



INSTALLATION, OPERATION AND MAINTENANCE GUIDE

GAS SAMPLING DEVICE RG3.3 (FOR RELAYS EE2 / EE3)

STORAGE AND SHELF LIFE

Handle with care. Max storage period before putting the instrument into service is 5 years (temperature -20 +40 °C – air humidity 50-75%) as long as the instrument is kept in its envelope and in a clean place. Before use it is recommended to visual check that no damages happened to any parts.

UNPACKING

Make a correct disposal of packaging according local regulations.

MOUNTING POSITION AND CONNECTIONS

The gas sampling device RG3.3 for gas actuated Buchholz relays shall be fitted on the transformer tank at ground level and within handy reach so that sampling, draining and testing operations can be done ensuring workers' safety and without needing to shut transformer down as per EN standard provisions.

A copper tube size OD 8 mm / ID 6 mm (supplied upon request) shall be used to connect the "RG3" device from the cock "12" to the top of the Buchholz relay (cock R) and from the cock "15" to the drain cock (pos.T) located at the bottom of relay body. Special ermeto joints "14" are provided with each device (q.ty: 4/EA).

SETTING TO WORK

To fill up the RG3.3 device with oil open first the cocks "R" and "12". Now open cock "2" until oil has entirely filled up the device and then close it when filling up is completed; you can check oil level rising up inside the device through the inspection sight window located on the front side of the same.

After the gas sampling device RG3 has been oil filled the cock "R" top of the relay and "T" at the bottom of the body must be left in open position.

During the normal operation condition the gas sampling device, the Buchholz relay and the tubes which connect the two devices shall be oil filled.

OPERATING THE DEVICE

The RG3 device allows to perform three different functions:

- Sampling the gas off Buchholz relay and release the gas off system
- Test the circuits of Buchholz relay
- Draining oil off Buchholz relay



Gas sampling off Buchholz relay

1. Open cock "11" located underneath the RG3 to drain oil and await until the gas collected in the relay fills the device (you can observe this through the window).
2. Close the cocks "11" and "12" when the amount of gas needed for sampling is inside the RG3.

Now the gas formerly accumulated in the Buchholz relay, due to some electrical failures inside the transformer, may be drawn off for laboratory analysis or released by opening the cock "2".

Test of ALARM and TRIP circuits

Alarm test

1. Cock "R" top of relay cover shall be open.
2. Unscrew the protective cap of cock "2".
3. Connect a compressed air bottle, a pump for bicycle tires or our pneumatic test device (supplied upon request – view booklet enclosed in this manual) to the cock "2".
4. Open cock "2" and inject air inside RG3 slowly until you get ALARM contact operation.
5. Close cock "2"
6. **RESET TO OPERATION:** the testing medium inflated in the system must be fully released (i.e. until the RG3 is completely filled up again with oil) to reset the Buchholz relay to normal operating conditions: open cock "2" keeping a cloth top of cock until oil leaks out and then close the cock.

Trip test

1. Cock "R" top of relay cover and "T" underneath the body shall be open.
2. Unscrew the protective cap of cock "15".
3. Connect a compressed air bottle, a pump for bicycle tires or our pneumatic test device (supplied upon request – view booklet enclosed in this manual) to the cock "15".
4. Open cock "15" and inject air inside RG3 until you get TRIP contact operation.
5. Close cock "15" where pneumatic test device is connected to avoid leaking out when joint "6".
6. **RESET TO OPERATION:** the testing medium inflated in the system must be fully released (i.e. until the RG3 is completely filled up again with oil) to reset the Buchholz relay to normal operating conditions: open cock "2" keeping a cloth top of cock until oil leaks out and then close the cock.

