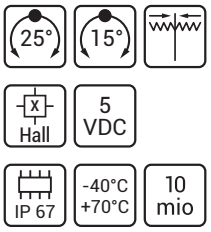
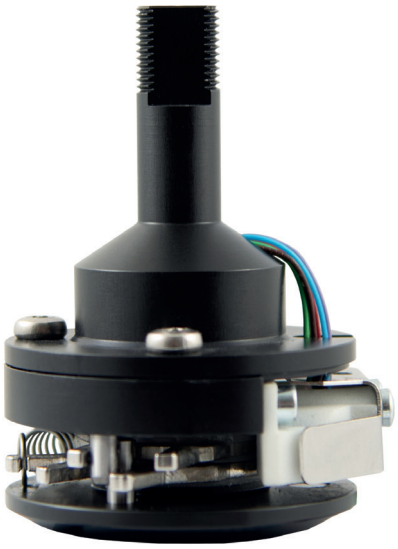
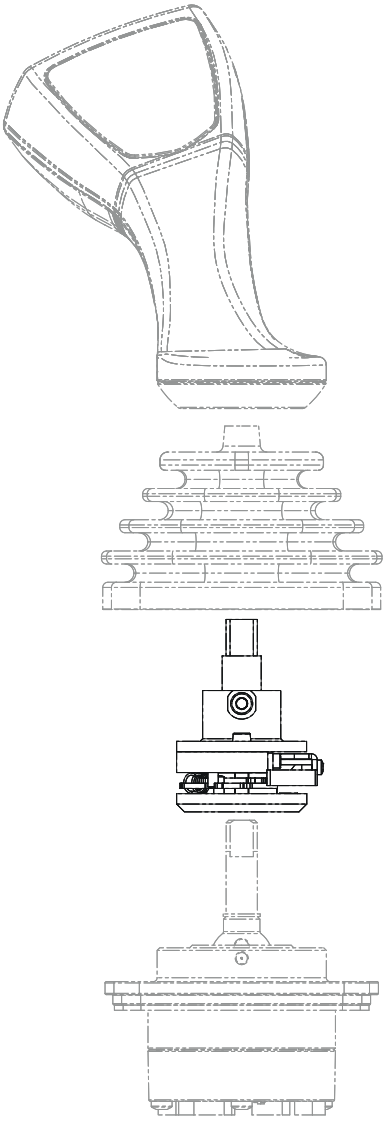
Rotary module

3rd axis for joysticks.







The compact DM rotary module converts a mechanical rotary movement into electrical output signals and can be used for various applications.

For example, it extends the control functions of a joystick by one more axis. For this purpose, the module is installed between the joystick and the handle, covered by a rubber boot. The module can be installed in various joystick/handle combinations.

Other applications are possible, e.g. fixed mounting on one side or mounting on a fixed shaft.

The standard angle of rotation to the left or right is 25°, the return to the centre position is made by a spring.

An integrated contactless Hall sensor system provides redundant analogue output signals as well as 2 digital direction signals.

The module, developed for high requirements and operating conditions, shows its reliability in mobile machines (in the construction, agricultural and forestry sectors) and in a wide variety of cranes.

Version

Rotary module:
For joystick - handle combinations according to combination table
Operating mode: to the left 25° and to the right 25° with spring return to middle position
Output signal according to assignment table
Mounting on SPOBU joystick lever 12 mm
Mounting option for handles according to combination table
Supply voltage 5 VDC ± 10%

Version with 15° rotation to the left and 15° to the right

Special versions:
Other joystick-handle combinations, use in other applications

Combination table rotary module: Joystick - handle

	Joystick	HS2xT	NS3x	NNS0
Handle				
G56		✓	✓	✓
G58		✓	✓	✓
UGA		✓	✓	✓

Project planning information:
HS2T, NS3 and NNS0 joystick with S3 rubber boot.
Lever length joystick: HS2xT: 55 mm, NS3x: 80 mm, NNS0x: 80 mm
A maximum of 10 individual wires are available for wiring of additional handle control devices.

