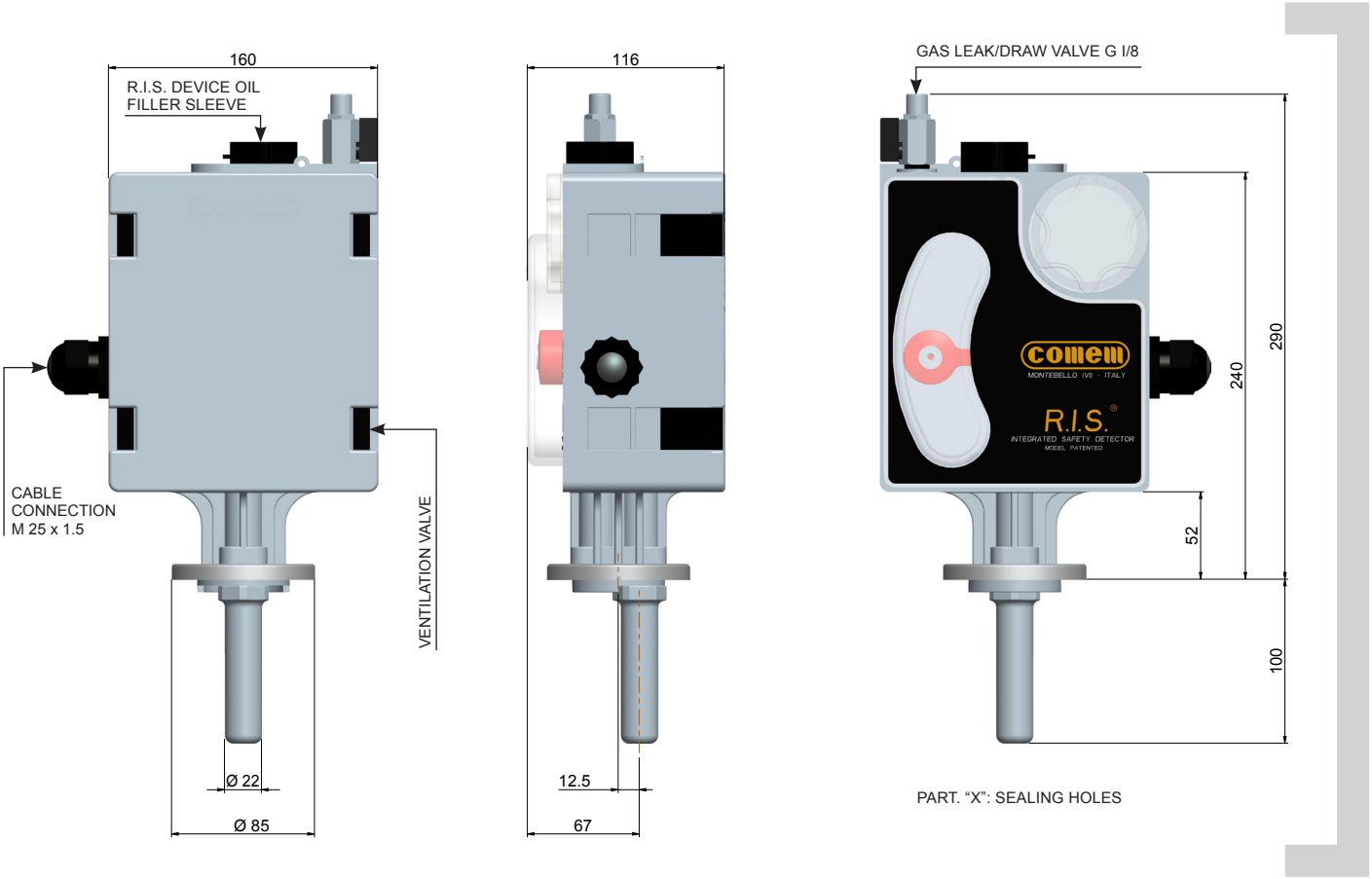
INDICATOR
visual indicator of slight oil level variation

DETECTOR
visual detector of significant oil level variation through closing/opening of an electric circuit

GASSING

DETECTOR
closes/opens a circuit when the max. gas volume is reached (max. 170 cm3)

