SIEMENS

7713

Selenium Photocell Detectors

RAR...

The selenium photocell detectors are designed for use with burner controls, for the supervision of oil flames.
They are used especially in connection with burner controls for the control and supervision of large-capacity burners.

The RAR... and this Data Sheet are intended for use by OEMs which integrate the flame detectors in their products!

Use

The RAR... flame detectors are used for the supervision of yellow-burning oil flames.

They are designed for use with the following types of burner controls: LAL..., LAE1..., LOK16... and LAE10...

Warning notes

To avoid injury to persons, damage to property or the environment, the following warning notes should be observed!

Do not open, interfere with or modify the flame detector!

- All activities (mounting, installation and service work, etc.) must be performed by qualified staff
- Before performing any wiring changes in the connection area of the detector, completely isolate the equipment from the mains supply (all-polar disconnection)
- Ensure protection against electric shock hazard by providing adequate protection for the connection terminals
- Each time work has been carried out (mounting, installation, service work, etc.), check to ensure that wiring is in an orderly state
- Fall or shock can adversely affect the safety functions. Such flame detectors or burner controls must not be put into operation, even if they do not exhibit any damage

Mounting notes

- Ensure that the relevant national safety regulations are complied with
- The flame detector plugs into the burner (the detector's clamp engages on the burner's light metal flange)

Installation notes

- Always run the high-voltage ignition cables separate from the unit and other cables while observing the greatest possible distances

Electrical connection of the flame detector

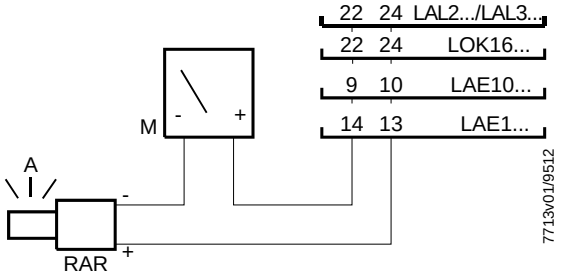
It is important to achieve practically disturbance- and loss-free signal transmission:

- 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 «Type summary»)

Commissioning notes

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

Measuring circuit



Legend

A Incidence of light
M Microammeter (DC), internal resistance 5,000 Ω

Measuring circuit for measuring the detector current. For the minimum detector currents required, refer to the Data Sheet of the relevant burner control.

Standards and certificates

Conformity to EEC directives
- Electromagnetic compatibility EMC (immunity) 89 / 336 / EEC

ISO 9001: 2000
Cert. 00739

ISO 14001: 2004
Cert. 38233

Only in connection with burner controls

Service notes

- Each time a unit has been replaced, check to ensure that wiring is in an orderly state and that the wires are firmly connected

Disposal notes

The flame detector contains electrical and electronic components and must not be disposed of together with household waste.
Local and currently valid legislation must be observed.

Mechanical design

- Housing made of dust-proof duroplast
- Photocell is under protective glass
- Flame detector can be supplied with or without flange and clamp (refer to «Type summary»)

Type summary

Type reference	Length of detector cable	Flange and clamp
RAR7	Up to 20 m	Without
RAR7(1)	Up to 20 m	With
RAR8	Up to 100 m	Without
RAR8(1)	Up to 100 m	With

When ordering, please give the type reference according to «Type summary».

Accessories

Item	Part number
Flange with radius	4 241 8855 0
Flange straight	4 241 8898 0
Clamp	4 199 8806 0

Technical data

General data	Safety class	I
	Degree of protection	IP 40
	Mounting position	optional
	Weight	approx. 85 g

Environmental conditions	**Storage**	DIN EN 60 721-3-1
	Climatic conditions	class 1K3
	Mechanical conditions	class 1M2
	Temperature range	-20...+60 °C
	Humidity	< 95 % r.F.
	Transport	DIN EN 60 721-3-2
	Climatic conditions	class 2K2
	Mechanical conditions	class 2M2
	Temperature range	-20...+60 °C
	Humidity	< 95 % r.h.
	Operation	DIN EN 60 721-3-3
	Climatic conditions	class 3K5
	Mechanical conditions	class 3M2
	Temperature range	-20...+60 °C
	Humidity	< 95 % r.h.
	Humidity	< 95 % r.h.

⚠ **Condensation, formation of ice and ingress of water are not permitted!**

Function

With this type of flame supervision, the radiation of oil flames in the visible band of the light spectrum is used for generating the flame signal.
The light-sensitive element is a selenium photocell. When illuminated, it generates DC voltage, causing a current to flow to the input of the flame signal amplifier. Hence, the RAR... is an active detector.
The selenium photocell is insensitive to infrared radiation so that glowing firebrick in the combustion chamber cannot produce a flame signal.

Dimensions

Dimensions in mm