



## AJW analog joystick

- Hall effect contactless double axis joysticks
- The contactless technology guarantees long life and precise comfortable control
- Robust mechanical design; specifically tailored to off-highway operating machines
- Handles with additional proportional axis

### Working conditions

#### Electrical specifications

#### AJW

Supply voltage		from 8 to 32 V or regulated 5±0.1V
Current consumption	without grip	max. 20 mA at 32 V
Output signal	full range	from 0.5 to 4.5 V - 2.5 V in neutral
	tolerance (in neutral and full stroke)	±0.15 V both sides per axis
	redundancy signal (crossed)	from 4.5 to 0.5 V - 2.5 V in neutral
	max. load	< 1 mA

#### Mechanical specifications

Lever angle	operation	± 20° both axis
	tolerance	±1
Lever force (X,Y axis)	stroke end	6±1N (fully actuated 190 mm - 7.48 in above flange)
Operating life	on each axis (full stroke cycles)	>10 <sup>6</sup>
Weight	without grip	0.50 Kg (1.10 lb)

#### Environmental specifications

Working temperature		from -40° C to +85° C (from -40° F to 185° F)
Storage temperature		from -40° C to +85° C (from -40° F to 185° F)
Weather protection	above fixing plan	AJW: IP65 / AJW-IP: IP67 - IPX9K
EMC compatibility		100 V/m - ISO13766, ISO14982

#### "Dead man" switch features

Contact type		NA
Current rating (24 VDC)		200 mA resistive load
Mechanical life (nr. of operations)		10 <sup>6</sup>
Electric life (nr. of operations)		3x10 <sup>4</sup>
Operating force		3.4 N
Weather protection		IP67

#### Test specifications

Mechanical vibration	random	from 5 to 500 Hz, 5,4x10 <sup>4</sup> to 0,56 g <sup>2</sup> /Hz, 100 h each axis
	sinusoidal	40 m/s <sup>2</sup> from 10 to 2000 Hz
	bumps	100 applications - 400 m/s <sup>2</sup> x 6 ms
Humidity	96%	240 h
Thermal shock		100 cycles, from -40° C to 85° C and back, 50° C/min (100 cycles, from -40° F to 212° F and back, 122° F/min)
Salt spray	exposure	100 h

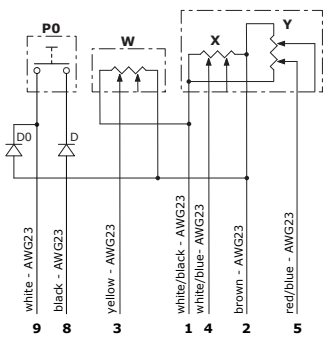
# Control components

## AJW analog joystick

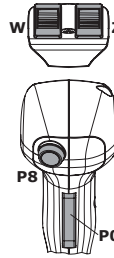
### Configurations



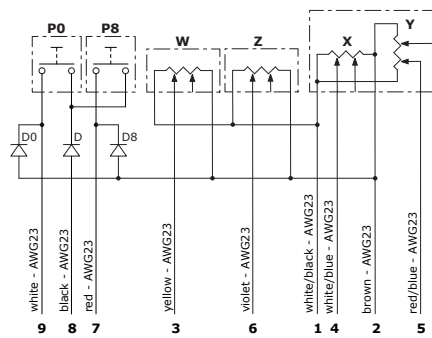
Code	<b>183540027</b>
Description	AJW2000A-PZA0100DQ-ORD-WN140/(D2F12035)-(TC-PROT)
Plate	1 ARW* type proportional roller (W)
Front zone	"dead man" switch (P0)



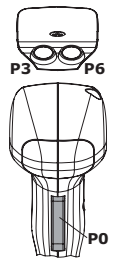
Pin	Function
1	VJ+
2	VJ-
3	W axis
4	X axis
5	Y axis
6	plugged
7	plugged
8	VJ+
9	P0 dead man
10	plugged
11	plugged
12	plugged



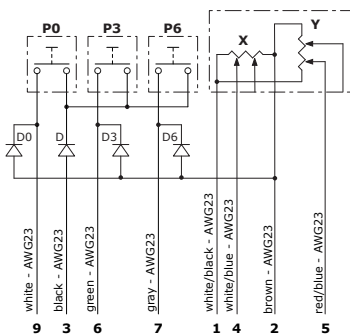
Code	<b>183540028</b>
Description	AJW2000A-PZTM0200BQ-ORD-8R2D-WN140-ZN140/(D2F12035)-(TC-PROT)
Plate	2 ARW* type proportional rollers (W-Z)
Front zone	1 T* type push-button with spring return (P8), "dead man" switch (P0)



