



QRB4

QRB4x-xxxxA with flange and clamp

QRB4x-xxxxB with plug

Yellow flame detector

QRB4...

**Yellow flame detector for use with Siemens burner controls, for the supervision of oil flames in the visible light spectrum.
The QRB4 is used in connection with oil burner controls in intermittent operation.**

QRB4 and this Data Sheet are intended for OEMs using the QRB4 in or on their products.

Use

The QRB4 flame detectors are designed for the supervision of yellow-burning oil flames in connection with burner controls type LME7 (on request), LME8 (on request), LMO, LMV2 and LMV3.

It is designed for frontal and lateral (90°) illumination.

The maximum spectral sensitivity of the QRB4 is about 540 nm, thus giving full consideration to the maximum level of visible light radiation of yellow-burning oil flames. Since the QRB4 also acquires certain parts of the radiation spectrum of other light sources (boiler room lighting, solar radiation, etc.), the standard regulations regarding safety in connection with extraneous light still apply.

Supplementary documentation

| Product type | Type of documentation | Documentation number |
|--------------|-----------------------|----------------------|
| LME7 | Data sheet | N7105 |
| | Basic documentation | P7105 |
| LME8 | Basic documentation | P7109 |
| LMO | Data sheet | N7130 |
| LMV27.100 | Data sheet | N7541 |
| LMV26.300A2 | Data sheet | N7547 |
| LMV37.4 | Data sheet | N7546 |
| LMV36.300A2 | Data sheet | N7547 |
| LMV36.520A1 | Data sheet | N7544 |

Warning notes



To avoid personal injury or damage to property or the environment, the following warning notes must be observed.

It is not permitted to open, interfere with or modify the flame detector, or to replace the connecting cable.

- All activities (mounting, installation, service work, etc.) must be performed by qualified staff
- Before carrying out any wiring changes in the connection area, isolate the plant from power supply (all-polar disconnection). Ensure that the plant cannot be inadvertently switched on again and that it is indeed dead. If this is not observed, there is a risk of electric shock
- Take suitable measures to provide protection against accidental contact at the electrical connections. If this is not observed, there will be a risk of electric shock
- Each time work has been carried out (mounting, installation, service work, etc.), check to ensure that wiring is in an orderly state and make the safety checks as described in *Commissioning notes*. If not observed, the safety functions are no longer ensured and there will be a risk of electric shock
- Fall, shock or damage to the housing can adversely affect the safety functions. Such detectors must not be put into operation even if they do not exhibit any damage. If not observed, the safety functions are no longer ensured and there will be a risk of electric shock

Mounting notes

Ensure that the relevant national safety regulations are complied with.

Installation notes

- Always run the detector cable separate from other cables, especially from the high-voltage ignition cable, while observing the greatest possible distance

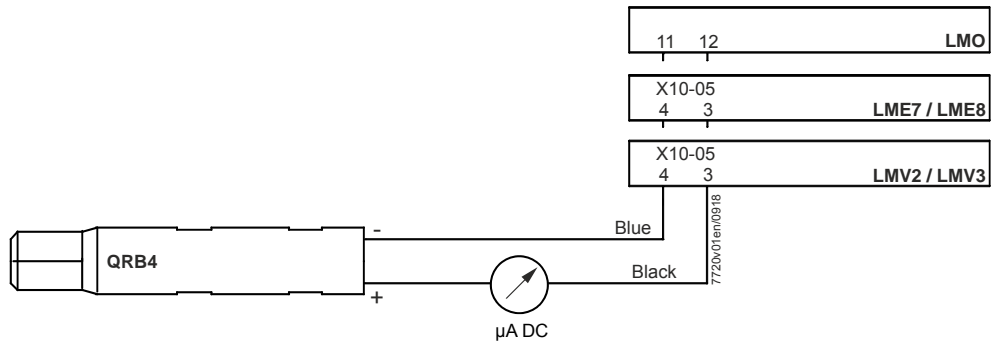
It is important to achieve practically disturbance- and loss-free signal transmission:

- Never run the detector cable together with other cables
 - Line capacitance reduces the magnitude of the flame signal
 - Use a separate cable
- Observe the permissible detector cable lengths; refer to *Technical data*

Commissioning notes

- The intensity of the radiation of light on site is checked by measuring the detector current
- For information about the measuring circuit and the minimum detector current values required, refer to the Data Sheet of the relevant type of burner control

Measuring circuit for detector current measurement



Caution!
It is essential to observe the correct polarity.

Standards and certificates



Note!
Only in connection with burner control.



EAC Conformity mark (Eurasian Conformity mark)



ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007



China RoHS
Hazardous substances table:
<http://www.siemens.com/download?A6V10883536>

Service notes

When cleaning the detector, never use burner cleansing spray. Always use a clean and dry cloth to clean the QRB4.

