EXPLOSION PREVENTION

Cobra EARTHING CONTROL MULTIPOINT E-MGS01-V1 (EX)

General data sheet

Scope

The MGS01-V1 earthing control system is suitable for simultaneous earthing of one to up to 10 non-conductive objects. When loading or unloading flammable, non-conductive liquids or powders, electrostatic charges can be generated. If the electrostatic energy generated is sufficiently large, a discharge spark may cause a fire or explosion. This risk is avoided by connecting all conductive parts to earth.

Benefits

Specially developed for the safe earthing of vessels and drums, among others, the StuvEx MGS01-V1 earthing control system offers the following advantages:

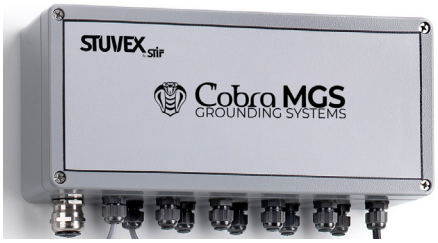
- Connection possibility for up to 10 objects to be grounded
- Safe electrostatic discharge of connected objects
- Low resistance (< 10 Ω)
- Signalled (green) for local status indication
- Signal LEDs (red and green) for local release indication
- Potential-free contact for release of the charging or discharging process
- ATEX and IECEx certified
- Complies with IEC/TS 60079-32-1 and NFPA77
- Safety class SIL 2

Zoning

The MGS01-V1-RCB belongs to device group II category 2GD and can be used in an explosive atmosphere zone 1 or 2 (gas) or in a zone 21 or 22 (dust). The MGS01-V1-PB belongs to equipment group II category 3GD and may be used in zone 2 (gas) or zone 22 (dust).



CBR/**E-MGS01-V1 EX** with spiral cable, earthing clamp and ReConn.



CBR/E-**MGS01-V1 EX** PB



CBR/E-**MGS01-V1 EX** RCB

Cobra GROUNDING SYSTEMS

Cobra EARTHING CONTROL MULTIPOINT E-MGS01-V1 (EX)

General data sheet

Operation

The MGS01 earthing system consists of an MGS01-V1-PB (Power Box) and one or more MGS01-V1-RCB (Resistance Control Box). The earthing system is designed to ground conductive objects in a safe and controlled way using an earthing clamp to ensure safe loading or unloading operations.

The earthing system is part of a preventive system in process installation.



CBR/B-**SP1-HD,** clamp and connector

Earthing control unit MGS01-V1

The MGS01-V1 earthing system consist of:

- One Power Box, type MGS01-PB
- One up to 10 Resistance Control Boxes, type MGS01-RCB
- One up to 10 loose cable(s) or coiled cable(s), type SPxx-HD
- One up to max. 10 earth clamp(s), type CSS1 or CMS1, supplied with or without connector set



CBR/B-**CMS1-SCM**, clamp with M connector

Cable or spiral cable

You can choose between flat cable (10 m), or spiral cable (3 m - 5 m - 10 m) to connect the MGS01-V1 to the objects to the clamp.

Active earthing clamp

With active clamps, the two clamping jaws are isolated from each other as well as isolated from the clamping body itself. As long as the clamps are not connected to a conductive object, the circuit between the clamping jaws remain open and no current can flow. Once the clamp is attached to the vessel or drum, the circuit is closed.

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Cobra EARTHING CONTROL MULTIPOINT E-MGS01-V1 (EX)

Technical data sheet

Application

The MGS01-V1 earthing control system ensures the simultaneous earthing of one or more conductive objects in order to carry out loading or unloading operations safely. The earthing system forms part of a preventive operating system in a process plant.

Working principle

The MGS01 earthing system, when connecting the earthing clamp, will discharge the electrostatic charge present on the object to earth in a safe and controlled manner. After discharging, the object is connected to earth by the MGS01 earthing system with a low-impedance connection. As long as the device has this low resistance (< 10 Ohms), the release contact is switched and a green LED will illuminate.

During unloading or charging, the connection is permanently monitored. If the connection is broken, a red LED will light. Via an interlock contact, the MGS01 earthing system can be connected to the process plant and automatically interrupt unloading or loading. Restarting the cycle is done by disconnecting and reconnecting the earthing clamp.