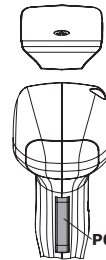
Pin	Function
1	VJ+
2	VJ-
3	W axis
4	X axis
5	Y axis
6	Z axis
7	P8 push-button
8	VJ+
9	P0 dead man
10	plugged
11	plugged
12	plugged



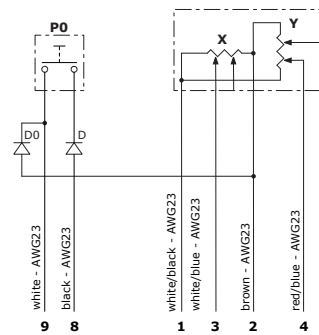
Code	<b>183540029</b>
Description	AJW2000A-PTA2000CQ-ORD-3R2D-6R2D/(D2F12035)-(TC-PROT)
Plate	2 T* type push-buttons with spring return (P3-P6)
Front zone	"dead man" switch (P0)



Pin	Function
1	VJ+
2	VJ-
3	P3 push-button
4	X axis
5	Y axis
6	P6 push-button
7	plugged
8	VJ+
9	P0 dead man
10	plugged
11	plugged
12	plugged



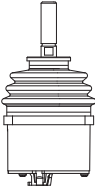
Code	<b>183540006</b>
Description	AJW2000A-PA0000AQ-ORD/D2F12035-(TC-PROT)
Plate	-
Front zone	"dead man" switch (P0)



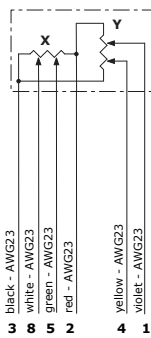
Pin	Function
1	VJ+
2	VJ-
3	X axis
4	Y axis
5	plugged
6	plugged
7	plugged
8	VJ+
9	P0 dead man
10	plugged
11	plugged
12	plugged

NOTE (\*): for component features see page 12

### Configuration



	AJW-IP
Code	<b>183540058</b>
Description	AJW-IP2027A-S(5V)/D2F08050



Pin	Function
1	Yr
2	Vcc (5V)
3	VJ-
4	Y axis
5	Xr
6	plugged
7	plugged
8	X axis

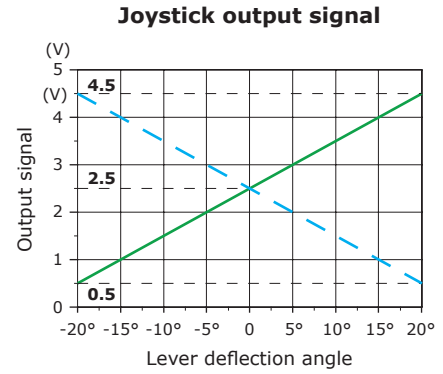
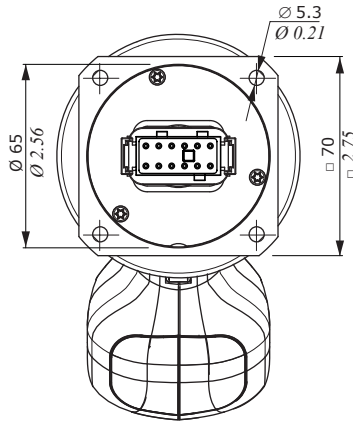
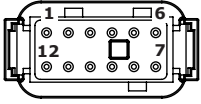
NOTE (\*): for component features see page 12

