

Multi-axis Controller

V28



The V28 is a compact 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 V28 series is hugely customisable.

Technical data

Mechanical life V28	5 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)



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		V28	P	T	-GS9	-B10	-E...	-S...	-X
Basic unit									
V28.1	1-axis								
V28	2-axis								
Gate									
P	Cross gate								
Grip / palm grip									
	Knob <i>(included in basic unit!)</i>								
D	Knob with push button								
GS9	Hall-twist grip with spring return								
GS9-D	Hall-twist grip with spring return and push button on top								
B ...	Palm grip B... <i>(see page palm grip 170)</i>								
Spring return <i>(included in basic unit!)</i>									
Z	Spring return								
Degree of protection									
B10	Joystick-main board sealed								
B11	Joystick-main board sealed and grip function sealed, grip with drain hole								
<i>For a schematic description of the protection class, see page 150</i>									
Interface <i>(description see on the following page)</i>									
E1xx	Voltage output								
E2xx	Current output								
E3xx	CAN-interface								
E4xx	CANopen Safety interface								
Plug connectors									
S...	Standard plug connectors <i>(see page 149)</i>								
Special model									
X	Special / customer specified								

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

Multi-axis Controller

V28



Combination possibilities with our grips

B5  p. 205	B32  p. 183	B33  p. 185	GS9  p. 66
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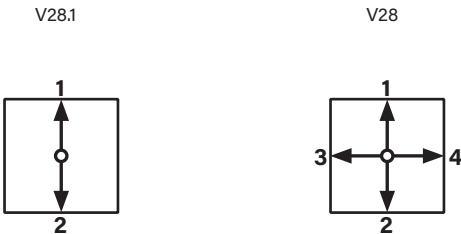
Voltage output (not stabilized)			
Supply voltage	4,75-5,25 V DC		
Current carrying capacity	Direction signal 8 mA		
Mounting depth A	35 mm		
Wiring	1. cable 14 x 0,25 mm² 500 mm long without plug connector 2. cable 14 x 0,25 mm² (optional for grip function) 500 mm long without plug connector		
Optional with plug connector (standard plug connectors see page 149)			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

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	35 mm
Wiring	1. cable 14 x 0,25 mm ² 500 mm long without plug connector
	2. cable 14 x 0,25 mm ² (optional for grip function) 500 mm long without plug connector
	Optional with plug connector (<i>standard plug connectors see page 149</i>)
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
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
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
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	
*Axis for grip functions, interface can vary depending upon actuation element!	
Voltage output with other value on request!	

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Current output				
Supply voltage	9-32 V DC			
Current carrying capacity	Direction signal 150 mA			
	Zero position signal 500 mA			
Mounting depth A	35 mm			
Wiring	1. cable 14 x 0,25 mm ² 500 mm long without plug connector			
	2. cable 14 x 0,25 mm ² (optional for grip function) 500 mm long without plug connector			
	Optional with plug connector (<i>standard plug connectors see page 149</i>)			
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	
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...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	
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	
Output options				
	Single			5
	Single with dead zone +/- 3° (standard)			6
*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:



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)
Mounting depth A	35 mm
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
Optional with plug connector (<i>standard plug connectors see page 149</i>)	

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CAN

- 4 analog joystick axis
- 8 digital joystick functions (incl. input for capacitive sensor)

E314 1

With additional external outputs

- 8 external LED-outputs

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**External LED-outputs can be used for LEDs in the grip*

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)
Baud rate	20 kBit/s to 1 MBit/s (standard 250 kBit/s)
Output value	255...0...255
Mounting depth	35 mm
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
Optional with plug connector (<i>standard plug connectors see page 149</i>)	

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CANopen Safety

- 4 analog joystick axis
- 8 digital joystick functions (incl. input for capacitive sensor)

E413 1

With additional external outputs

- 8 external LED-outputs (dimmable optional), 1 switching output (potential-free, 100 mA), 8 external digital inputs

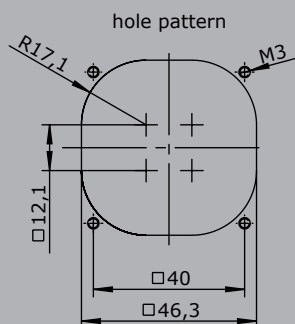
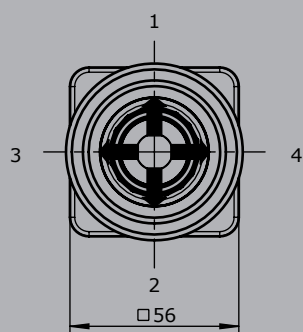
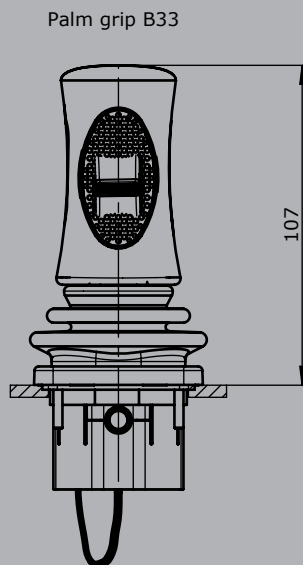
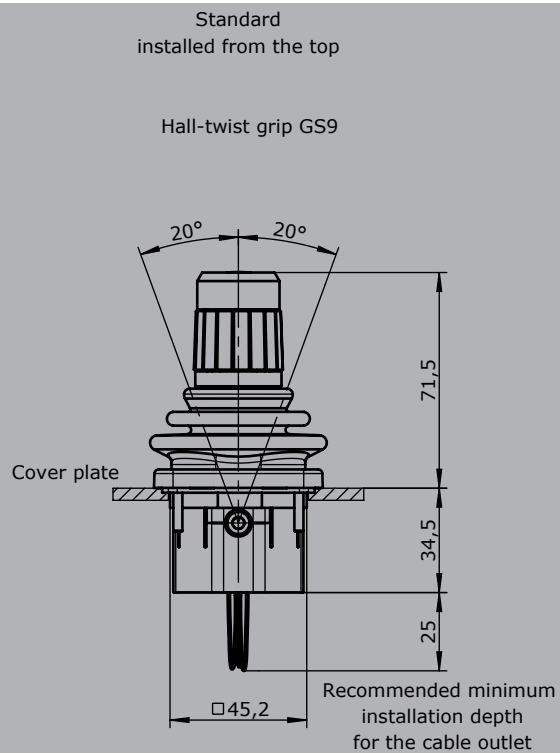
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**External LED-outputs can be used for LEDs in the grip*

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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knob

installed from below

