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Title

ROAD SIDE FLASHER TYPE MFLA2

USER MANUAL

Document Number

59-078-12

Issue

05

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REVISION CONTROL

05	Address and Logo Update	2017.04.06	CW	CW	PC
04	Add MSHA and ATEX certification info	2008.09.15	PB'	PB'	JY
03	Add magnet warning statement	2008.06.13	PB'	PB'	JY
Issue	Details	Date	Drawn	Designed	Approved

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GENERAL DESCRIPTION

The Roadside Flasher type MFLA2 is a portable explosion protected (Ex ia) LED based self-flashing strobe designed for use as a semi permanent beacon that may be placed near a hazard such as hard to see disabled road plant or unsafe roof. The MFLA2 is ideally suited to hazard warning applications in hazardous areas such as underground coalmines. The Roadside Flasher is provided with a powerful base mounted magnet to allow it to be quickly and easily attached to a break down, alternatively the Flasher can be mounted by hanging it using an 's' hook or piece of wire. The unit may be mounted in any orientation. Once mounted in place, pressing the on-off switch will start the MFLA2 flashing.

The MFLA2 will continue to flash until it is switched off, but will function continuously for six months on one set of batteries. The flash of light emitted by the Roadside Flasher covers a full 360-degree pattern. The MFLA2 is available in the five colours, red, green, yellow, blue and white. This allows the user to select a colour best suited for the hazard or warning type.

The unit may also be provided with an attached control lead, see photograph 2, to allow the Road Side Flasher to be controlled by a set of voltage free switching contacts such as those on a pressure or level switch. This control allows the MFLA2 to be used in 'non-powered' alarm and warning annunciation applications throughout an underground mine.

Photograph 1. The basic Roadside Flasher type MFLA2

Pressing the on-off-on push button switch located in the top centre of the lens will activate the Road Side Flasher. Access to this switch is via the large central hole in the lens guard plate.

ORDERING INFORMATION

The MFLA2 is available in the following configurations and colours:

MFLA2 – FF – CC

COLOUR
WH = WHITE
BL = BLUE
YL = YELLOW
RD = RED
GN = GREEN

CONFIGURATION
EC = Attached lead for external control
SB = Simple stand alone beacon
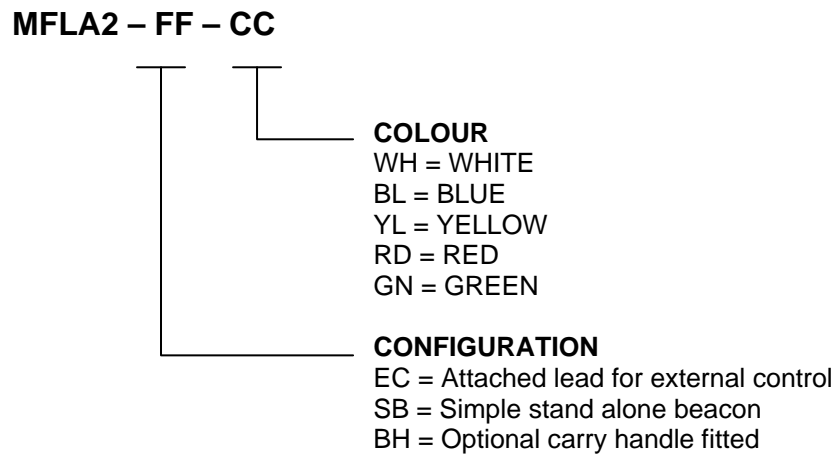BH = Optional carry handle fitted

Figure 1. Type number description

INSTALLATION

The installation of the MFLA2-SB-XX is simply a matter of fixing or attaching the Roadside Flasher in place and turning it on with the push-on / push-off switch located in the top centre of the lens.
The installation of the MFLA2-EC-XX is also straightforward, the Roadside Flasher is fixed in place and the external control lead routed to the control equipment and terminated. The external control lead should be routed and terminated in accordance with the AS2381.7 and AUS Ex 03.4003X. The installation should be tested for functionality to ensure that the lens mounted push-on / push-off switch is in the on position.