Disposal notes

The QRB4 contains electrical and electronic components and must not be disposed of together with domestic waste.
Local and currently valid legislation must be complied with.

Design

| | |
|------------------|---|
| General | Compact QRB4 with infused 2-wire thermoplastic cable. The detector is available with normal or high sensitivity and with or without flange / clamp or soft plastic plug (refer to <i>Type summary</i>). |
| QRB4x-xxxx | Yellow flame detector without accessories. |
| QRB4x-xxxxA | <ul style="list-style-type: none">• Secured with a flange• A guide groove in the securing flange and a cam on the detector clamp ensure vibration-free mounting and make certain that the QRB4 is always correctly sited towards the flame• Flange with 36 mm spacing, plastic version → Included in scope of delivery• Clamp, plastic version → Included in scope of delivery |
| QRB4x-xxxxB | <ul style="list-style-type: none">• With soft plastic plug• For mounting on the burner. All this requires is a hole with a lateral groove; refer to <i>Dimensions</i>• The sealing and securing ribs of the soft plastic plug hold the QRB4 firmly in the hole• A guide spring guarantees correct alignment of the QRB4 with the flame |
| Accessories QRB4 | <ul style="list-style-type: none">• Flange, 36 mm spacing, plastic version• Clamp, plastic version |

Type summary

QRB4

| Article no | Type | Sensitivity / casing color | | Casing length (g) (mm) | Visible cable length (L) (cm) | Stripped length (M) (mm) | Cable end | | Accessories | |
|------------------|----------------|----------------------------|------------|------------------------|-------------------------------|--------------------------|-----------|----------|----------------------------|---------------|
| | | Normal / black | High / red | | | | Ferrule | Stripped | Included: Flange and clamp | Mounted: Plug |
| S55723-S201-A100 | QRB4A-B036A25 | ● | --- | 68 | 36 | 25 | --- | --- | --- | --- |
| S55723-S223-A100 | QRB4A-B036B40 | ● | --- | 68 | 36 | 40 | ● | ● | --- | --- |
| S55723-S210-A100 | QRB4A-B036B40B | ● | --- | 68 | 36 | 40 | ● | ● | --- | ● |
| S55723-S202-A100 | QRB4A-B050B70 | ● | --- | 68 | 50 | 70 | ● | ● | --- | --- |
| S55723-S207-A100 | QRB4A-B050B70A | ● | --- | 68 | 50 | 70 | ● | ● | ● | --- |
| S55723-S211-A100 | QRB4A-B050B70B | ● | --- | 68 | 50 | 70 | ● | ● | --- | ● |
| S55723-S203-A100 | QRB4A-B070B70 | ● | --- | 68 | 70 | 70 | ● | ● | --- | --- |
| S55723-S208-A100 | QRB4A-B070B70A | ● | --- | 68 | 70 | 70 | ● | ● | ● | --- |
| S55723-S212-A100 | QRB4A-B070B70B | ● | --- | 68 | 70 | 70 | ● | ● | --- | ● |
| S55723-S219-A100 | QRB4A-B110B70 | ● | --- | 68 | 110 | 70 | ● | ● | --- | --- |
| S55723-S204-A100 | QRB4A-B150B70 | ● | --- | 68 | 150 | 70 | ● | ● | --- | --- |
| S55723-S222-A100 | QRB4B-B025B40B | --- | ● | 68 | 25 | 40 | ● | ● | --- | ● |
| S55723-S205-A100 | QRB4B-B036A25 | --- | ● | 68 | 36 | 25 | --- | --- | --- | --- |
| S55723-S224-A100 | QRB4B-B036B40 | --- | ● | 68 | 36 | 40 | ● | ● | --- | --- |
| S55723-S213-A100 | QRB4B-B036B40B | --- | ● | 68 | 36 | 40 | ● | ● | --- | ● |
| S55723-S206-A100 | QRB4B-B050B70 | --- | ● | 68 | 50 | 70 | ● | ● | --- | --- |
| S55723-S209-A100 | QRB4B-B050B70A | --- | ● | 68 | 50 | 70 | ● | ● | ● | --- |
| S55723-S214-A100 | QRB4B-B050B70B | --- | ● | 68 | 50 | 70 | ● | ● | --- | ● |
| S55723-S221-A100 | QRB4B-B070B70 | --- | ● | 68 | 70 | 70 | ● | ● | --- | --- |
| S55723-S215-A100 | QRB4B-B070B70B | --- | ● | 68 | 70 | 70 | ● | ● | --- | ● |
| S55723-S216-A100 | QRB4B-C036B40 | --- | ● | 108 | 36 | 40 | ● | ● | --- | --- |
| S55723-S217-A100 | QRB4B-C036B40B | --- | ● | 108 | 36 | 40 | ● | ● | --- | ● |
| S55723-S220-A100 | QRB4B-D030A25 | --- | ● | 140 | 30 | 25 | --- | --- | --- | --- |
| S55723-S218-A100 | QRB4B-D050B40B | --- | ● | 140 | 50 | 40 | ● | ● | --- | ● |

