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TECHNICAL INSTRUCTIONS
DLI® (Dielectric Level Indicator)

1– INSTALLATION

1.1 Preamble

The following installation procedure is given for information only. Automation 2000 cannot be held responsible for its execution.

1.2 Installation precautions

Before installing the standard or flangeless DLI®, make sure that:

- The transformer is not powered.
- The transformer dielectric is at ambient temperature (approx. 20°C).
- The dielectric level inside the transformer is slightly below the transformer tank cover.
- The transformer opening or the male threaded end on which the DLI® will be installed is available.

1.3 Standard DLI® installation procedure

- Remove the drain tap and the level indicator float of the standard DLI®.
- Fit the FPM gasket (supplied) in the standard DLI® attachment flange throat.
- Mount the standard DLI® on the transformer cover's opening designed for that purpose.
- Attach the fixing hooks (supplied) on the fixing bolts (3 at 120° or 4 at 90°) according to the tightening precautions (***see page 3***). The fixing bolts must be located on a circle with a 97 mm diameter (±2 mm).
- Fill the standard DLI® with transformer dielectric until its level reaches the standard DLI® highest point.
- Put back the level indicator float into place and close the standard DLI® with its drain tap.

1.4 Flangeless DLI® installation procedure

- Remove the drain tap and the level indicator float of the flangeless DLI®.
- Fit the FPM gasket (supplied) inside the female threaded base of the flangeless DLI®.
- Screw the flangeless DLI® on the transformer male threaded end designed for that purpose according to the tightening precautions (***see page 3***).
- Fill the flangeless DLI® with transformer dielectric until its level reaches the flangeless DLI® highest point.
- Put back the level indicator float into place and close the flangeless DLI® with its drain tap.

STANDARD DLI® TIGHTENING PRECAUTIONS

When you tighten the HM8 bolts on the standard DLI® fixing hooks, make sure that:

⇒ The tighten coupling is not higher than 3 m.kg (30 N.m).

⇒ The attachment flange DOES NOT TOUCH the transformer cover (the FPM gasket should stay visible – approx. 1 or 2 mm).

⇒ The standard DLI® fixing hooks are tightened one after the other, clockwise in two steps. During the first step, use a loose tighten coupling on all fixing hooks. During the second step, use a tighten coupling not higher than 3 m.kg (30 N.m).

FLANGELESS DLI® TIGHTENING PRECAUTIONS

When you tighten the flangeless DLI® female threaded base on the transformer cover's male threaded end, make sure that the tighten coupling is not higher than 3 m.kg (30 N.m).

LEAKPROOFNESS PRECAUTIONS

The leakproofness of the DLI® drain tap is insured by a FPM gasket positioned at the root of the screw thread undercut.

⇒ NEVER USE Teflon® tape (or similar tape) to insure the DLI® drain tap's leakproofness through its screw thread.

The leakproofness of the flangeless DLI® female threaded base with the transformer male threaded end is insured by a FPM gasket.

⇒ NEVER USE Teflon® tape (or similar tape) to insure the leakproofness through its screw thread.

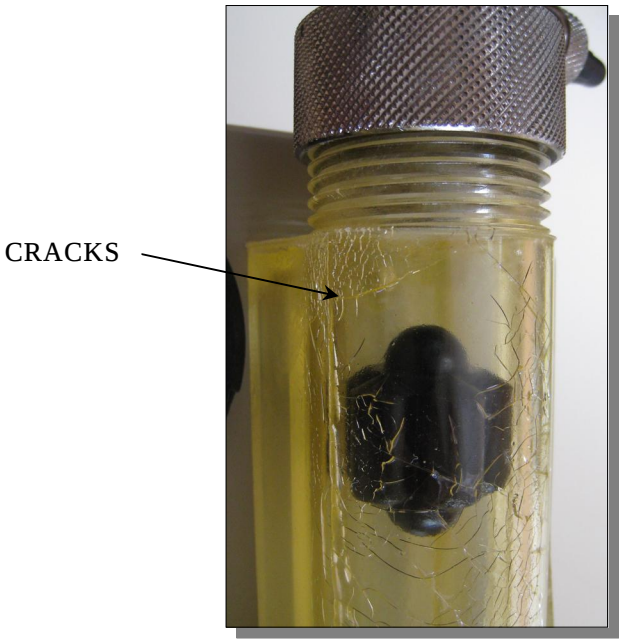
2– CLEANING PRECAUTIONS

2.1 Basic precautions

The DLI® plastic body is made of a transparent polyamide specifically treated against ultraviolet with an improved outdoor weathering behaviour.