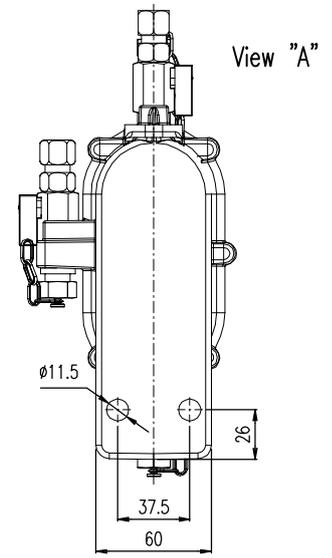
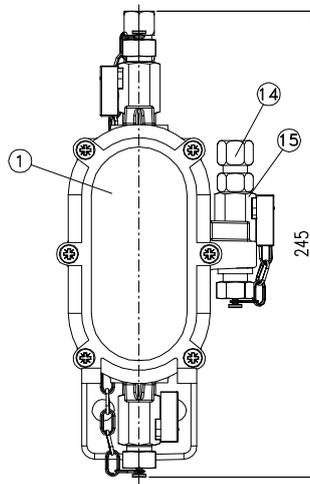
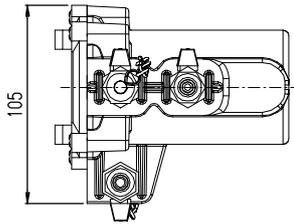
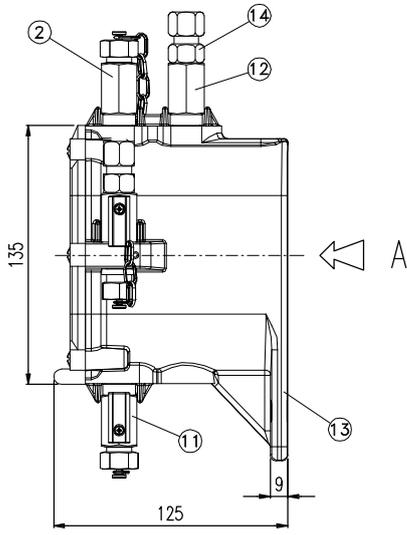
MAINTENANCE

No particular maintenance is required for this RG3. It is suggested only, on a regular basis, to schedule inspections to verify the overall conditions of the device.

DISPOSAL

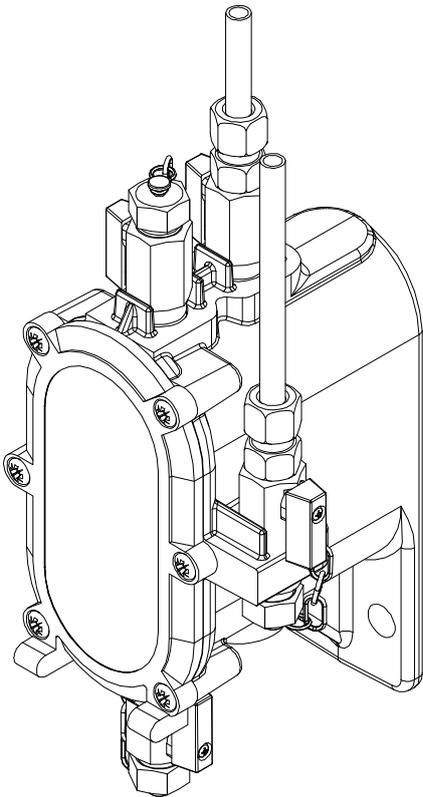
Disposal of all parts shall be made according to local environmental and waste management regulations.

Refer also to the drawing 3619 in the following pages.