Type summary (continued)

Accessories QRB4
(version without plug)

| | Item | Article no. ¹⁾ | Type |
|---|-------------------------------------|---------------------------|-------|
|  | Flange, 36 mm spacing | S55856-Z401-A100 | AGK42 |
|  | Clamp | S55856-Z402-A100 | AGK43 |
|  | Flange with elongated hole for QRB4 | S55856-Z403-A100 | AGK44 |

¹⁾ To be specified when ordering individual items

Ordering

- When ordering, please give type reference according to *Type summary*
- QRB4 with plug is always to be ordered without flange and clamp, and vice versa

Example

- QRB4A-B050B70**
S55723-S202-A100
- Sensitivity: Normal
 - Casing length: 68 mm
 - Visible cable length: 50 cm
 - Stripped length: 70 mm
 - End of cable: With ferrule
 - Without plug
 - Accessories: Without flange and clamp
- QRB4A-B050B70A**
S55723-S209-A100
- As above, but with:
- Accessories: Flange and clamp included
- QRB4A-B050B70B**
S55723-S211-A100
- As above, but with:
- Fitted plug

Technical data

| | | |
|--------------------------|--|---|
| General unit data | Rated voltage | Max. 10 V |
| | Safety class | II |
| | Degree of protection | IP54 (For housing only; not for connections) |
| | Mounting position | Optional |
| | Detector cable | Cable included in scope of delivery Stranded copper wire 2 x 0.75 mm ² Jacket Ø 5.1 mm, PVC Cable length according to <i>Type summary</i> |
| | Weight (depending on type and accessories) | Approx. 80 g |
| | Permissible cable lengths | Max. 3 m |
| Environmental conditions | Storage | DIN EN 60721-3-1 |
| | Climatic conditions | Class 1K3 |
| | Mechanical conditions | Class 1M2 |
| | Temperature range | -20 to +60°C |
| | Humidity | <95% r.h. |
| | Transport | DIN EN 60721-3-2 |
| | Climatic conditions | Class 2K2 |
| | Mechanical conditions | Class 2M2 |
| | Temperature range | -20 to +60°C |
| | Humidity | <95% r.h. |
| | Operation | DIN EN 60721-3-3 |
| | Climatic conditions | Class 3K5 |
| | Mechanical conditions | Class 3M2 |
| | Temperature range | -20 to +60°C |
| | Humidity | <95% r.h. |
| Installation altitude | Max. 2,000 m above sea level | |



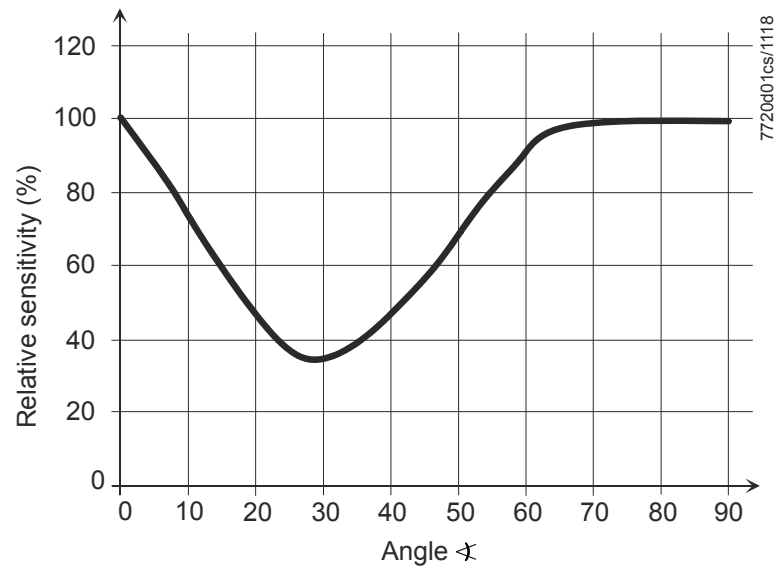
Warning!

Condensation, formation of ice, and ingress of water are not permitted. Failure to observe this poses a risk of damaging the safety functions and the risk of electric shock.

Function

Supervision of light radiation of oil flames in the visible range of the light spectrum. The light-sensitive element of the QRB4 is a photo diode. The output current of the QRB4 increases as the intensity of light increases. The output current is evaluated by the burner control to generate the flame signal.

The QRB4 is designed for frontal and lateral (90°) illumination.

