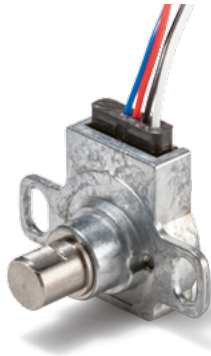


Data Sheet for Angle Sensors

Flange Mount Hall Effect Singleturn Rotary Encoder

Series HSM14F



- Wide operating temperature range -40 °C to 105 °C
- Only 13.1 mm housing depth
- Compact housing with 6.2 mm depth
- IP65
- Optional redundant electronics
- Bearing life 100 million revolutions

The HSM14F is an extremely compact flange-mounted Hall encoder. The HSM14F is also available with redundant electronics for increased operational reliability. The wide operating temperature range and high IP protection class also make the encoder suitable for applications with increased environmental requirements.

Electrical Data

Effective electrical angle of rotation 1.)	360° (optionally also 90°, 180°, 270°, customer-specific angle)
Independent linearity (bet straight line) 1.)	±1%
Output signal	With VSUP 5 V Output voltage: 10% ± 3%..90% ± 3% ratiometric
Resolution 1.)	12 bit (4096 steps)
Update rate	800 µs
Supply voltage	5 ± 0.5 VDC
Power consumption (no load)	< 16 mA (single) < 32 mA (redundant)
Output load	≥ 10 kΩ
Insulation voltage	±8 kV (contact), ±16 kV (air) (IEC 61000-4-2)

Mechanical and Environmental Data

Mechanical angle of rotation 1.)	360° without stop
Lifetime 2.)	100 mio. shaft revolutions
Bearing	Sleeve bearing
Max. operational speed	400 rev./min
Operational torque @ RT 1.) 2.)	≤ 5 Nmm
Operating temperature range	-40 °C up to +105 °C
Storage temperature range	-40 °C up to +105 °C
Protection grade (IEC 60529)	IP65
Vibration (IEC 68-2-6, Test Fc)	10Hz upt to 2000 Hz 196 m/s ² 12 hours
Shock (IEC 68-2-27, Test Ea)	980 m/s ² 6 ms (18 times)
Housing diameter	14 mm
Housing depth	6.2 mm
Shaft diameter	6 mm
Shaft type	Solid shaft

