dametric

CMD-DM1

Control Motor Driver for the GMS Gap Monitoring System

USER MANUAL

Content

1 General

The CMD-DM1 controls the electric stepping motor for the rotor position adjustment (axial shaft movement). The module will receive controls signals from the DCS software by a CAN interface and generate currents to the stepping motor. A set of commands will permit the motor to run in different speeds and modes. In continuous mode, the software will always control the link to the DCS software to assure that the motor will stop if the communication is lost. Drive parameters are stored inside the unit, and can only be modified thru the CAN bus and the GMS software. The procedures for parameter settings are described in the GMS program manual.

2 Technical data

Supply voltage: 24 VDC, ± 10 %.

Supply voltage to the motor: 24 VDC, ± 10 % (separate input).

Power consumption: Nominal 0.4 A, max. 2A.
Module size: Height=75 mm, Width=150 mm, Depth=110 mm.
Closure: Polycarbonate (30%GV), DIN-rail mounting.
Connections: Plug-in screw connectors, max 2.5mm2 cable area.
Panel indicators:

- ON, a green led indicates the power supply.
- CAN, a yellow led indicates the status of the communication on the CAN-bus. The led flashes at app. 1 Hz to indicate that the CAN data is updated.
- MOVE, a yellow led indicates if the motor is running, steady when going together or flashing when going apart.
- ALARM, a red led indicates a sum alarm.

Outputs bits:

- A number of bits are activated (1) or deactivated (0) due to the status of the following signals. The GMS program software reads out this information.
- Sum alarm: A deactivated bit when any enabled function alarm bit is deactivated.
- 24V alarm: An active bit when the 24VDC to the motor is within limits.

Digital inputs:

- PLC type PNP-inputs that will use 24VDC to be activated. Each input is pulled to 0VDC by a 10 kΩ resistor.
- DI CMD 1-6: 6 digital inputs.

Digital outputs:

- PLC type PNP-outputs that will generate 24VDC when the output is activated. A deactivated output is pulled to 0VDC by a 10 kΩ resistor.
- DO CMD 1-5: 5 digital outputs.

Stepping motor: CM-2NM12.
Stepping motor output: Standard 2-phase output, A+, A-, B+, B-.

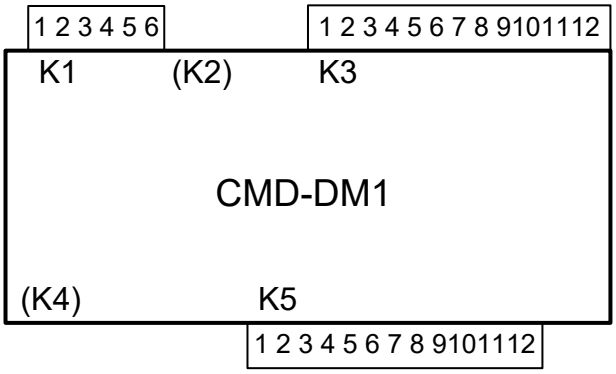
Motor phase output current, RMS; max 1.5A.
Motor phase output current, Peak; max 2.3A.
CAN interface: To GMS modules inside the cabinet, selectable termination (120Ω/indefinite).

3 Parameters

A number of parameters are reached by the GMS Panel-PC and each parameter is described when edit. A parameter list is generated with each installation for backup.

4 Connection diagram

Connection placing

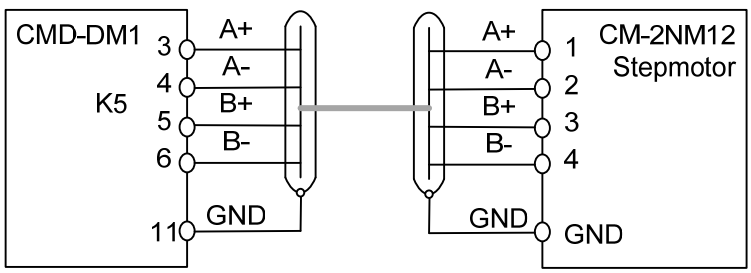


K1	**+24VDC, CAN-1**	
K1/1	+24VDC	The power supply to the module
K1/2	0VDC	The power ground
K1/3	CAN1-H	CAN-interface H-signal (use twisted pair cable for CAN-H and CAN-L)
K1/4	CAN1-L	CAN-interface L-signal
K1/5	CAN1-R	CAN-interface termination pole (connect to K1/4 for 120Ω termination)
K1/6	GND	Connect to signal ground

K3	**Digital in/Digital out**	
K3/1	DI+CMD1	Digital input 1
K3/2	DI+CMD2	Digital input 2
K3/3	DI+CMD3	Digital input 3
K3/4	DI+CMD4	Digital input 4
K3/5	DI+CMD5	Digital input 5
K3/6	DI+CMD6	Digital input 6
K3/7	DO+CMD1	Digital output 1
K3/8	DO+CMD2	Digital output 2
K3/9	DO+CMD3	Digital output 3
K3/10	DO+CMD4	Digital output 4
K3/11	DO+CMD5	Digital output 5
K3/12	GND	Connect to signal ground.

K5	**Step motor**	
K5/1	+24VDC	Motor power supply
K5/2	0VDC	Power ground
K5/3	SM1A+	Wwinding A+
K5/4	SM1A-	Winding A-
K5/5	SM1B+	Winding B+
K5/6	SM1B-	Winding B-
K5/7-10	Not used	
K5/12	GND	Connect to signal ground.

Use cable K-CM25 or K-CM25K between the CMD unit and the step motor.



5 Troubleshooting

The green POWER led is not lit.

Check the 24VDC supply at K1/1 and K1/2!
Is the 24VDC between 20 and 28VDC?
Yes: The module is broken, substitute.
No: Check the 24V power supply.

The yellow CAN led is not flashing at app. 1 Hz.

An internal program alarm exists.
Restart the module by first unplug and then plug-in the K1 connector!
Is the CAN led flashing?
Yes: The module is working, report the event and be alert if it repeats.
No: The module is broken, substitute.

The red ALARM led is lit.

An alarm exists. Note. A function alarm will only generate a sum alarm if the actual alarm is enabled to the sum alarm.
Check the GMS software for detailed information!
Are the cables properly connected?
Yes: Measure the 24Vdc to the stepping motor (K5/1 to K5/2).
Is it below 22VDC or above 26VDC
NO: An internal CMD module error exists. Replace the module.
Yes: Check the power supply.
No: Connect properly.
No function is alarming.
An internal CMD module error exists. Replace the module.

Use the service panel in the Panel-PC to identify and resolve any alarms from the CMD and step motor units.

6 Valmet article number

Metso article number: VAL0165069
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7 Contact

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