UV monitor DUV 3.24

Use

The DUV 3.24 UV monitor was designed for use in conjunction with UV sensors and probes to permit monitoring of sources of UV radiation.

2. Description

The monitor is built for wall fitting. The 24 V AC supply arrives at the screw terminals (marked appropriately) via a connection plate, which also contains the terminals for the sensor, the on/off output, and the analogue output. The front of the housing contains three status LEDs which display the UV radiation being recorded by the sensor. The steps for the evaluation are > 70%; 50...70% and < 50%. A rotating switch permits the relay output to be programmed for UV intensity levels between 20% (this is position “0”) and 95% (position “F”), in steps of 5%.

Switching when the variation in the UV radiation is only very temporary is prevented by a time delay of approximately of 1 second. The rotating switch is positioned behind the input terminal for the sensor. It can be adjusted with a suitable tool, such as a screwdriver. On the display showing the intensity of the UV radiation, the flash function of the three status LEDs will signal errors or excessive readings.

- If the < 50% LED flashes: the sensor may be disconnected, the UV lamp may have gone out, or the radiation may have dropped below 10% of the nominal value.
- If the > 70% LED flashes: the intensity of the UV radiation is outside the range set, or more than 150% of the nominal value.

The monitor is adjusted to the measurement range relevant to the current equipment and sensor array by means of a regulation and setting mechanism that gives an LED signal “110%”. Both display elements can be accessed from the printed circuit board behind the terminals for the analogue output. It is necessary to carry out this setting process if new UV sources have been installed and/or the equipment has been cleaned.

Assembly and commissioning

The monitor must be installed by fixing it with the two holes drilled in the tabs on the housing. The incoming electricity supply, the switch output, the analogue output and the sensor are all connected at the appropriately marked terminals. Care is necessary with the polarity for the connection of the sensor and for the analogue output. Once the electricity has been connected, the LEDs will all be illuminated and the switch output activated for a few seconds, to allow a check that the device is functioning properly. Before monitoring starts, the device must be adjusted to the particular monitoring circumstances. The ”Adj.” setter and the 110 % LED are used to adjust the sensitivity (turning the former to the right increases the sensitivity). The LED makes adjustment easier by beginning to flash once a second when the 110% mark is approaching. A steady light shows that the 110% level has been reached. If the 110% level is exceeded, the light will flash again, but this time at double the speed. If the operating range has been set with a gross error, the status LEDs will begin to flash as described above. If it is not possible to adjust the DUV 3.24 monitor (because the 110% figure is not reached), the position of the sensor relative to the UV source must be altered. Finally, the rotating switch to program the threshold at which the relay is triggered must be set to the desired value.

Attachment of the sensor

The monitor can be operated in conjunction with various types of sensor construction. The assembly and attachment instructions will be included with whichever sensor is supplied.

Technical data

Size:	W x H x D: 100 x 90 x 33 mm incl. tabs for fixing and connection plate
Weight:	approx. 220 g
Supply voltage:	24 V AC / 0.2 A ; 50/60 Hz; 115 and 230 V AC optional
Relay switch output:	changeover contact, without potential, 230 V/6A, with non-reactive resistance (free of inductive and capacitive loads)
Analogue output:	0...0.5 V (0.5 V = 110%), electrically insulated, min. ballast resistor 1 kΩ
Sensor connection:	bipolar, for probes and sensors with UVD4 diode or UVC3 diode (left Anode red, right Cathode white)
Ambient temperature:	0° ..... +50°C