


Datasheet

 With Drive-CliQ interface for direct and simple connection to Siemens control systems

Basic features

- The AHP2-DQ sensor is multi-functional, high accurate and a particular efficient, absolute magnetic encoder system
- Particularly applicable for machine building and automation industry
- Contactless and therefore wear-free measuring
- For measuring lengths up to 48 m max.
- "Plug and Play" installation- automatic detection of the sensor and its settings
- High reliability due to continuous plausibility check
- Compact construction
- Optional with external temperature evaluation available
- Status LEDs



Output/Interface

Interface	Drive-CliQ
Differential signals	yes
Error signal	yes
Interface coding	Binary
Cycle time min.	31.25 μ s
Count direction	rising

Display/Operation

Function indicator	LED Green LED yellow LED red
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Electrical data

Output value	Position in μm
Operating voltage U_b	10...30 VDC
Switch-on delay max.	3300 ms
Hysteresis H max.	1 μm
Power consumption	$\leq 1.8 \text{ W}$ (no load)
Voltage-proof up to (GND to housing)	500 VDC
Current consumption max. at 24 VDC	75 mA
Overvoltage protection	To 36 V

Electrical connection

Connection	Connector, M12 plug, 8-pin (Version "T" with 12-pin) PUR-Cable (0,5; 2; 5 m)
Connection version	axial
Polarity reversal protected	yes

Functional safety

MTTF (40 °C)	148 a (138 a at version "T" with temperature input)
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The MTTF value given does not represent any binding quality and/or service life commitments. They are merely empirical values without binding character. These values do not extend the limitation period for claims based on defects or influence it in any other way. For further information on MTTF, see MTTF certificate.

Detection range/measuring range

Resolution	1 μm
Interpolation factor	2000
Read distance	0.01...1.3 mm
Non-linearity of sensor head, max.	$\pm 2 \mu\text{m}$
Measuring range	48 m
Optimal read distance	0.3 mm
Traverse speed max.	5 m/s
Repeat accuracy	$\leq 1 \mu\text{m}$

Material

Housing material	Die-cast zinc, nickel plated, Chrome-plated
Housing material, surface protection	nickel plated, Chrome-plated

Mechanical data

Dimension	16 x 18.6 x 54 mm
Mounting	Through-hole 4.3 mm
Diameter min.	400 mm
Weight	50 g (without cable)
Pitch max.	$\pm 0.5^\circ$
Pole width	2 mm
Roll max.	$\pm 0.5^\circ$
Lateral offset (Y)	$\pm 1.5 \text{ mm}$
Tangential offset (X) max.	$\pm 0,5 \text{ mm}$
Procedure direction	Lengthwise to magnetic scale
Yaw max.	$\pm 1.0^\circ$

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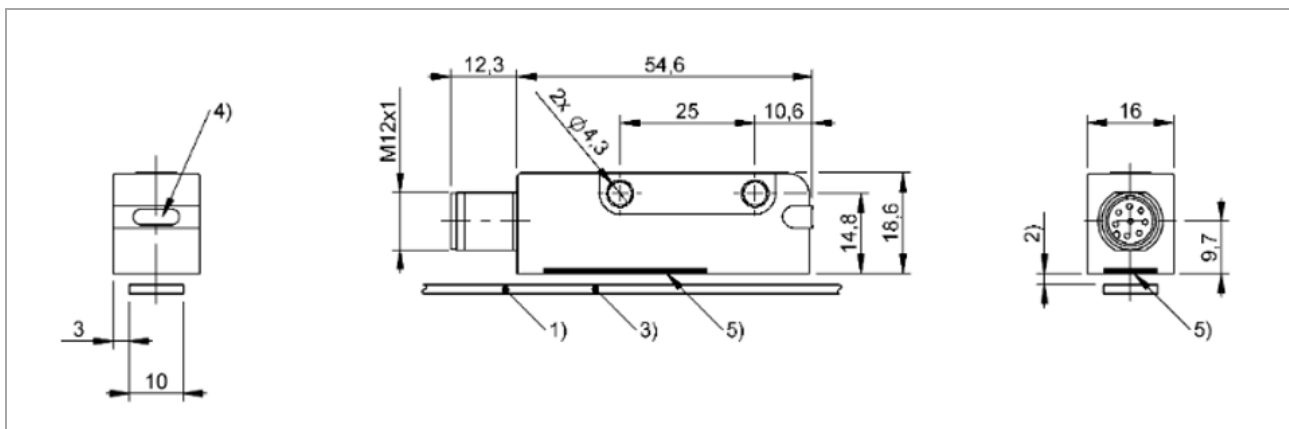
Environmental conditions