When the DLI® plastic body needs to be cleaned, always make sure that the composition of the cleaning product (or leak detection product) does not contain any chemical listed on page 5. For your information, diesel fuel and kerosene are both excellent cleaning agents.

If you use a cleaning product containing one of these chemicals, cracks caused by the stress release inside the transparent polyamide will appear on the DLI® plastic body. These stress-cracks will cause leaks and make the DLI® inoperative until it has been replaced.



2.2 Loss of transparency

In contaminated atmosphere, successive layers of deposit can alter the DLI® plastic body transparency, and even totally occult the visibility of both the dielectric level and the float.

In that case, the best way to recover partial visibility is:

- To use a cleaning product containing no chemical listed on page 5.
- To use an ultrafine plastic or painting polishing compound used for car body.

2.3 Chemical and solvent prohibited with the DLI® plastic body

A
Acetone
Acrylonitrile
Allyl alcohol
Ammonium sulfide, 40%
Amyl alcohol
Aniline

B
Benzaldehyde
Benzoic acid*
Bromine, liquid
1,3-butanediol
1,4-butanediol
2,3-butanediol
n-butyl alcohol
t-butyl alcohol
Butylene glycol

C
Chloroform
Chlorosulfuric acid
Crotonaldehyde
Cyclohexane

D
1,2-dichloroethane
1,2-dichloroethylene
Difluoromonochloromethane
Dimethylformamide
1,4-dioxane

E
Ethyl alcohol
Ethylamine, 33%
Ethylene diamine
Ethylene glycol

F
Fluorodichloromethane
Formic acid, concentrated
Furfuralcohol

G
Gasoline (5% methanol)
Glacial acetic acid

H
Hydrazine hydrate, 80%
Hydrochloric acid, concentrated

I
Isoamyl alcohol
Isopropanol

M
Methylene chloride
Methyl ethyl ketone

N
Nitric acid, 2%
Nitric acid, 10%
Nitric acid, 30%

P
Potassium chlorate*
n-propanol
Propylene glycol

S
Sulfuric acid, concentrated

T
Tartaric acid*

**** Saturated solution in water at 23°C***

3– TECHNICAL DATA

3.1 Plastic body

- Plastic body in transparent polyamide with ultraviolet stabilizer
- Gas volume graduations in cm^3 (20-60 cm^3)