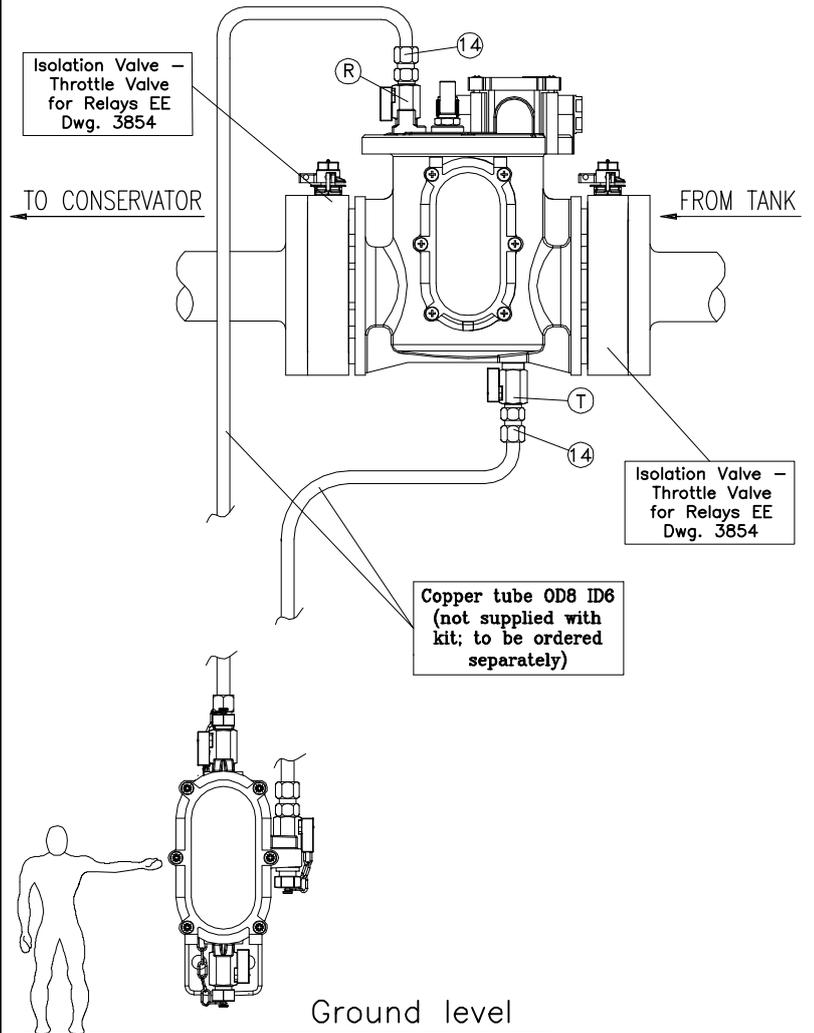


ORDERING CODES		
MODEL	WINDOW MATERIAL	CODE
RG3.3	TEMPERED GLASS	AB9DPG0171
RG3.3	TROGAMID	AB9DPG0101

Pos	Description
1	Inspection window
2	Gas release cock
11	Oil drain cock
12	Stop cock
13	Fixing plate
14	Hermeto joint
15	Stop cock



Mounting sketch



Instruction booklet for the use of Buchholz relays testing device.

