Multi-axis controller
V25

GESSMANN

The multi-axis controller V25 is available in either single-axis or multi-axis options and is a robust controller used commonly in electro-hydraulic applications. With many output options including voltage, amperage and switching contacts and many handle options the V25 series is hugly customisable. The V25 is resistant to oil, maritime conditions e.g. offshore / vessels, UV radiation typically from the sun.

1

Technical data

Mechanical life V25	8 million operating cycles
Supply voltage	See interface
Operation temperature	-40°C to +85°C
Degree of protection	up to IP67
Functional safety	PLd (EN ISO 13849) possible

Example

V25	S8	P	T	-Z	-B10	-E...	-S...	-X

Basic unit

V25.1	1-axis
V25	2-axis

Control-handle long

	Standard 100 mm*
S8	+20 mm

**Only available in combination with grip!*

Gate

P	Cross gate *(deflection angle max. 15°)*

Grip / palm grip

	Knob *(included in basic unit!)*
M	Mechanical zero interlock
T	Knob with dead man
H	Knob with signal button
D	Knob with push button KDA/70
B ...	Palm grip B... *(see page palm grip 157)*

Spring return *(includet in basic unit!)*

Z	Spring return

Degree of protection

B	Cover housing
B10	Joystick-main board sealed
B11	Joystick-main board sealed and handle function sealed, handle with drain hole

For a schematic description of the protection class, see page 139

Interface *(description see on the following page)*

E0xx	Switching output
E1xx	Voltage output
E2xx	Current output
E3xx	CAN-interface
E4xx	CANOpen Safety interface

Technical details may vary based on configuration or application! Technical data subject to change without notice!

GESSMANN

V25	S8	P	T	-Z	-B10	-E...	-S...	-X

Plug connectors

S.. Standard plug connectors *(see page 138)*

Special model

X Special / customer specified

1

Combination possibilities with our handles

Digital output

Supply voltage	9-32 V DC		
Current carrying capacity	Direction signal 150 mA		
	Zero position signal 500 mA		
Mounting depth A	60 mm		
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector		
	2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector		
	Optional with plug connector *(standard plug connectors see page 138)*		S
2 Direction signals + 1 zero position signal (galvanically isolated) per axis			
	1 axis	E001 1	
	2 axis	2	

Voltage output (not stabilized)

Supply voltage	4,75-5,25 V DC		
Current carrying capacity	Direction signal 8 mA		
Mounting depth A	60 mm		
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector		
	2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector		
	Optional with plug connector *(standard plug connectors see page 138)*		S
0,5...2,5...4,5 V redundant + 2 direction signals per axis			
	1 axis	E104 1	
	2 axis	2	
	Output options		
	Characteristic:		
	Inverse dual	1	
	Dual	2	
	Inverse Dual with dead zone +/- 3° (standard)	3	
	Dual with dead zone +/- 3°	4	

Technical details may vary based on configuration or application! Technical data subject to change without notice!

V2019/1 15.03.2019

Voltage output				
Supply voltage	9-32 V DC (*11,5-32)			
Current carrying capacity	Direction signal 150 mA			
	Zero position signal 500 mA			
Mounting depth A	60 mm			
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector			
	2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector			
	Optional with plug connector *(standard plug connectors see page 138)*			S
0,5...2,5...4,5 V redundant + 2 direction signals + 1 zero position signal (galvanically isolated) per axis				
	1 axis	E112 1		
	2 axis	2		
	3 axis*	3		
	4 axis*	4		
0...5...10 V redundant + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, supply voltage 11,5 - 32 V DC				
	1 axis	E132 1		
	2 axis	2		
	3 axis*	3		
	4 axis*	4		
10...0...10 V + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, supply voltage 11,5 - 32 V DC, sensor redundant with error monitoring and error signal				
	1 axis	E136 1		
	2 axis	2		
	3 axis*	3		
	4 axis*	4		
	Output options			
	Characteristic:			
	Inverse dual *¹		1	
	Dual *¹		2	
	Inverse dual with dead zone +/- 3° *¹ (standard)		3	
	Dual with dead zone +/- 3° *¹		4	
	*¹ *not combinable with output E136X*			
	Single *²		5	
	Single with dead zone +/- 3° *² (standard)		6	
	*² *not combinable with output E112X and E132X*			
	Digital output signals:			
	Output signals standard:			
	Direction signals and zero position signals 1,5A 24 V DC		1	