Radiation	(EN 55016-2-3)	Industrial areas
Continuous shock	(EN 60068-2-27)	150 g, 2 ms
Shock	(EN 60068-2-27)	100 g, 6 ms
Vibration	(EN 60068-2-6)	20 g, 10... 2000 Hz
Noise	(EN 600068-2-64)	20 g, 5.....2000 Hz
ESD	(EN 61000-4-2)	Severity Level 4
RFI	(EN 61000-4-3)	Severity Level 3
Burst	(EN 61000-4-4)	Severity Level 3
Surge	(EN 61000-4-5)	Severity Level 2
High-frequency fields	(EN 61000-4-6)	Severity Level 3
Magnetic fields	(EN 61000-4-8)	Severity Level 5
External magnetic fields max., in operation		<1 mT (no effect)
Altitude max.		2000 m (above sea level)
Storage temperature		-20...85 °C
Relative humidity		≤ 90%, non-condensing
IP rating (with connector)		IP67
Temperature coefficient, overall system		10.5 ppm/K
Ambient temperature		-30...70 °C

Approval/Conformity

Approval/Conformity	CE, cURus, WEEE
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Dimensions

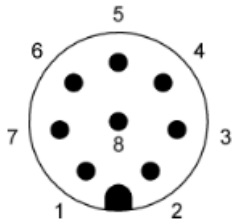


- 1) not included in scope of delivery, 2) distance to magnetic scale, 3) magnetic scale, 4) LED function indicator, 5) active measurement surface

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Pin assignment

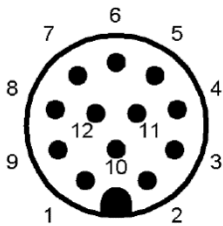
S115 – Pin assignment Connector M12 (plug), 8-pin (view Pin side)



PIN	Signal	Description
1	+24 VDC	Supply voltage 10...30 VDC
2	NC	Not used ¹⁾
3	RX+	Receive Drive-CliQ signals
4	RX-	Receive Drive-CliQ signals
5	GND	Sensor ground (0V)
6	TX-	Send Drive-CliQ signals
7	TX+	Send Drive-CliQ signals
8	PRESET	Digital input ²⁾ (sets current position to approx. 10 mm)
Shield	Shield	Shield

- ¹⁾ Unassigned leads must not be connected
- ²⁾ If not used, connect to GND (recommended) or leave unconnected

S284 – Pin assignment Connector M12 (plug), 12-pin (view Pin side)
(Version temperature-sensor-input)



PIN	Signal	Description
1	+24 VDC	Supply voltage 10...30 VDC
2	Temp+	Temperature input
3	GND	Sensor ground (0V)
4	TX-	Send Drive-CliQ signals
5	TX+	Send Drive-CliQ signals
6	NC	Not used ¹⁾
7	RX-	Receive Drive-CliQ signals
8	RX+	Receive Drive-CliQ signals
9	NC	Not used ¹⁾
10	Temp-	Temperature input
11	PRESET	Digital input ²⁾ (sets current position to approx. 10 mm)
12	NC	Not used ¹⁾
Shield	Shield	Shield

- ¹⁾ Unassigned leads must not be connected
- ²⁾ If not used, connect to GND (recommended) or leave unconnected