General characteristics

Power supply	100-240 V AC, 50/60 Hz
Operating temperature	-25°C to +60°C
Humidity	95% at 20°C in non-condensing conditions
Protection class	IP55
Ground resistance	≤ 10 Ω
Monitoring circuit	Intrinsically safe
Safety class	SIL 2

MGS01-PB

ATEX information	Certified for use in zones 2 (gas), zone 22 (dust) and non-risk environments
ATEX marking	II 3GD Ex ec nC IIC T4 Gc Ex tc IIIC T135°C Dc -25°C ≤ Ta ≤ +60°C
Housing	Aluminium, coated RAL7001 (silver-grey)
Dimensions (h,l,w)	230 x 400 x 111 mm
Weight	5,20 kg
Cable glands	1 x power supply, M16 x 1.5 10 x connection for MGS01-RCB, M16 x 1.5 1 x connection for multi-signaling cable, M25 x 1.5
Interlock contact	Max. 10 potential-free, NO, 1 A, 30 V DC 1 x status PSU (power supply unit), NO, 1 A, 30 V DC

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Cobra EARTHING CONTROL MULTIPOINT E-MGS01-V1 (EX)

Technical data sheet

MGS01-RCB	
ATEX/IECEx information	Certified for use in Zone 1 and 2 (gas), Zone 21 and 22 (dust) and non-risk environments
ATEX/IECEx marking	II 2(1)GD Ex mb[ia Ga] IIC T6 Gb Ex mb[ia Da] IIIC T85°C Db -25°C ≤ Ta ≤ +60°C
Housing	Aluminium, coated RAL7001 (silver-grey)
Dimensions (h, l, w)	60 x 100 x 190 mm
Weight	1,43 kg
Cable glands	1 x 4-pin connector, F, CA 3GD (for connection of flat cable or spiral cable) 1 x connection cable to MGS01-PB, 4 x 0.75 mm², 5, 10 or 20 m
Interlock contact	1 potential-free contact, NO, 1 A, 30 V DC

Accessories	
Clamp *	II 1 GD Ex c, ia IIC, IIIC T6 T85°C passive EEx i component for use in zones 0, 1, 2, 20, 21, 22
CSS1	**160 mm** stainless steel **clamp,** jaw opening 3-30 mm, -10°C to +80°C, integrated strain relief
CMS1	**210 mm** stainless steel **clamp**, jaw opening 3-30 mm, -10°C to +80°C, integrated strain relief
Cables *	II 2 GD Ex c, ia IIC, IIIC T6 T85°C passive EEx i component for use in zones 1, 21
CO1/10	3G 1,5 mm² **straight cable** without reel, UV and oil resistant cable sheathing, flame retardant, -25° to + 60°C, black, available length: 10 m
SP1-HD	3G 0,75 mm² **spiral cable**, UV and oil resistant cable sheathing, flame retardant, -30° to +80°C, blue, available lengths: 3 m, 5 m, 10 m
Connector set	M+F, plastic, blue IP65, -40°C to +100°C, with integrated strain relief
RCB mounting plate	Stainless steel **mounting plate for RCB**
ReConn01	Test device, for Cobra control units, incl. test cable and clip

Cobra GROUNDING SYSTEMS

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Cobra EARTHING CONTROL MULTIPOINT E-MGS01-V1 (EX)

Technical data sheet

Parts and ordering information

Article reference	Description
501-6005-000	CBR/E-**MGS01-V1/EX-PB**, power box
501-6008-050	CBR/E-**MGS01-V1/EX-RCB5SCF**, resistance control box with 5 m cable and F connector
501-6008-100	CBR/E-**MGS01-V1/EX-RCB10SCF**, resistance control box with 10 m cable and F connector
501-6008-200	CBR/E-**MGS01-V1/EX-RCB20SCF**, resistance control box with 20 m cable and F connector
501-6008-900	CBR/E-**MGS01-V1/EX-MP**, RCB mounting plate with storage hook for earthing clamp
503-1210-003	CBR/B-**CMS1-N**, 210 mm earthing clamp excluding connector
503-1230-003	CBR/B-**CMS1-SCM**, 210 mm earthing clamp with M connector
503-1310-003	CBR/B-**CSS1-N**, 160 mm earthing clamp (small) excluding connector
503-5900-200	CBR/B-**CSS1-SCM**, earthing clamp (small) with M connector
503-1330-003	CBR/B-**C01-LD10DC,** 10 m cable with connector set (M+F)
503-5910-130	CBR/B-**SP1-HD3SCM**, 3 m spiral cable blue with M connector
503-5910-150	CBR/B-**SP1-HD5SCM**, 5 m spiral cable blue with M connector
503-5910-200	CBR/B-**SP1-HD10SCM**, 10 m spiral cable blue with M connector
503-5910-230	CBR/B-**SP1-HD3DC**, 3 m spiral cable blue with connector (M+F)
503-5910-250	CBR/B-**SP1-HD5DC**, 5 m spiral cable blue with connector (M+F)
503-5910-300	CBR/B-**SP1-HD10DC**, 10 m spiral cable blue with connector (M+F)
503-1500-000	CBR/A-**CONSET**, connector set (M+F)
503-0900-003	CBR/A-**CST1**, clamp station
503-0900-103	CBR/A-**CHO1**, clamp hook
503-0200-100	CBR/T-**RECONN01-V1**, test device

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GROUNDING SYSTEMS



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