Photograph 2. MFLA2-EC-XX with attached 3m control lead.

The many holes in the lens guard plate may be used, with the aid of 'S' hooks or tie wire, to hang or secure the Road Side Flasher in place if the base mounted magnet is not practical. The on-off-on switch in the centre of the lens is visible through the large central hole of the lens guard plate. See photograph 2 above.

USER WIRING

The wiring connections to the type MFLA2-EC-XX are via a three-metre lead with two 0.75mm2 conductors. The external control lead has a braided screen that is not terminated within the MFLA2-EC-XX. This braid may be connected to earth or left unterminated; it should not be connected to any other circuit. The external control lead should not be extended beyond 100 metres for voltage drop considerations. The standalone beacon version, MFLA2-SB-XX, does not have an external control cable.

CERTIFICATION

The Roadside Flasher type MFLA2 is certified for use in Group I hazardous areas and has been awarded IECEx (**IECEx ITA 07.0013X**) and ATEX (**Nemko 08ATEX1325X**) certification. The MFLA2 has also been awarded MSHA approval (**MSHA 18-080010-0**) The MFLA2-SB-XX (stand alone beacon) requires no system assessment before it is deployed or used within the hazardous area. The MFLA2-EC-XX (external control) on the other hand requires that the entity concept parameters listed in table 1 be taken into account when installed into a system.

MFLA2-EC-XX ENTITY PARAMETERS		
Maximum output voltage of control lead	U_o	6.6V
Maximum output current of control lead	I_o	125mA
Maximum capacitance that may be attached to control lead	C_o	11.7uF
Maximum inductance that may be attached to control lead	L_o	20uH
Maximum L/R ratio of any cable connected to the MFLA2-EC-XX	L_o/R_o	2.1mH/Ω
Maximum external voltage that may connected to the control lead	U_i	0V

Table 1 MFLA2-EC-XX Entity Parameters

The MFLA2-EC-XX Road Side Flasher is designed to be controlled from the voltage free contacts of simple apparatus such as level or pressure switches, or from voltage free contacts of control relays. The Ui parameter of the MFLA2-EC-XX dictates that the contacts be voltage free i.e. no external voltages are to be applied to the contacts connected the control lead of the flasher. The Ui parameter also requires that the voltage free contacts shall be segregated from the relay coil and other intrinsically safe circuits in accordance with clause 4.x of AS60079-11. A system design / installation evaluation shall also be carried out in accordance with AS60079-25. Note that the capacitance and inductance of the supplied external control lead have not been taken into account in the above entity parameters. The MSHA approval does not apply to the MFLA2-EC-XX, this variant should not be sold in the USA.

SAFE USE

The Roadside Flasher type MFLA2 has a powerful magnet in its base to allow it to be easily attached to machinery or vehicles. This magnet may interfere with certain types of remote control equipment and cause unplanned movements of plant. Do **not** allow the magnet of the MFLA2 base to come within 1 metre of any magnetically actuated or sensitive remote control equipment.

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SPECIFICATIONS

Basic body colour ....Yellow / Black
Mounting or attachment... Base magnet or 's' hook to guard plate
Mounting orientation .... Any orientation
Battery life (operating) .... > 6 months
Battery life (shelf).. > 24 months
Flash rate...~1Hz
Flash colour .... Red, Green, Yellow, Blue and White
Luminous intensity red.. > 12,000 mcd
Luminous intensity green... > 18,000 mcd
Luminous intensity yellow... > 12,000 mcd
Luminous intensity blue .... > 5,400 mcd
Luminous intensity white .... > 20,000 mcd
External control lead length 3m
External control lead overall diameter 6mm
External control lead conductor size...$0.75mm^2$, 24/0.2 strands
External control lead self capacitance .... 150pF / m
External control lead self inductance..1uH / m
External control lead self L/R ratio...50uH / Ω
Size .... 140mm high x 100mm diameter
Ingress protection IP66
Mass .... < 2000g