



## Angle sensor 424D

The 360° angle sensor 424D is used for the detection of rotary movements from 20° to 360°. Angle sensor 424D is based on the contactless Hall measurement principle, which is extremely reliable and ensures a long service life.

Angle sensors are used, for example, in foot pedals for controlling mobile machinery or for position determination in cranes. Additionally, the 424D is ideal for use in excavators, robots or wind turbines thanks to its robust design.

### Product characteristics

- Long lifetime and extremely reliable from contactless measurement with Hall principle
- Angle measuring range between 20° and 360°
- IP67 protection class for harsh environmental conditions
- Temperature range -40 °C to +85 °C
- Resolution 12 bit
- Current or voltage output signal
- Available with one or two outputs, PWM signal available on request

### General information

The angle measuring range lies between 20° and 359°. The measuring principle is contactless, based on a magnetic field rotating above the 2D Hall sensor. The system is short-circuit proof. There is no mechanical limit stop. Housing material: PBT.

## Technical drawing

IMAGE 1/2

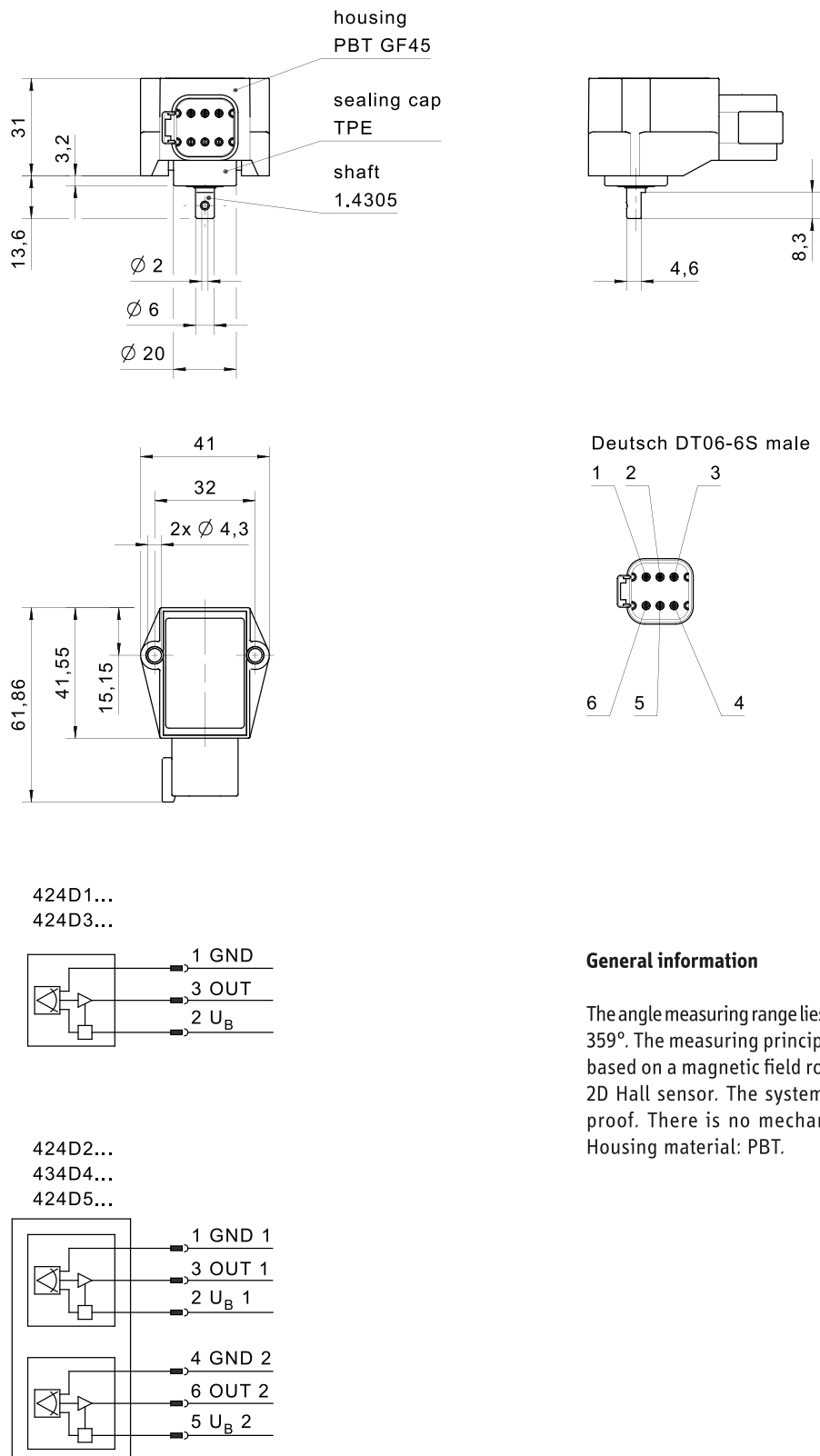
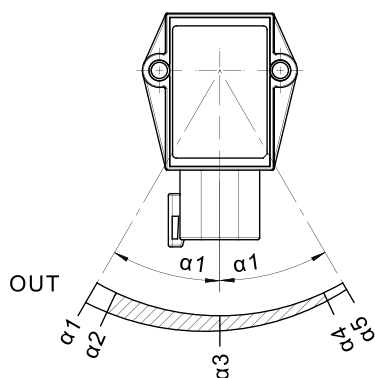
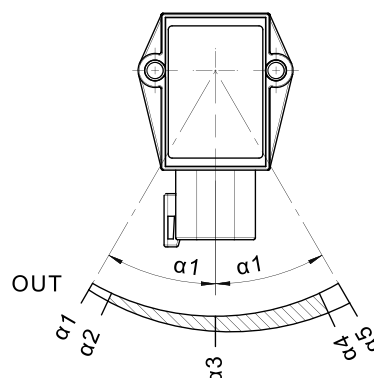


