Grab Wire Rope Switch with Auto Reset

GLS-AR and GLS-SS-AR Operating Instructions

GLS-AR

GLS-SS-AR

IMPORTANT NOTE:

Read and understand these instructions before installing, operating, or maintaining this equipment.

The product is designed to be a component of a customised safety orientated control system. It is the responsibility of each manufacturer to ensure the correct overall functionality of its systems and machines. IDEM, its subsidiaries and affiliates, are not in a position to guarantee all of the characteristics of a given system or product not designed by IDEM.

Application:

GLS-AR and GLS-SS-AR Grab Wire Rope Switches with Auto-Reset from IDEM have been designed to be mounted on machines and sections of plant conveyors to initiate a control signal command from any point along the installed rope length.

Operation:

The switches have a positive mechanical linkage between the switch contacts and the wire rope as per IEC 947-5-1. The switches are brought into the operational condition by pre-tensioning the rope by use of a tensioner device which clamps the rope and then hooks to the switch eyebolts. Correct tension can be observed by viewing the tension indicator on the switch housing. Once tensioned the switch contact blocks are set to the operational condition i.e. Signal Contacts Closed – Auxiliary Contacts open.

All of the switches have wire-breakage monitoring. On pulling or breakage (tension loss) of the rope, the normally closed Signal contacts are opened and the Auxiliary contacts are closed. The switches will be returned to the operational condition as soon as the rope returns to the set position.

Installation:

1. Installation of all IDEM Rope Switch systems must be in accordance with a risk assessment for the individual application. Installation must only be carried out by competent personnel and in accordance with these instructions.
2. Pulleys may only be mounted such that a complete length of the rope can be observed.
3. Rope support eyebolts are to be fitted at 2.5 m. min. to 3m. max. intervals along all rope lengths between switches. The rope must be supported no more than 500mm from the switch eyebolt. It is important that this first 500mm is not used as part of the active coverage.
4. M5 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 4 Nm. Tightening torque for the lid screws, conduit entry plugs and cable glands must be 1.5 Nm to ensure IP seal. Only use correct sizing glands for conduit entry and cable outside diameter.
5. Tensioning of rope is achieved by use of IDEM tensioner/gripper assemblies.

When installing tension to mid position, as indicated by the green arrows in the viewing window of each switch.

Check operation of all switches and the control circuits by pulling the rope at various locations along the active protection area and ensuring that the switch contacts open and close. Increase the system tension further, if required, depending upon the checks along the active length of coverage.

Typical conditions for successful operation of system are less than 75N.pulling force and less than 150mm deflection of rope between eyebolt supports.

Maintenance:

Every month: Check correct operation of system at locations along all coverage length.
Check for nominal tension setting, re-tension rope if necessary.

Every 6 months: Isolate power and remove cover.
Check screw terminal tightness and check for signs of moisture ingress.
Never attempt to repair any switch.

IDEM will not accept responsibility for failure of the switch functions if the installation and maintenance requirements shown in this sheet are not implemented.

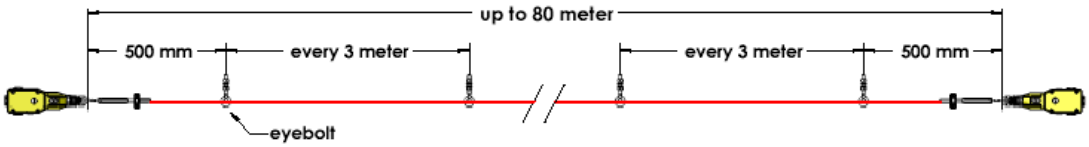
Never attempt to remove the internal screws or parts of the mechanism, any attempt to do so will invalidate the product warranty. Never attempt to repair any switch.

THESE INSTRUCTIONS FORM PART OF THE PRODUCT WARRANTY.

Grab Wire Rope Switch with Auto Reset

Recommended Rope Span Option and Fittings - (subject to an individual risk assessment for the installation):

Typical Set Up:

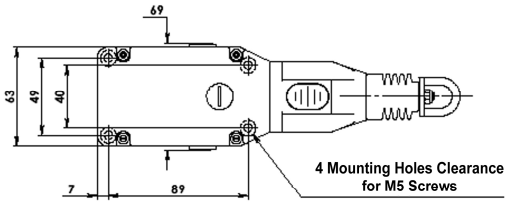


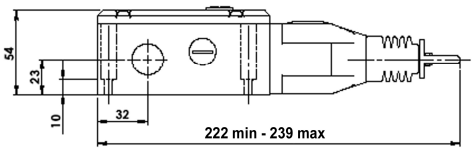
Typical Operating Characteristics:

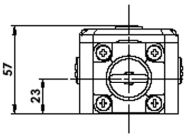
	0mm Rope Slack	4.0mm Tension Range	15.0mm Rope Pulled	17.0mm
NC Safety Contacts	Open	Closed	Open	
NO Auxiliary Contacts	Closed	Open	Closed	

Dimensions:

All dimensions mm.