# Control components

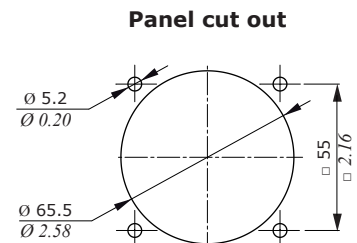
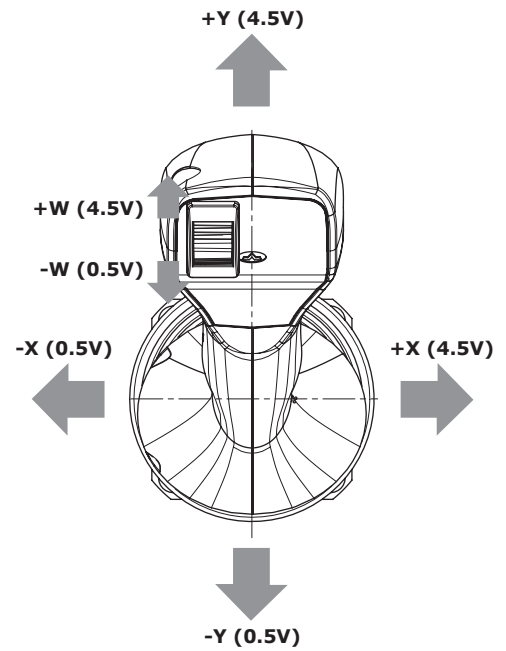
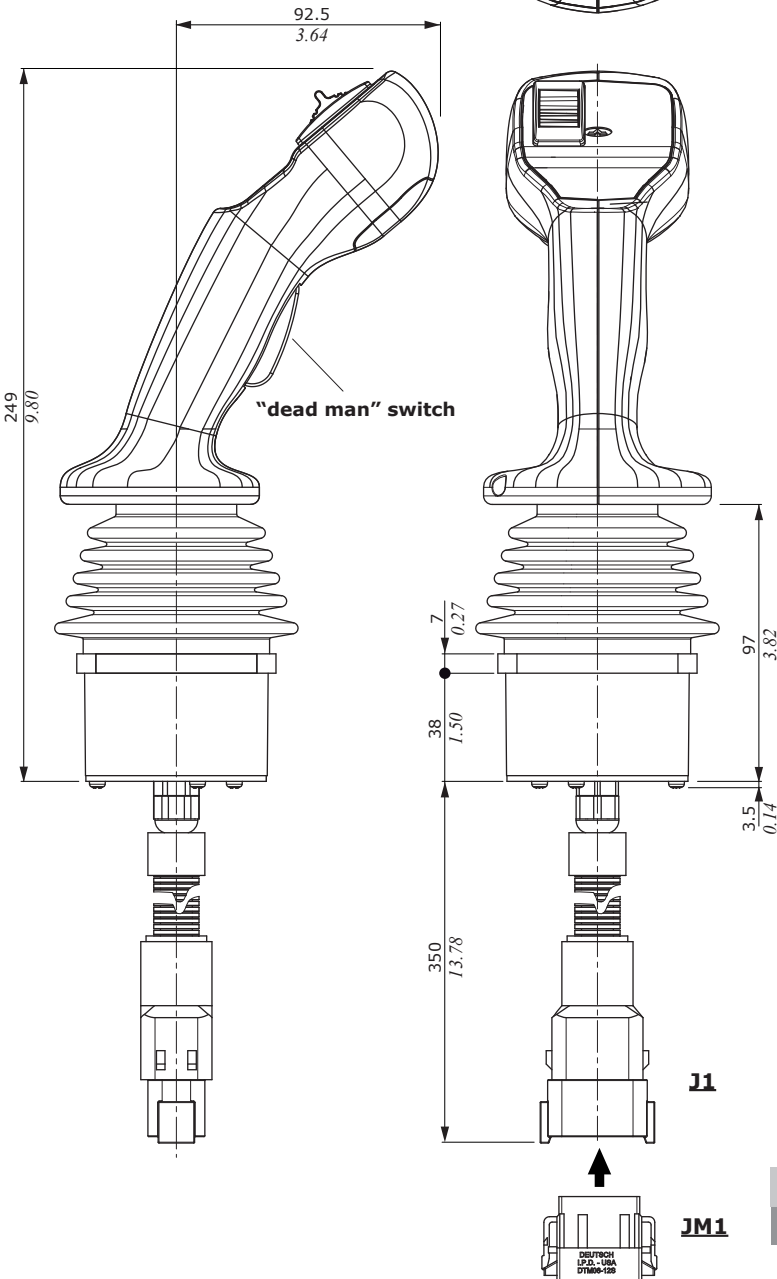
## AJW analog joystick

### Dimensions and features

**DTM04-12PA**  
Deutsch connector



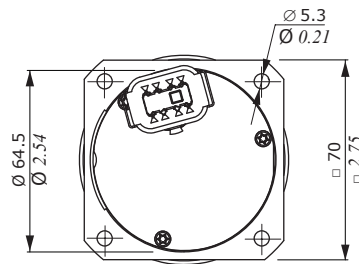
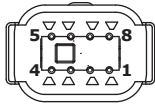
— Output A signal  
- - - Output B redundant optional signal



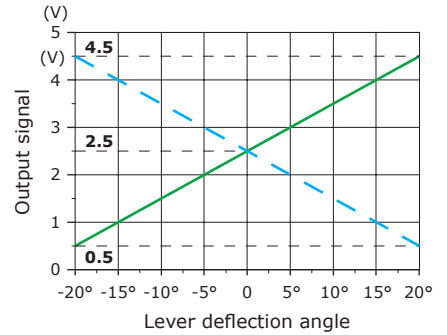
Mating connector	
Name	Type
JM1	DTM06-12SA Deutsch