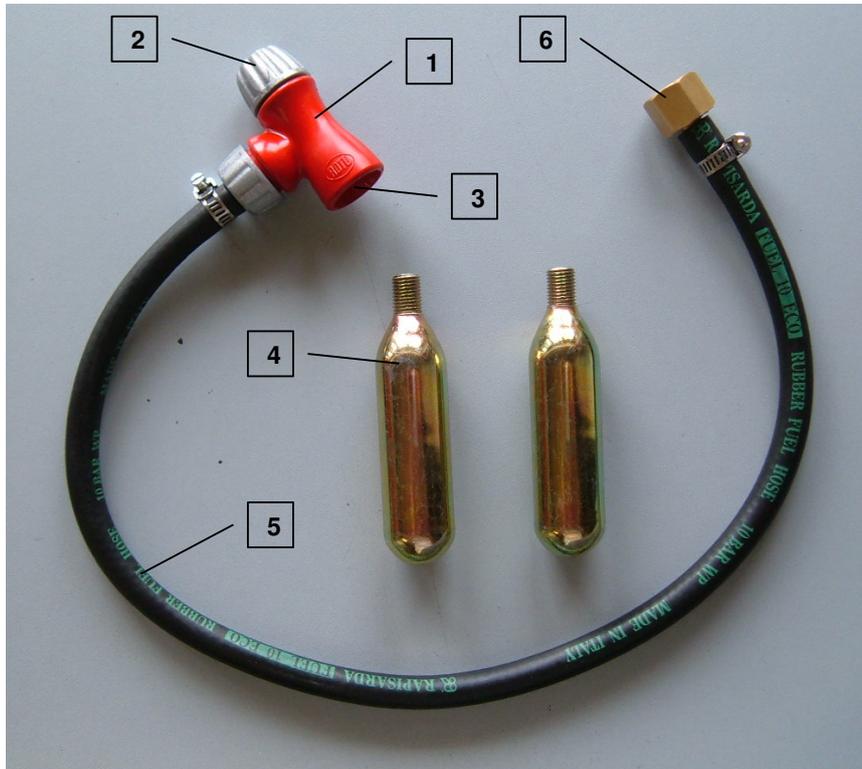


Fig.1

CONTENT OF THE PACKAGING

no.1 relay testing device
no.2 16 g CO₂ cartridges

DESCRIPTION (Fig. 1)

1. valve body (where to insert cartridges)
2. output cock
3. cartridge insertion
4. 16 g CO₂ cartridge
5. high pressure flexible tube
6. 1/4" G revolving screw joint

ALARM TEST (for all models)

- a) Hold the valve body 1 and make sure that output cock 2 is shut (turn clockwise)
- b) Carefully screw the cartridge 4 on threaded hole 1/8"G (3) of the valve body till a slight resistance (strength) is perceived
- c) Than, to perforate it start quickly screwing the cartridge till it completely stops (*fig.2*)

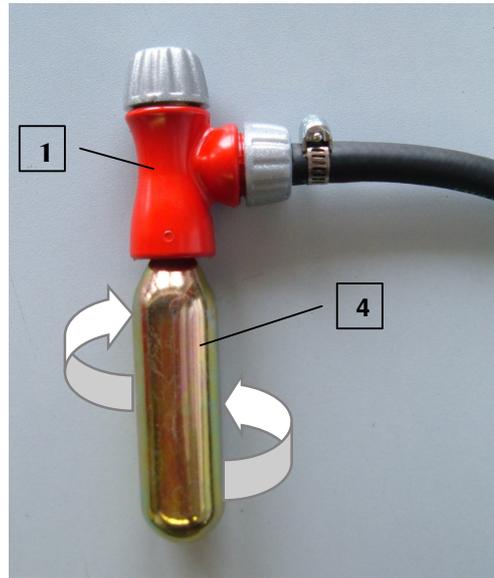


Fig.2

- d) Make sure that vent cock on relay (fig. 3) is closed (black cock handle in horizontal position) before removing the protective plug
- e) Unscrew the protective plug of the vent cock and screw joint 6 on the same (fig.3)

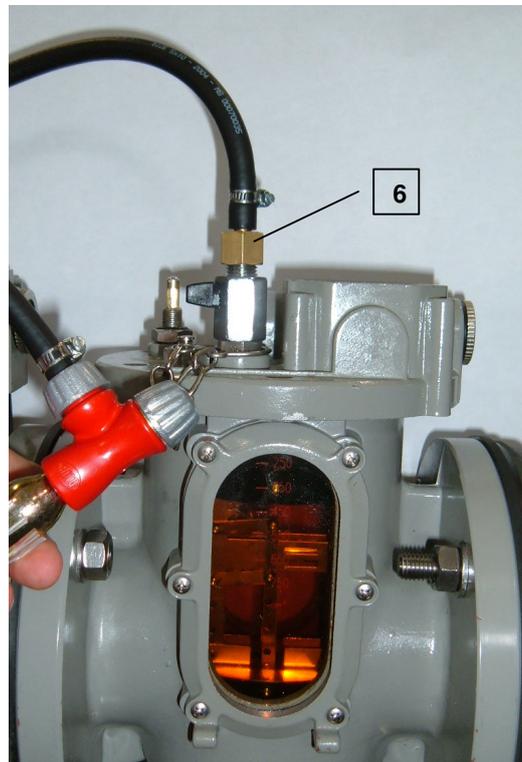


Fig.3

- f) Open vent cock (black handle in vertical position)
- g) Hold the testing device by avoiding to touch cartridge 4 with hands (use a glove or a cloth)