IMAGE 2/2

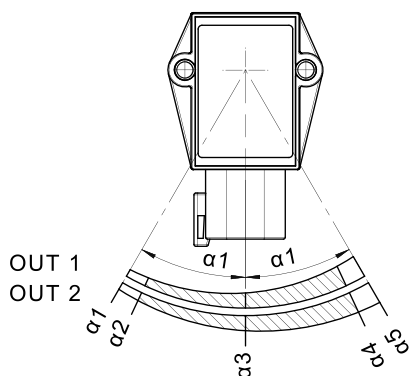
424D3... CW



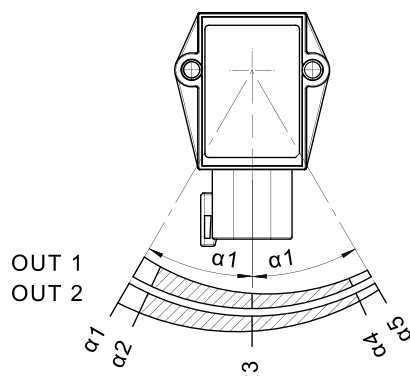
424D1... CCW



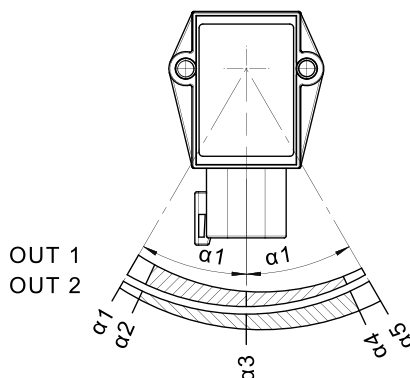
424D2... CCW / CCW



424D4... CW / CW



424D5... CW / CCW



## Product options

IMAGE 1/1

### ORDERING KEY

424D...				Angle sensor 360°, magnetic + redundant
				<b>Output signal</b>
	11			4-20mA, one output (CCW)
	17			0.5-4.5V, one output (CCW)
	51			4-20mA, two outputs (opposite)
	57			0.5-4.5V, two outputs (opposite)
				<b>Angle measuring range</b>
		359		359°
		270		270°
		240		240°
		210		210°
		180		180°
		150		150°
		120		120°
		090		90°
		045		45°
				<b>Operating lever</b>
			B	Yes
			-	No (if selected without lever, this position is omitted)

#### Optional

##### Output signal

1-5V

PWM

Other output signals, angle rates on request

## Article characteristics

Attribute	424D.1...	424D.7...
Polarity reversal protection	yes	
Output signal min.	-	0.5 V DC
Output signal max.	-	4.5 V DC
Output signal min.	4 mA	-
Output signal max.	20 mA	-
Output signal - centre position/zero position	-	2.5 V DC
Output signal - centre position/zero position	12 mA	-
Resolution	0.09 °	
Operating voltage min.	10 V DC	
Operating voltage max.	30 V DC	
Current consumption	30 mA	
Load resistance min.	-	100000 Ohm
Load resistance max.	200 Ohm	-
Linearity error	±1 %	± 1 %
Signal sequence	CCW or CW/CCW	
Signal update rate	1600 Hz	
Outputs (quantity, type)	1 or 2	
Technology	Hall	
Angle measuring range	20°...360 °	
Outputs	4...20mA	0,5...4,5V
MTTF	79.6 a	115.9 a
Temperature coefficient	±1.2 %	
EMC Agricultural and forestry machines (Norm)	EN ISO 14982 pulse 5b: max. voltage 35V (absolute), functional status C for pulse 1 and 4	
EMC Earth-moving and building construction machinery (Norm)	DIN EN ISO 13766-1 pulse "load dump": max. voltage 35V (absolute)	
EMC Industrial trucks (Norm)	DIN EN 12895	
Max. shaft load, axial	50 N	
Max. shaft load, radial	100 N	
Mechanical stop	no	
Actuating lever	Selectable	
Protection class	IP67 DIN EN 60529	

Attribute	424D.1...	424D.7...
Operating temperature min.	-40 °C	
Max. operating temperature	85 °C	
Min. storage temperature	-40 °C	
Max. storage temperature	85 °C	
Torque for fastening screws	2.5 N m	
Connector type	Deutsch DT04-6P	