Further technical information / dimensions / output signals

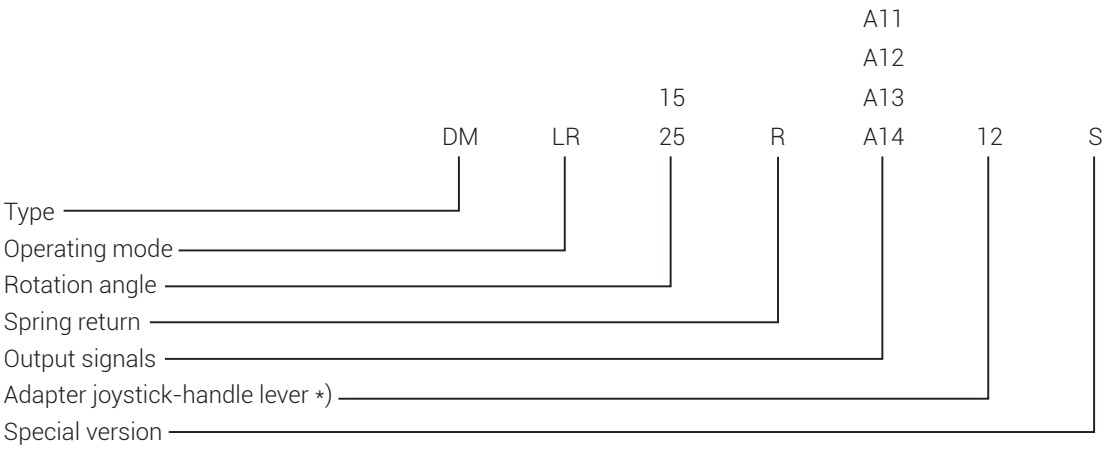
see TI-DM-...

Assignment table operating mode - output signal:

Operating mode:	Output signal	Out 1	Out 2	Out 3	Out 4
		Analogue signal	Analogue signal	Digital signal	Digital signal
Left-right:					
Left-right **LR**	A11	0,5..2,5...4,5 VDC	0,5..2,5...4,5 VDC	Direction CW	Direction CCW
Left-right **LR**	A12	0,5..2,5...4,5 VDC	4,5...2,5....0,5 VDC	Direction CW	Direction CCW
Left-right **LR**	A13	0..2,5...5 VDC	0..2,5...5 VDC	Direction CW	Direction CCW
Left-right **LR**	A14	0..2,5...5 VDC	5...2,5....0 VDC	Direction CW	Direction CCW

1) When installed according to combination table in Spobu joystick.

Type code



Note:
*) For joystick HS2xT, NS3x and NNS0 adapter version 12.

Options

Adapter for customised handle lever/joysticks/handles
Use in safety-relevant applications/PLd-capable
Extension cable 1 m with 1x coupling and 1x open end

Technical information

Mechanical:

- Angle of rotation (standard):	25°-0°-25°
- Service life:	10 million switching cycles
- Operating temperature:	-40°C...+70°C
- Protection class electronics:	encapsulated, IP67
- Breakaway moment from centre position:	0.3 Nm
- Deflection moment:	0.5 Nm
- Impact strength left - right:	60 Nm
- Compressive load Z-direction:	500 N

Electrical:

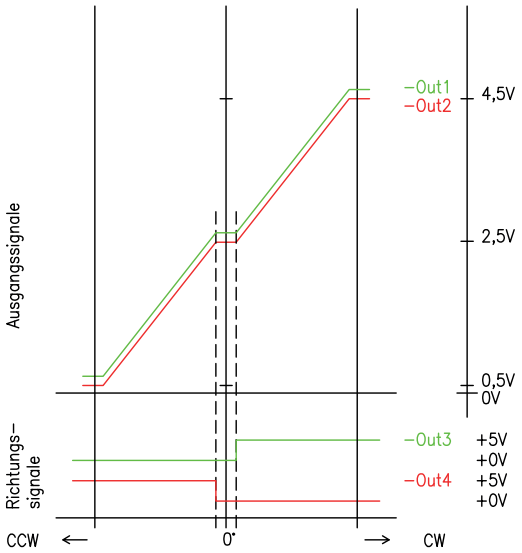
- Supply voltage:	5 VDC ± 10%
- Current consumption:	< 35 mA
- Reverse polarity protection input:	8 VDC
- Overvoltage protection input:	55 VDC
- Overvoltage protection outputs:	30 VDC
- Output load:	>= 10 kOhm
- EMC:	DIN EN61000-4-2 Discharge of static electricity DIN EN61000-4-3 Interference resistance against high-frequency fields DIN EN61000-6-3 Interference emission residential business area

Output signals

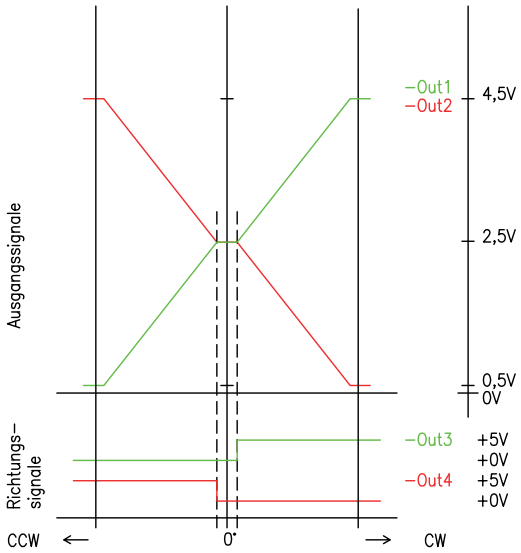
Tolerance output signals ± 200 mV

Versions for left-right rotation:

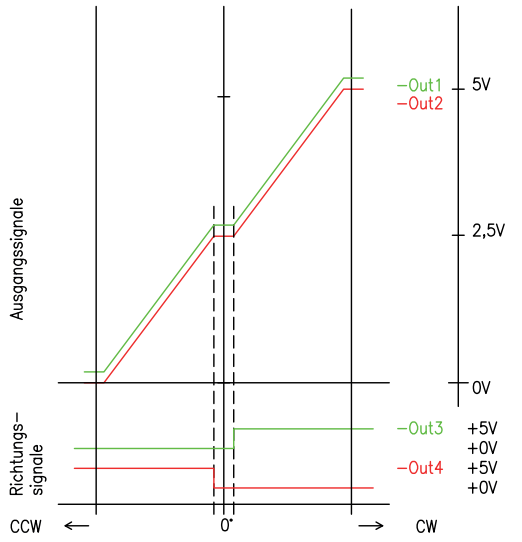
A11:



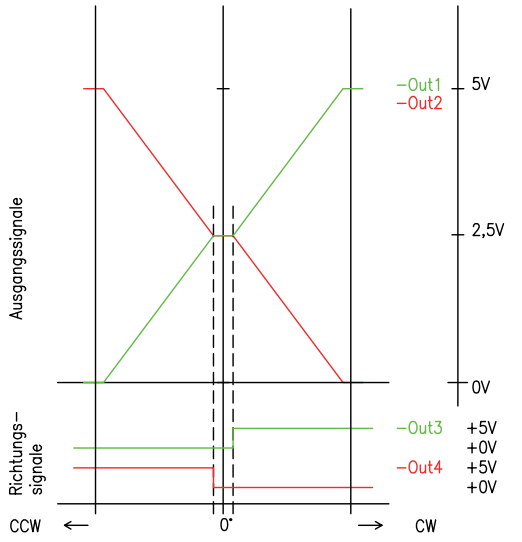
A12:



A13:



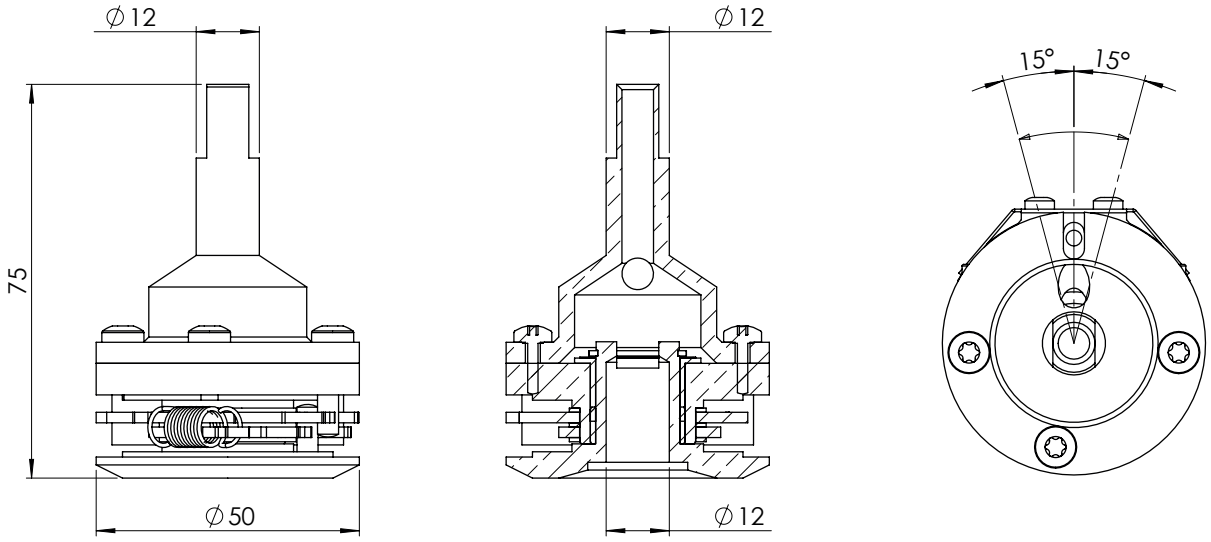
A14:



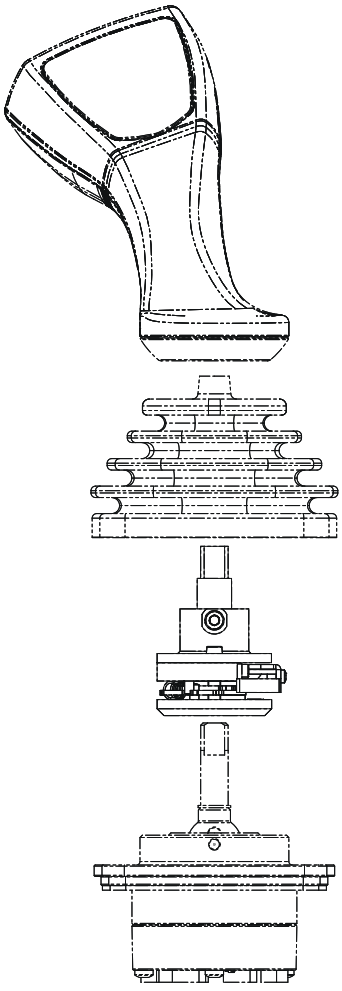
Connection assignment for A11, A12, A13, A14 for version with 10-pole Molex MLX51047-1000:

Pin 1: Supply voltage +5 VDC (red)
Pin 2: 0 VDC (brown)
Pin 3: Out 1: Analog output (blue)
Pin 4: Out 2: Analog output (violet)
Pin 5: Out 3: Direction signal CW (green)
Pin 6: Out 4: Direction signal CCW (yellow)

Dimensions



Installation example with joystick HS2 and handle G56



Notes for joysticks:
Only in combination with S3 rubber boot.
Handle lever: HS2xT: 55 mm, NS3x: 80 mm, NNS0: 80 mm.
(to adapt to standard height for joysticks without rotary module).