



FM739

Photo-resistive Detectors

QRB...



QRB1...A with large flange and clamp

QRB1...A with small flange and clamp

QRB1...B with plug

QRB3... with flange and plug

Photo-resistive detectors for use with Landis & Staefa burner controls for the supervision of oil flames, especially in connection with burner controls that control and supervise small burners.

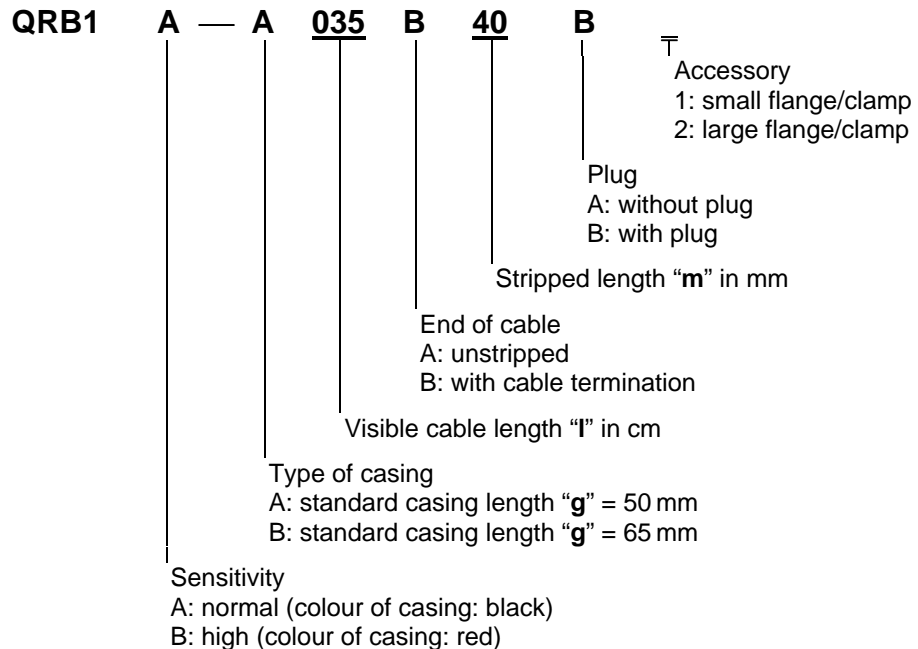
Use

The QRB... photo-resistive detectors supervise yellow-burning oil flames.

Photo-resistive detector	For use with burner controls type
QRB...	LAL..., LOA...,

Type summary

QRB1...



Dimensions available

l * (cm)	28/30	28/30	58/60	18/20	33/35	48/50	48/50	58/60	68/70	78/80	148/150
m (mm)	25	40	25	40	40	40	70	25	70	70	70

* without plug/with plug

QRB3...	Type reference	Flange	Clamp	Feature	Sensitivity
	QRB3	without	without	protection pocket	normal
	QRB3(1)	with	with	protection pocket	normal
	QRB3S	without	without	protection pocket	high
	QRB3S(1)	with	with	protection pocket	high

Accessories	Part	For use with	Part number ¹⁾
	Flange with 21 mm spacing	QRB1...	4 241 1462 0
	Flange with 36 mm spacing	QRB1...	4 241 1600 0
	Clamp	QRB1...	4 186 1096 0
	Flange	QRB3...	4 286 1490 0
	Clamp	QRB3...	4 186 8806 0

Legend 1) When ordering individual items: items are supplied together with the detector, depending on the type of detector (refer to "Type summary" above)

Ordering When ordering, please give type reference according to "Type summary".
The QRB1... with plug is always supplied without flange/clamp, and vice versa.

Example:

- QRB1 with normal sensitivity, standard length of casing 50 mm, visible cable length 200 mm, stripped length 40 mm, with cable termination, without plug, without flange/clamp **QRB1A-A020B40A**
- QRB1 as above, but **with** small flange/clamp **QRB1A-A020B40A1**

Mechanical design Small, compact photo-resistive detector with infused two-wire thermoplastic cable. Available with normal or high sensitivity and with or without flange/clamp or soft plastic plug (refer to "Type summary").

QRB1...A Detector without soft plastic plug. This detector is fixed with the help of a securing flange. A guide groove in the securing flange and a spring-loaded cam on the detector clamp not only ensure vibration-proof mounting, but also make certain the detector is always correctly sited towards the flame.

Accessories Securing flange with 21 mm (QRB1...1) or 36 mm (QRB1...2) spacing and clamp.

QRB1...B Detector with soft plastic plug. All that is required for mounting this type of detector on the burner is a hole with a lateral groove (refer to "Dimensions"). The sealing and securing ribs of the soft plastic plug hold the detector firmly in the hole. The guide guarantees correct alignment of the photo-resistance element with the flame.

QRB3... The detector is supplied with a protective tube of 17 mm diameter. This detector is always secured with flange and clamp (refer to "Accessories").