**Axis for handle functions, interface can vary depending upon actuation element!*

Voltage output with other value on request!

1

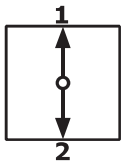
Current output				
Supply voltage	9-32 V DC			
Current carrying capacity	Direction signal 150 mA			
	Zero position signal 500 mA			
Mounting depth A	60 mm			
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector			
	2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector			
	Optional with plug connector *(standard plug connectors see page 138)*			S
0...10...20 mA + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, sensor redundant with error monitoring and error signal				
	1 axis		E206 1	
	2 axis		2	
	3 axis*		3	
	4 axis*		4	
20...0...20 mA + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, sensor redundant with error monitoring and error signal				
	1 axis		E208 1	
	2 axis		2	
	3 axis*		3	
	4 axis*		4	
4...12...20 mA + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, sensor redundant with error monitoring and error signal				
	1 axis		E214 1	
	2 axis		2	
	3 axis*		3	
	4 axis*		4	
20...4...20 mA + 2 direction signals + 1 zero position signal (galvanically isolated) per axis, sensor redundant with error monitoring and error signal				
	1 axis		E216 1	
	2 axis		2	
	3 axis*		3	
	4 axis*		4	
	Output options			
	Single			5
	Single with dead zone +/- 3° (standard)			6
	Digital output signals:			
	Output signals standard:			
	Direction signals and zero position signals 1,5A 24 V DC			1

**Axis for handle functions, interface can vary depending upon actuation element!*

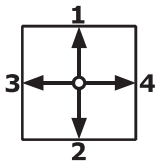
Current output with other value on request!

Identification of the installation variants with switching directions:

V25.1



V25



CAN		
Supply voltage	9-32 V DC	
Idle current consumption	120 mA (24 V DC)	
Current carrying capacity	Direction signal 100 mA	
	Zero position signal 100 mA	
	External digital output for LEDs 5 mA - 30 mA (dependent on the number of LEDs)	
	Digital switching output (potential-free) 100 mA	
Mounting depth A	60 mm (Expansion stage 1)	
	75 mm (Expansion stage 2)	
	95 mm (Expansion stage 3)	
Protocol	CANOpen CiA DS 301 or SAE J1939	
Baud rate	20 kBit/s to 1 Mbit/s (standard 250 kBit/s)	
Output value	255...0...255	
Wiring	CAN (IN) cable 300 mm with plug connector M12 (male)	
	CAN (OUT) cable 300 mm with plug connector M12 (female)	
	External in-/outputs cable 300 mm long without plug connector	
	External in-/outputs cable 300 mm long without plug connector (additional from 32 in-/outputs)	
	Optional with plug connector *(standard plug connectors see page 138)*	S

CAN V25 expansion stage 1	E304 1	
- 4 analog joystick axis		
- 15 digital joystick functions		
- Input for capacitive sensor		
Main-axis with additional digital outputs separately wired (not via CAN)		
- 2 direction signals per main axis	1	

CAN V25 expansion stage 2	E305 1	
- 7 analog joystick axis		
- 15 digital joystick functions		
- 2 inputs for capacitive sensors		
With additional external in-/outputs		
- 8 external LED-outputs (dimmable optional), 1 switching output (potential-free, 100 mA), 8 external digital inputs	2	
- 16 external LED-outputs (dimmable optional), 1 switching output (potential-free, 100 mA), 16 external digital inputs	3	
External LED-outputs can be used in the grip for LEDs		

