Multi-Axis Controller
V25

The V25 is a compact and robust joystick commonly used in electro-hydraulic applications. Long life and high reliability is ensured by the latest contactless hall-technology. With many outputs and grip options the V25 series is hugely customisable.

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 compatible (EN ISO 13849, complies SIL2 to DIN EN IEC 61508)

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 a handle!*

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 154)*

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 grip function sealed, grip with drain hole

For a schematic description of the protection class, see page 121

Interface *(description see on the following page)*

E0xx	Switching output
E1xx	Voltage output
E2xx	Current output
E3xx	CAN-interface
E4xx	CANopen Safety interface
E9xx	Other outputs

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

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GESSMANN

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

Plug connectors

S...	Standard plug connectors *(see page 120)*

Special model

X	Special / customer specified

Combination possibilities with our grips

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 120)*		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 120)*		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!

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 120)*			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 grip functions, interface can vary depending upon actuation element!*

Voltage output with other value on request!

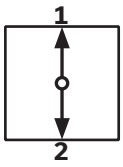
Current output					
Supply voltage	9-32 V DC				
Current carrying capacity	Direction signal 150 mA				
	Zero position signal 500 mA				
Mounting depth A	60 mm				
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector				
	2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector				
	Optional with plug connector *(standard plug connectors see page 120)*				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 grip functions, interface can vary depending upon actuation element!*

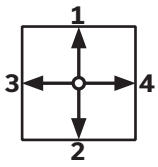
Current output with other value on request!

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)		
	70 mm (expansion stage 2)		
	90 mm (expansion stage 3)		
Protocol	CANopen CiA DS 301 or SAE J1939 (based on)		
Baud rate	20 kBit/s to 1 Mbit/s (standard 250 kBit/s)		
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 120)*		S
CAN 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 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 for LEDs in the grip*			

CAN 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 for LEDs in the grip*		
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)	
Mounting depth	60 mm (expansion stage 1)	
	70 mm (expansion stage 2)	
	90 mm (expansion stage 3)	
Protocol	CANopen Safety EN50325-5	
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 120)*	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 for LEDs in the grip*		

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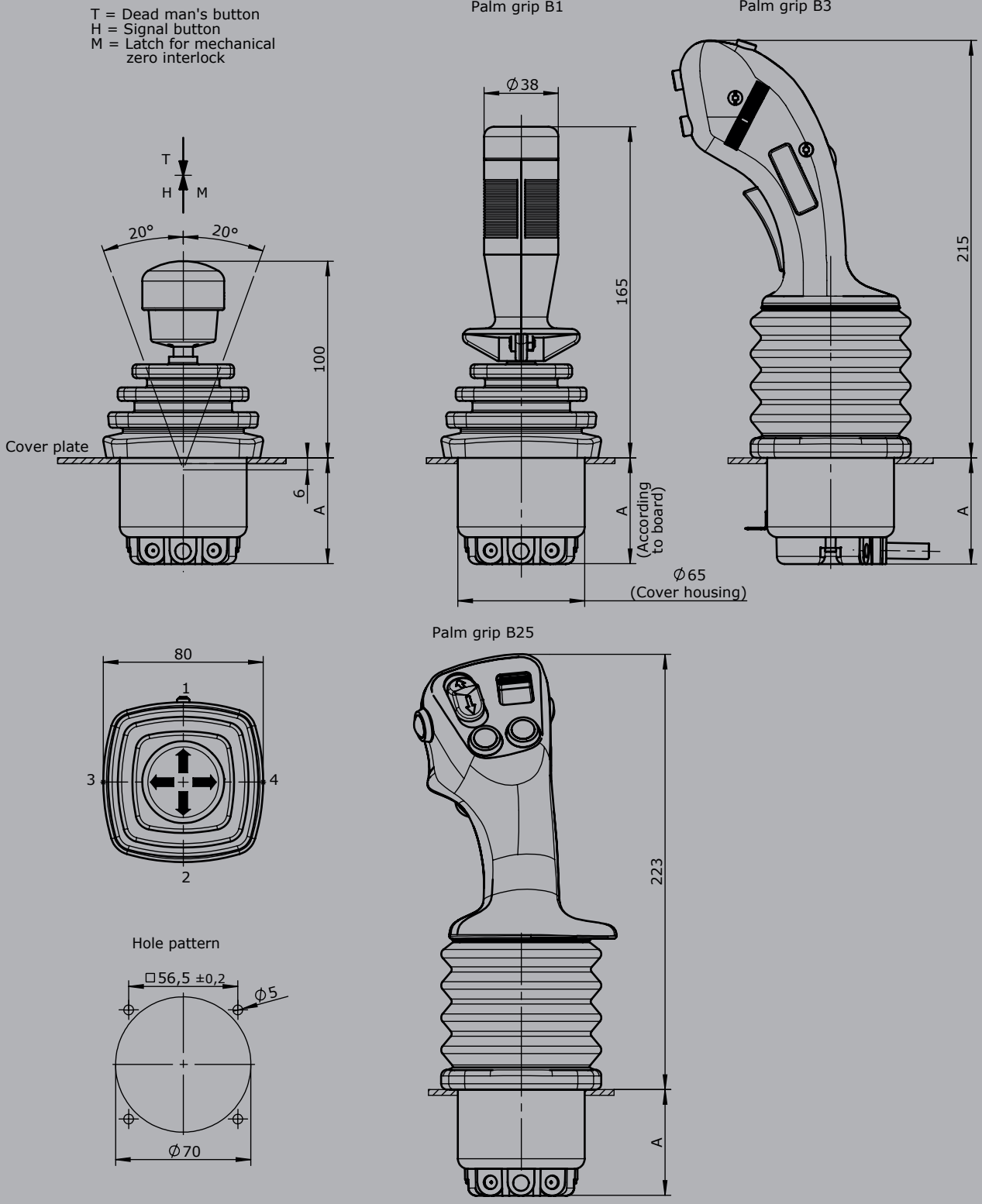
CANopen Safety expansion stage 3	E406 1	
- 10 analog joystick axis		
- 15 digital joystick functions		
- 2 inputs for capacitive sensor		
With additional external in-/outputs		
- 8 external LED-outputs (dimmable optional), 2 switching outputs (potential-free, 100 mA), 8 external digital inputs	2	
- 16 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 for LEDs in the grip*		
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!		

Other outputs			
Voltage output for PVG32 0,25...0,5...0,75Us, power supply 9-32 V DC			
Option	Input for capacitive sensor		
Mounting depth A	60 mm		
Wiring:	1. cable 14 x 0,25 mm² 300 mm long without plug connector		
	2. cable 14 x 0,25 mm² 300 mm long without plug connector (optional for grip function)		
	Optional with plug connector *(standard plug connectors see page 120)*		S
	1 axis	E907 1	
	2 axis	2	
	3 axis	3	
	4 axis	4	
Main-axis with additional direction signals and zero direction signals (potential-free) per main-axis			3

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



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