Technical data		
Perm. ambient temperature		-20 °C ... +60 °C
Degree of protection		IP 40
Mounting position		optional
Weight:		
- QRB1... (depending on type)		20 ... 35 g
- QRB3... (without cable)		approx. 35g

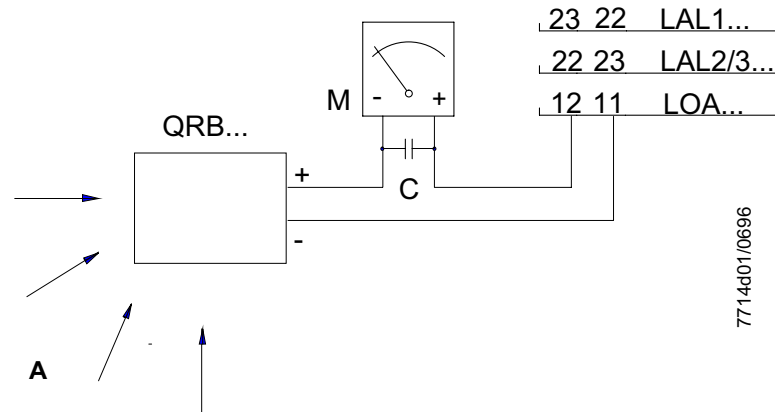
Technical features

With this type of flame supervision, the radiation of oil flames in the visible band of the spectrum is used to generate the flame signal. The light-sensitive element is a photoresistor. When there is no light, its resistance is in the $M\Omega$ range. The detector's resistance decreases as the intensity of illumination increases ($k\Omega$ range). In contrast to selenium photocells of the RAR... range, the glowing firebrick in the combustion chamber can be detected by this type of detector.

Commissioning notes

The intensity of light radiation on site is checked by measuring the detector current.

Measuring circuit



Legend

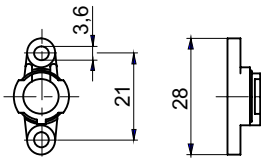
- A Incidence of light
- M DC ammeter (internal resistance 5000Ω)
- C Electrolyte condenser $100 \dots 470 \mu\text{F}$, DC $10 \dots 25 \text{ V}$

For minimal detector current values required, refer to the data sheet of the respective burner control.

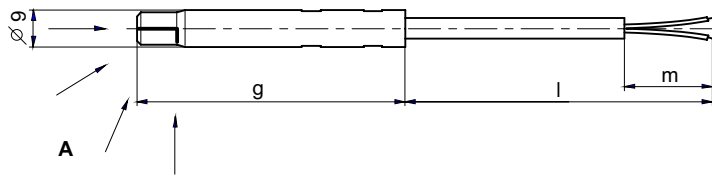
Dimensions

Dimensions in mm

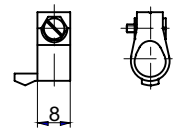
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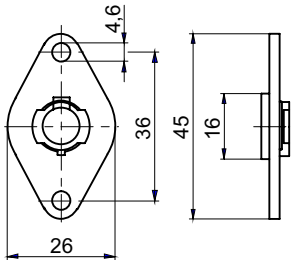
QRB1...A



4 186 1096 0

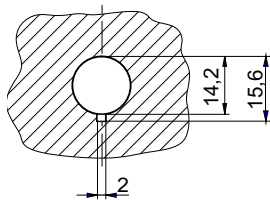
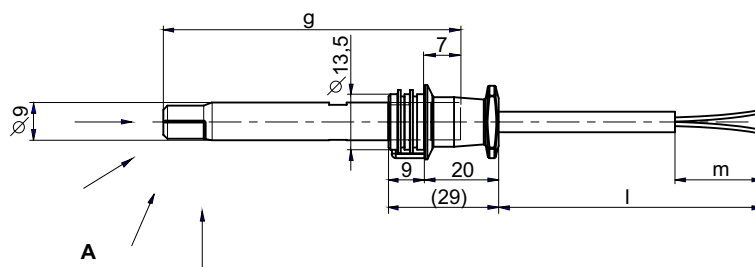


4 241 1600 0

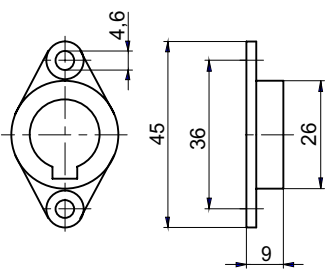


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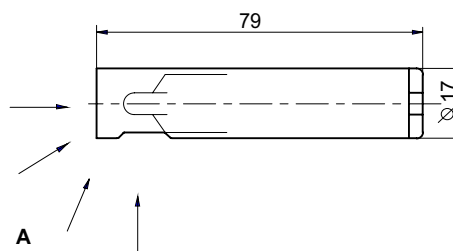
QRB1...B



4 286 1490 0



QRB3...



4 186 8806 0