1

CAN V25 expansion stage 3	E306 1	
- 10 analog joystick axis		
- 15 digital joystick functions		
- 2 inputs for capacitive sensors		
With additional external in-/outputs		
- 8 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 8 external digital inputs	2	
- 16 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 16 external digital inputs	3	
- 24 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 24 external digital inputs	4	
- 32 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 32 external digital inputs	5	
External LED-outputs can be used in the grip for LEDs		
Main-axis with additional digital outputs separately wired (not via CAN)		
- 2 direction signals + 1 zero position signal (potential-free) per axis		3
With additional analog outputs on request!		

CANopen safety		
Supply voltage	9-32 V DC	
Idle current consumption	120 mA (24 V DC)	
Current carrying capacity	Direction signal 100 mA	
	Zero position signal 100 mA (potential-free)	
	External digital output for LEDs 5 mA - 30 mA (dependent on the number of LEDs)	
	Digital switching output (potential-free) 100 mA	
Baud rate	20 kBit/s to 1 MBit/s (standard 250 kBit/s)	
Output value	255...0...255	
Mounting depth	60 mm (Expansion stage 1)	
	75 mm (Expansion stage 2)	
	95 mm (Expansion stage 3)	
Protocol	CANopen Safety CIA 304	
Wiring	CAN (IN) cable 300 mm with plug connector M12 (male)	
	CAN (OUT) cable 300 mm with plug connector M12 (female)	
	External in-/outputs cable 300 mm long without plug connector	
	External in-/outputs cable 300 mm long without plug connector (additional from 32 in-/outputs)	
	Optional with plug connector *(standard plug connectors see page 138)*	S
CANopen Safety expansion stage 1	E404 1	
- 4 analog joystick axis		
- 15 digital joystick functions		
- Input for capacitive sensor		
Main-axis with additional digital outputs separately wired (not via CAN)		
- 2 direction signals per main axis		1
CANopen safety expansion stage 2	E405 1	
- 7 analog joystick axis		
- 15 digital joystick functions		
- 2 inputs for capacitive sensors		
With additional external in-/outputs		
- 8 external LED-outputs (dimmable optional), 1 switching output (potential-free, 100 mA), 8 external digital inputs	2	
- 16 external LED-outputs (dimmable optional), 1 switching output (potential-free, 100 mA), 16 external digital inputs	3	
External LED-outputs can be used in the grip for LEDs		

Technical details may vary based on configuration or application! Technical data subject to change without notice!

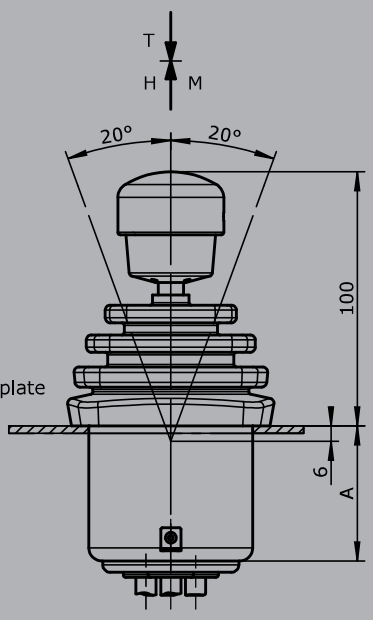
V2019/1 15.03.2019

CANopen safety expansion stage 3	E406 1	
- 10 analog joystick axis		
- 15 digital joystick functions		
- 2 inputs for capacitive sensor		
With additional external in-/outputs		
- 8 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 8 external digital inputs	2	
- 16 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 16 external digital inputs	3	
- 24 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 24 external digital inputs	4	
- 32 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 32 external digital inputs	5	
External LED-outputs can be used in the grip for LEDs		
Main-axis with additional digital outputs separately wired (not via CAN)		
- 2 direction signals + 1 zero position signal (potential-free) per axis		3
With additional analog outputs on request!		

