Medium – Control – Systeme
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MCS

USER GUIDE MCS GasCommander MV

The operation of this instrument requires thorough knowledge of and compliance with this user guide.

The evaluation instrument is not authorized for use in areas with the risk of explosion.

Liability for Function or Damage

The liability for the function of this instrument passes on to the owner or operator in so far as the instrument is improperly installed, maintained or repaired by individuals, who do not belong to the service department of the MCS company or when operation occurs, which does not comply with the proper use.

The MCS company is not liable for damage that is caused by non-compliance with the stipulations stated above.

Maintenance

The instrument must be submitted to a regular annual inspection, performed by qualified personnel. The service interval is stated on the service decal.
It is recommended that a service contract is made with the service department of MCS.

Function

The GasCommander MV is a microprocessor-controlled system utilised for the activation or deactivation of individual or all gas solenoid valves. The GasCommander MV simultaneously monitors up to 8 gas solenoid valves in regard to their function.

The GasCommander MV is available in four versions (MV2, MV4, MV6, MV8).

GasCommander **MV2** = maximum of **2 channels** (solenoid valves)
GasCommander **MV4** = maximum of **4 channels** (solenoid valves)
GasCommander **MV6** = maximum of **6 channels** (solenoid valves)
GasCommander **MV8** = maximum of **8 channels** (solenoid valves)

The output voltage of the output channels is 230V AC and is secured by means of a miniature fuse, time lag 160mA.
If solenoid valves with higher operating currents are used, the appropriate miniature fuses must be selected (refer to the data sheet of the solenoid valves).

Please note! When Ex solenoid valves are used, it is of great importance that the correct miniature fuses in accordance with the data sheet of the solenoid valves are utilised. (Follow VDE 0165!!!)

Normal operation of the GasCommander MV is indicated with the green standby LED.
When operating voltage is connected, the green standby LED flashes and a self-test of the GasCommanders MV is performed.

The gas solenoid valves can be switched to the OFF respectively ON position.
All gas solenoid valves are turned off respectively on.
Activation of the gas solenoid valves is only possible when the 2 inputs for the emergency off respectively the gas warning system are closed (see emergency off).

In the position BEREIT (STANDBY) of the key switch, the gas solenoid valves can be switched to the OFF respectively ON position. This function is very useful when the individual gas valves should not be deactivated or activated for long-time tests.

EMERGENCY Off function

The GasCommander MV can switch off the gas solenoid valves by means of the 2 inputs – emergency off (emergency off or the gas warning system). During a deactivation via the emergency off or the gas warning system an audible signal (rapid pulsing), an optical signal (flashing red LED) and the emergency off relay are activated.
The audible signal can be acknowledged by means of pressing a button, the optical signal is only switched off after all fault causes have been removed (e.g. emergency off respectively the gas warning system is inactive) and after acknowledgement.
The acknowledgement of the emergency off function is performed by means of turning the key switch to the OFF position.
The emergency off relay is deactivated.

Please note! Inputs emergency off = 230 Volt.

Fault indication

Wire breakage of a control lead, defective solenoid valve or blown fuse

- the red “fault LED” flashes
- audible signal (slower pulsing)
- collective alarm relay is activated
- green “channel LED”, on which the fault is present, flashes

After the reset button is pressed, the audible alarm is deactivated.

The “fault LED” is only deactivated after the fault has been corrected
(The lead or the solenoid valve have been replaced or the fuse has been replaced).

The collective alarm off relay is deactivated.

Relay Outputs

The GasCommander MV is equipped with two potential-free relays.
Relay 1 = fault relay
Relay 2 = emergency off relay

Start-up

The GasCommander MV may only be started up by qualified electrical personnel.
Warranty claims are not possible if it is ascertained that the GasCommander is not installed and started up in accordance with the regulations of the electrical industry.

The MCS GmbH company offers initial start-up with simultaneous instruction of the operating personnel.

Connect the GasCommander MV in accordance with the wiring diagram.

- The power supply is 230 Volt (other voltages are available on request)
- The green “Standby LED” flashes during start-up
- Key switch to the “OFF” position
- The amount of connected solenoid valves must be entered by pressing the push button “RESET/AUSWAHL” (reset/selection)

Example: GasCommander MV2 with two solenoid valves

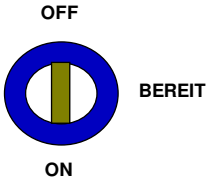
Key switch to the “OFF” position
The green “standby LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) 1 x = 1 solenoid valve active = “K1 LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) 2 x = 2 solenoid valves active = “K1” and “K2 LED” flash
Key switch to the “ON” position
Solenoid valves are opened
Green “K1” and “K2 LED” light up
“Standby LED” light up

Non-selected channels are neither activated nor monitored.