Integrated safety detector



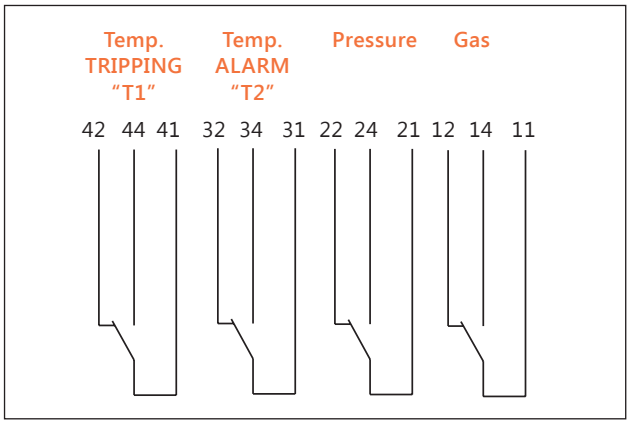
Description and functions	Measure	Checking test value
Gas (Float) The device indicates any gas evolvement or oil level variation. - Slight oil level variation or any insignificant gas evolvement is denoted by the float position between "MIN" & "MAX" on the display. - At major oil variation level or gas evolvement 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). Drawn it downwards until it reaches "MIN". To reset the float to its correct position draw the magnet upwards and detach.
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 exeeds a pre set level the alarm circuit is triggered by a N/O or N/C switch.	100 mbar to 500 mbar	With the internal pressure at least 100 mbar set the adjusting knob of the pressure switch to minimum.
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).	30 °C to 120 °C	Open the rear cover using both hands, do not lever at one side only. The adjustement knob of the alarm switch "T2" should be set to zero.
"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).	30 °C to 120 °C	The adjustment knob of the stop switch "T1" should be set to zero.
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.	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
SALT-FOG TIGHT	1000 h
UV-RAY RESISTANCE (UNI-ISO 4892 / UNI-ISO 4582)	500 h
TEMPERATURE RESISTANCE (AT AMBIENT TEMPERATURE -25°C + 40°C) FOR INSTALLATION AT DIFFERENT TEMPERATURE PLEASER CONTACT US.	-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.					
Circuit type		**Ohmic**			**Ohmic inductive (cosφ > 0,5)**			**Ohmic**			**Ohmic inductive (L/R < 40ms)**		
Voltage		220	127	24	220	127	24	220	127	24	220	127	24
Electric rating	GAS OR 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. TRIPPING "T1" (terminals 44-41-42)
- Temp. ALARM "T2" (terminals 34-31-32)
- Pressure (terminals 24-21-22)
- Gas (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
- Mechanical vibrations 4M4 (shock 250 m/sec^2. 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 cm^3
- Allowed max. magnetic field value: 25 mT (no intervention of R.I.S.® According to EN 50216-3
- 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

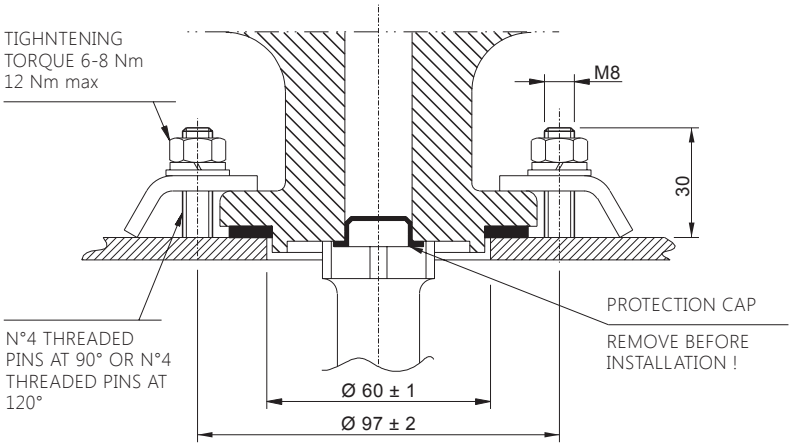
R.I.S.® is supplied in a single sturdy carton (dimensions: 400 mm x 200 mm x 160 mm, weight: 2.2 kg) and complete with the following accessories:

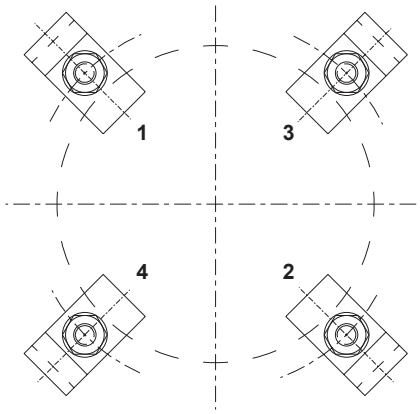
- Instruction booklet for installation and use
- Fixing kit
- Test report.

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

- Ø 60 mm ± 1 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 Ø 8,4 mm (4 pcs packed)
- Stainless steel spring washers according to UNI 1751 Ø 8,4 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).





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

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