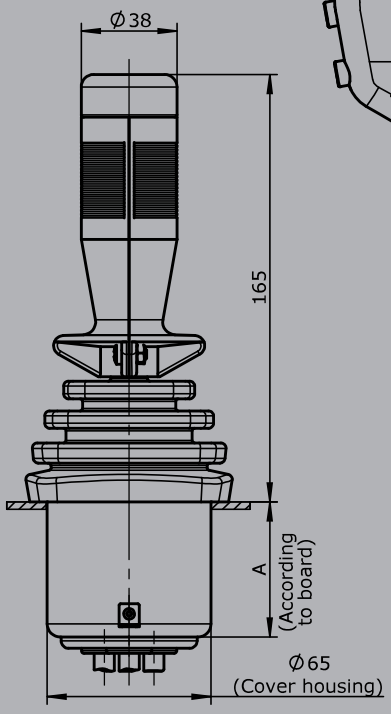
Attachments	
Z01 Mating connector M12 male insert with 2 m cable	20201140
Z02 Mating connector M12 female insert with 2 m cable	20202298

1

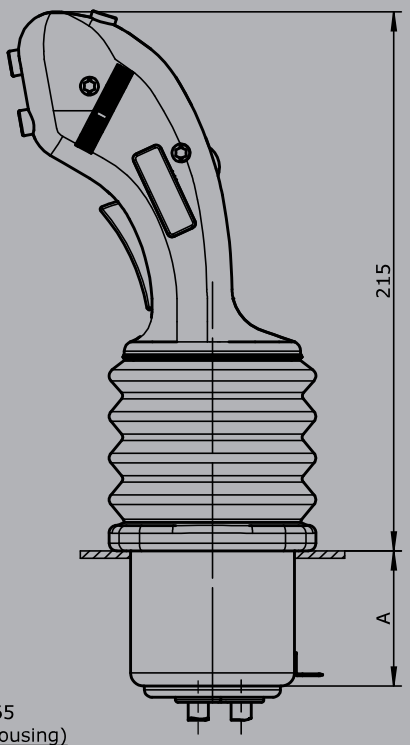
T = Dead man's button
H = Signal button
M = Latch for mechanical zero interlock

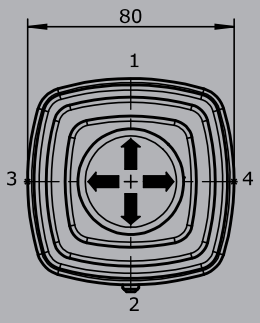


Palm grip B1

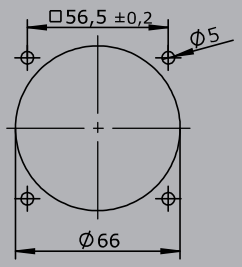


Palm grip B3

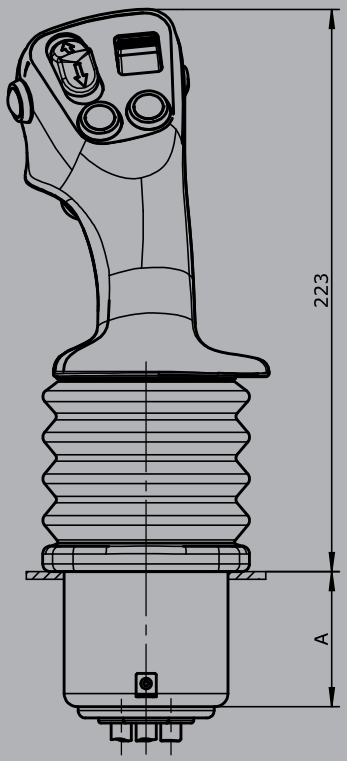




Hole pattern



Palm grip B25



* Optional IP 67

Technical details may vary based on configuration or application! Technical data subject to change without notice!

V2019/1 15.03.2019