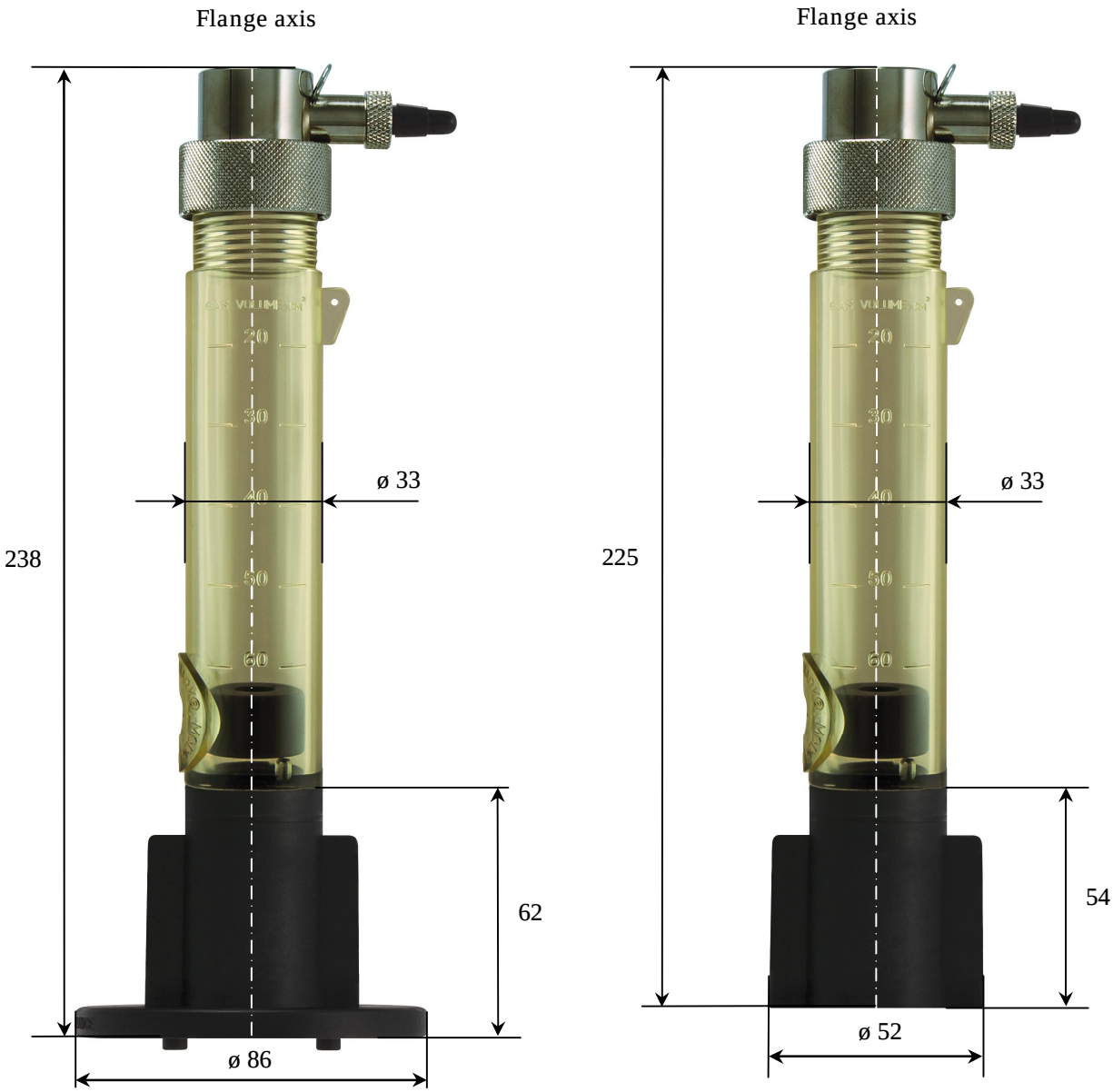
3.2 Fitting

- Standard DLI®: fitting at the base of the DLI® through a flange in composite to be installed on a 60 mm diameter opening (FPM gasket and fixing hooks supplied).
Flange diameter: 86 mm
- Flangeless DLI®: fitting at the base of the DLI® through a 1" gas female threaded base to be installed on a 1" gas male threaded end (FPM gasket supplied).
- The flange and the female threaded base do not conduct electricity.

3.3 Operating conditions

- Ambient temperature: –40°C to 65°C
- Dielectric temperature: ≤ 140°C

4– SPATIAL REQUIREMENT



5– OPTIONS

HT: high temperature body and flange

The DLI® is equipped with a transparent body that can withstand a dielectric temperature up to 170°C.

SB: flangeless

The DLI® is equipped with a 1" gas female threaded base, enabling it to be installed on a 1" gas male threaded end located on top of the transformer cover.

6– ACCESSORIES AND SPARE PARTS

Drain tap

Spare part made of nickel plated brass.

Drain tap with popoff relief valve

Spare part made of nickel plated brass.
Its calibration is defined by the customer and adjusted by Automation 2000.

Fixing hooks

Spare parts made of steel or AISI 316L stainless steel.

Flat gasket for drain tap

Spare part made of FPM for drain tap with or without popoff relief valve.

Flat gasket for flange

Spare part made of FPM.