### Dimensions and features

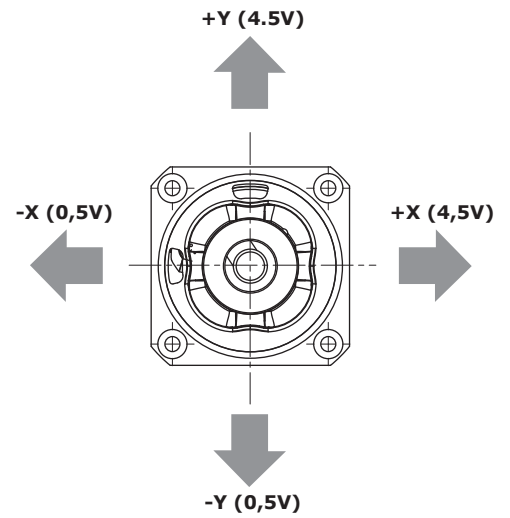
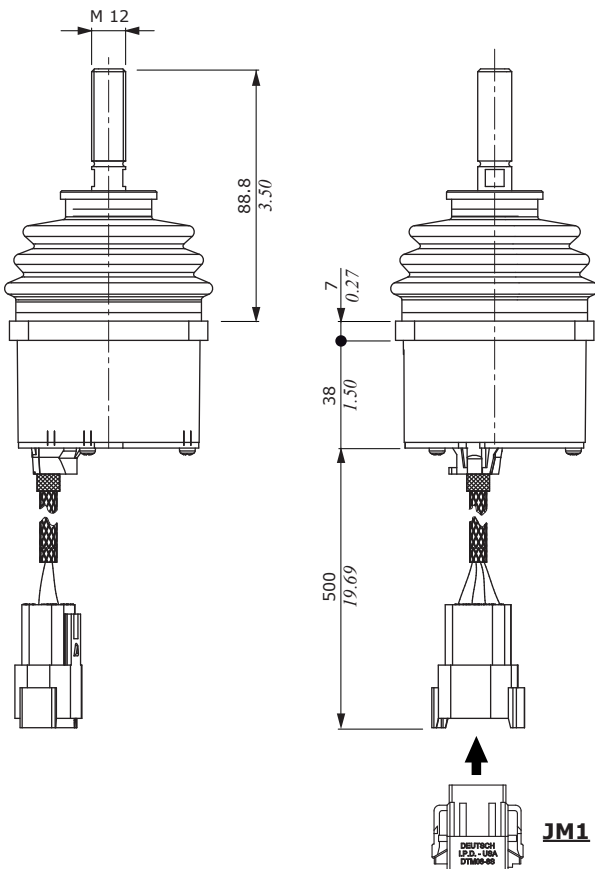
**DTM04-8P**  
Deutsch connector



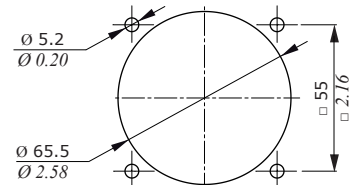
**Joystick output signal**



— Output A signal  
- - - Output B redundant optional signal



**Panel cut out**



#### Mating connector

Name	Type
<b>JM1</b>	DTM06-8S Deutsch

NOTE (\*): Weather protection IP67-IPX9K above the panel, IP57-IPX9K below the panel

# Control components

## AJW and AJW-IP analog joystick

### Electric device features

#### ARW type proportional roller

Supply voltage	from 8 to 32 VDC
Max. current consumption	< 24 mA
Max. output current	1 mA
Output signal (range)	0,5 - 4,5 V
Output signal (central position)	2,5V
Signal tolerance (central position and stroke end)	±100 mV
Minimum load	10 KΩ
Actuator deflection angle	± 35° (±1°)
Mechanical life (nr. of operations)	10 <sup>6</sup>
Operating force	2 N
Mechanical vibration	IEC 68-2
Mechanical shock	EN 60068-2-29 (pulse 400m/s <sup>2</sup> x 6 ms, 100 times)
Weather protection	IP67-IPX9K
EMC compatibility	ISO 13766 ISO 14982



#### T type ON/OFF push-button

Execution	spring return
Contact type	normally open
Current rating	200 mA resistive load @ 12 VDC
Mechanical life (nr. of operations)	10 <sup>6</sup>
Electric life (nr. of operations)	20x10 <sup>4</sup>
Weather protection	IP67 with handle mounting



**Proportional roller  
output signal**