Since the testing device is under pressure the sudden exit of CO₂ from the cartridge (gas expansion stage) make cool the metal outside surface of the cartridge.

- h) Carefully open the output cock 2 of the testing device (turn it anti-clockwise) to check alarm is working properly. Then, from the inspection window of the relay, verify the progressive emptying of its upper part, and consequently, the corresponding oil level lowering . As soon as the alarm is operated, close completely the output cock 2 (turn it clockwise).

TRIP TEST (only for EE models, English standard)

EE models relays have a second cock on their lower part. Trip contact proper functioning can be tested by connecting the test device to this cock.

Make sure that the cock is shut (black handle in horizontal position), then remove the protective plug and screw at its place the joint 6 and re open the cock (black handle in vertical position). Quickly open output cock 2 (fig.3). When the sudden gas injection releases trip contact, close the output cock.

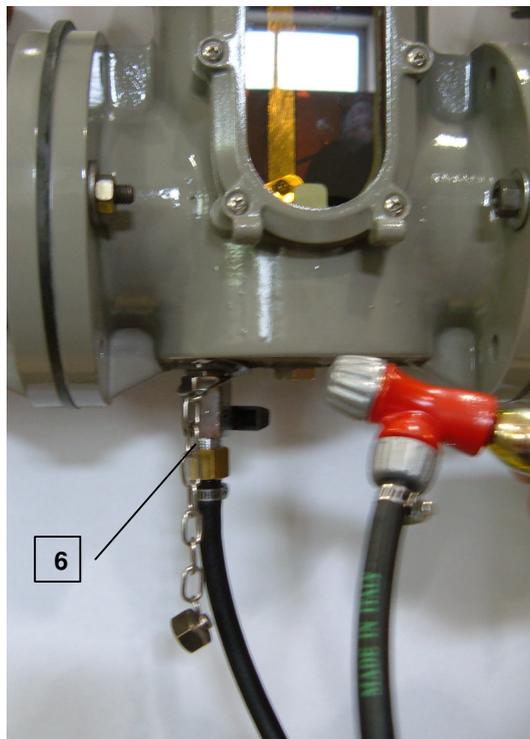


Fig.3



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REMOVAL OF TESTING DEVICE

- A) Close the vent cock (black cock handle on horizontal position) on which the device is connected (this will prevent oil leakage when joint 6 will be removed)
- B) Unscrew joint 6 from the vent cock
- C) Screw the protective plug (the one on the lower part of the relay) if it has previously been used
- D) Carefully open the upper vent cock to allow the exit of the gas inside the relay ; when the relay is full, the oil will start to flow out from the cock: shut the cock
- E) Screw the protective plug of the vent cock.

NOTES

- F) In case of alarm test (partial emptying of of the relay) the charge inside cartridge 4 doesn't run completely out, the cartridge can be re-used for further alarm tests. In this case, please keep the cartridge inside the testing device. The level of the charge can easily be verified by opening the output cock 2 till some gas comes out. To perform a new alarm test with the cartridge still on site, please start from point d) onwards. If the cartridge is exhausted: open the output cock to run completely out of the possible remaining charge, then unscrew cartridge 4 from its site and replace it starting from point a).
- G) In case of trip & alarm test (EE relays) the charge inside the cartridge is enough only for one test. To perform a new test of both contacts (trip & alarm) open the output cock 2 to run completely out the remaining charge, unscrew the cartridge and proceed from point a).