Depending on the instrument type (MV2, MV4, MV6, MV8) only the amount of maximum channels can be enabled.
It is not possible to select three channels on a GasCommander MV2.

Key switch

The GasCommander MV is equipped with three position key switch.



The key can be inserted and removed in all positions. The direction of rotation is not of importance.
The difference between ON and OFF is indicated by the BEREIT/STÖRUNG (standby/fault) LED.

Key switch positions

Position	LED Display	Function
OFF	**Green LED flashes**	**all solenoid valves are deactivated**
BEREIT (standby)	Green LED flashes	activation of individual solenoid valves
ON	**Green LED is lit**	**all solenoid valves are activated**

The difference between the horizontal ON and OFF position of the switch is indicated by the BEREIT/STÖRUNG (standby/fault) LED (see table below).
Additionally, the respective enabled solenoid valve channel LED is activated in the ON position of the key switch.
In the key switch OFF position no solenoid valve channel LEDs are displayed.

BEREIT (standby) – Function

The BEREIT (standby) function is useful when individual solenoid valves should not be deactivated (e.g. in the case of long-time tests).

Example 1: Solenoid valve 1 (K1) should not be closed, all other valves are closed

Key switch to the “BEREIT” (standby) position
Green “K1 LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) 1 x = “K1 LED” flashes
After 5 seconds solenoid valve 1 is activated
Green “K1 LED” lights up
“Bereit LED” (standby) lights up

Example 2: Solenoid valve 2 (K2) should not be closed, all other valves are closed

Key switch to the “BEREIT” (standby) position
Green “K1 LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) 1 x = “K1 LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) immediately again = “K2 LED” flashes
After 5 seconds solenoid valve 2 is activated
Green “K2 LED” lights up
“Bereit LED” (standby) lights up

Example 3: Solenoid valve 1 and 2 should not be closed, all other valves are closed

Key switch to the “BEREIT” (standby) position
Green “K1 LED” flashes
Press push button “RESET/AUSWAHL” (reset/selection) 1 x = “K1 LED” flashes
Wait for 5 seconds, solenoid valve 1 is activated, green “K1 LED” lights up
Press push button “RESET/AUSWAHL” (reset/selection) 1 x = “K2 LED” flashes
After 5 seconds solenoid valve 2 is activated
Green “K2 LED” lights up
“Bereit LED” (standby) lights up

Deactivation and deletion of the programming is performed in the key switch position “OFF”.

Only solenoid valves can be selected that were enabled during the initial starting up.

In the case of the activation of the emergency off function, these valves will be still be deactivated.

Technical Data

Subject to technical alterations.

Enclosure	wall enclosure	or blind frame for cabinet installation
Installation type	wall mounting	mounting rail attachment DIN EN 50022
Enclosure material		Hostyren/Polystyrolimpact-resistant
Dimensions	L x W x H	260 x 250 x 90 mm, incl. PG screws
Protection class	IP 50	
Control outputs	monitored voltage outputs 230V depending on the version 2, 4, 6, 8 230 V max. individually secured with 100 mA max.	
Switch outputs	group status message Horn, external	potential-free change-over contact 250V/2.5A potentional-free make contacts250V/2.5A can be acknowledged
Inputs	potentional-free inputs (break contacts) for emergency off and gas warning system	
Piezo buzzer	100dB/1m	can be actively acknowledged in the case of an alarm
Controls	1 push button 1 push button 1 key switch	Horn off, alarm reset Instrument test ON position all gas valves open OFF position all gas valves closed BEREIT (standby) position individual selection
Adjusters	via software	
Display elements	LED Display	Red MV closed per output Red Horn active collective alarm Green Standby, instrument fault
Connection values	230V/50Hz/20W	
Environmental values	max. 40 °C	0 - 95 % rel. humidity, non-condensating
Wiring technique	Terminal block 2-pin	250V/AC,
A. cross sections	1.5 mm² max.	
Options	Mounting rail attachment GasCommander Exi	for cabinet installation EX modules, buffer amplifier

Type overview GasCommander MV

Instrument type	Solenoid valves	Article number
GasCommander MV 2	2	20-2002
GasCommander MV 4	4	20-2004
GasCommander MV 6	6	20-2006
GasCommander MV 8	8	20-2008

Type overview GasCommander EX

Instrument type	Channels	Article number
GasCommander EXi 2	2	21-1002
GasCommander EXi 4	4	21-1004
GasCommander EXi 6	6	21-1006
GasCommander EXi 8	8	21-1008