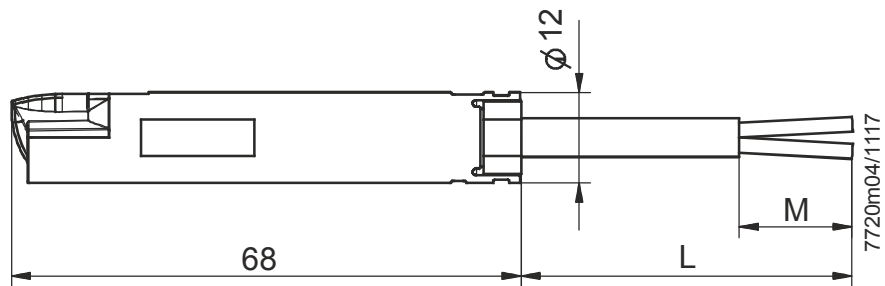


Dimensions

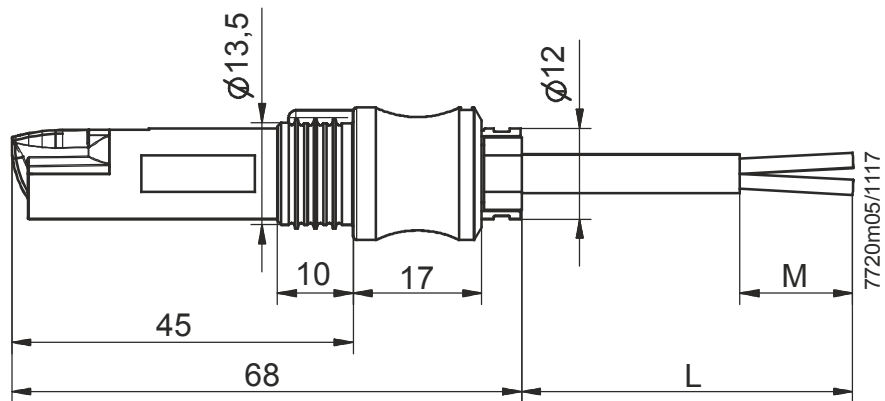
Dimensions in mm

QRB4

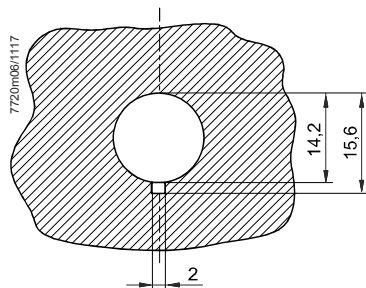
QRB4x-xxxx without plug



QRB4x-xxxxB with plug



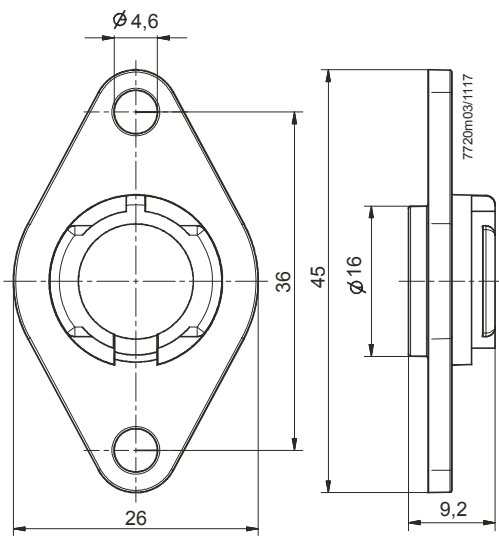
Fixing hole on the burner chassis



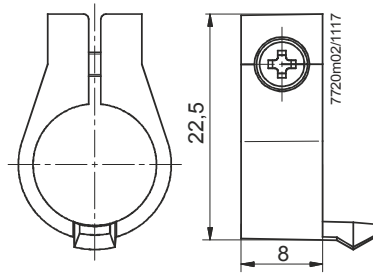
Dimensions

Dimensions in mm

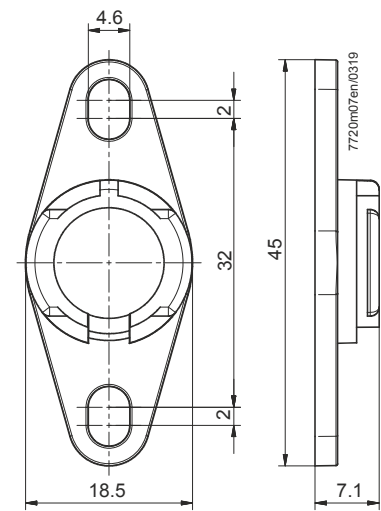
**Flange
AGK42**



**Clamp
AGK43**



**Flange
AGK44**



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