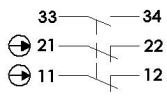
Technical Specifications:

Standards: IEC 60947-5-1

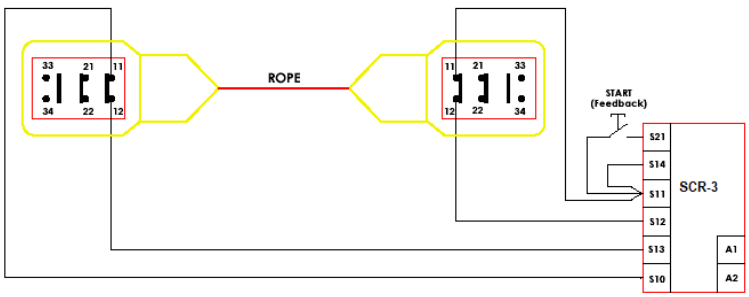
Enclosure / Cover	GLS-AR: Die-Cast – Painted Yellow GLS-SS-AR: Stainless Steel 316
External Parts	Stainless Steel
IP Rating	IP67 (IP69K S/Steel)
Rope Span	80m.
Rope Tension device	IDEM Tensioner / Gripper – Quick Fixing
Rope Type:	4.0 mm Outside Dia. Steel inner – PVC sheath
Mounting	4 x M5
Mounting position	Any
Conduit entries	3 x M20 or 3 x ½ " NPT by part number
Torque settings	Mounting M5 4.0 Nm Lid T20 Torx M4 1.5 Nm Terminals 1.0 Nm
Ambient Temperature	-25C. 80 C.
Vibration resistance	10-500Hz 0.35mm
Shock resistance	15g 11ms
Tension Force (typical mid setting)	130N.
Typical Operating Force (Rope pulled)	< 125N. < 300mm Deflection
Mechanical Life	1,000,000 operations
Approx. Weight	820 g.

Electrical:

Contact Material	Silver
Termination	Clamp up to 2.5 sq. mm conductors
Rating	Utilisation Category : AC15
Operational Rating	240V. 3A.
Thermal Current (Ith)	10A.
Rated Insulation Voltage (Ui)	500V.
Withstand Voltage (Uimp)	2500V.
Short Circuit Overload Protection	Fuse Externally 10A. (FF)



Wiring example – standard 2NC 1NO version.
NC circuits 11/12 21/22 NO circuit 33/34
Switches tensioned, able to be pulled.
Connected to a safety relay to monitor a NC contact from each switch.

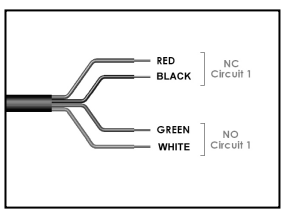


EX version specification

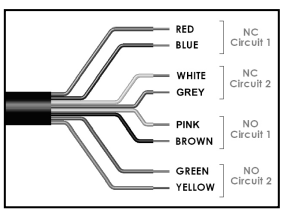
Internal switch (pre-wired)	Type LS-EX
EC Type Certificate Number	Baseefa11ATEX0267X
IEC Certificate Number	IECEx BAS11.0133X
Classification	Ex d IIC T6 (-20C Ta 60C) Gb Ex tb IIIC T85C (-20C Ta 60C) Db
Zones	1, 21, 2, 22
Rated Voltage	250V ac/dc
Rated Current	2 pole 4A. 4 pole 2.5A.

Wiring circuits for EX versions:

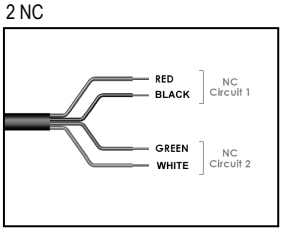
1 NC 1 NO



2 NC 2 NO



2 NC



IMPORTANT-
SPECIFIC CONDITIONS OF USE FOR EX VERSIONS:
THE INTEGRAL CABLE SHALL BE SUITABLY PROTECTED FROM PHYSICAL DAMAGE AND ABRASION.
THE INTEGRAL CABLE IS TO BE TERMINATED IN A SUITABLE TERMINAL FACILITY.

Exd IIC T6 (-20 ≤ Ta ≤ + 60C) Gb

Exd tb IIIC T85C (-20 ≤ Ta ≤ + 60C) Db IP65

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