Data Sheet for Angle Sensors

Flange Mount Hall Effect Singleturn Rotary Encoder

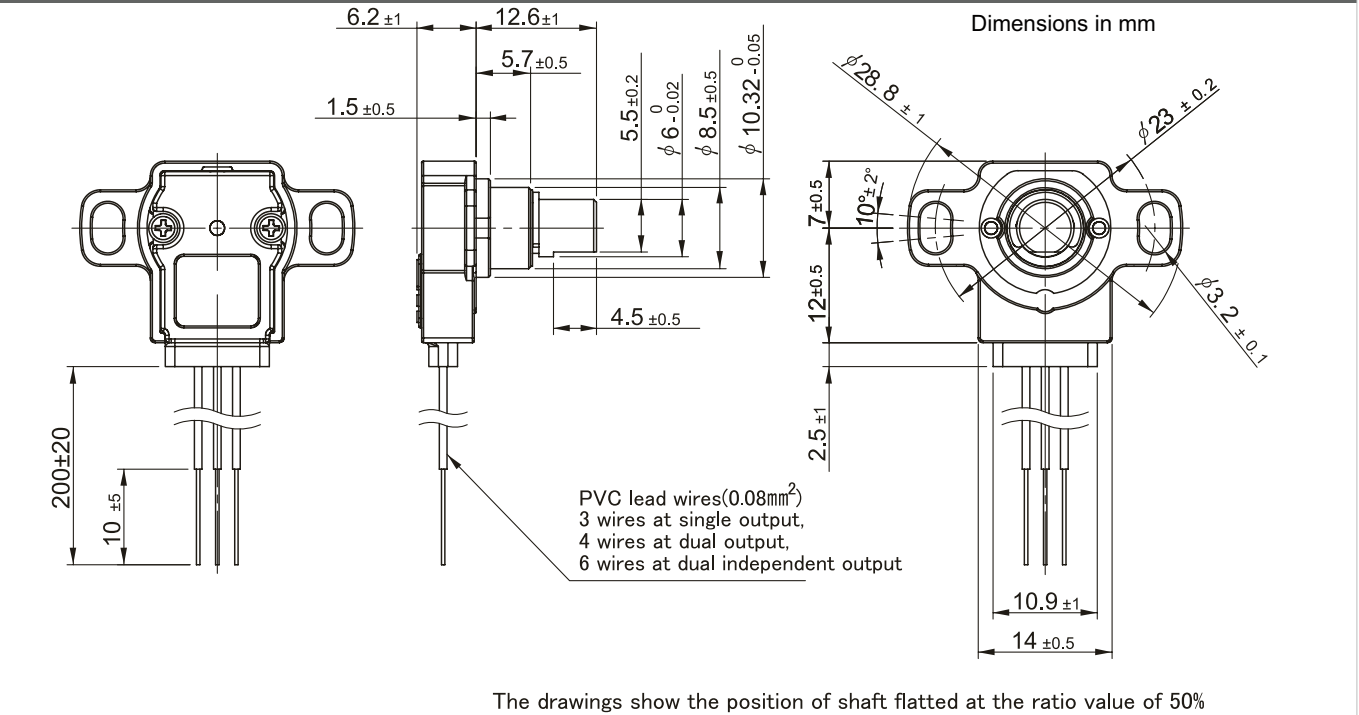
Series HSM14F

Mechanical and Environmental Data, Miscellaneous

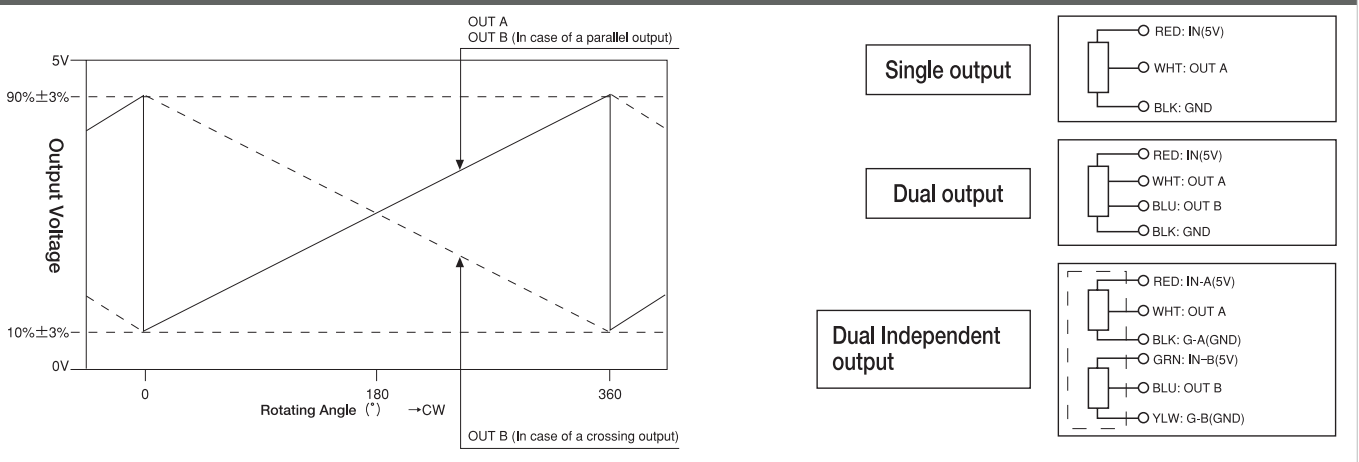
Connection type	Single strands 200 mm ±20 mm
Connection position	Radial
Sensor mounting	Flange
Mass	app. 11 g
Mounting parts included in delivery	none
Material shaft	Stainless steel
Material housing	Plastic

- 1.) According IEC 60393
- 2.) Determined by climatic conditions according to IEC 68-1, para. 5.3.1 without load collectives

Drawing



Electrical connection and output signal



Data Sheet for Angle Sensors

Flange Mount Hall Effect Singleturn Rotary Encoder

Series HSM14F

Order code

Description	Selection: Standard=black/bold , possible <i>options=grey/italic</i>					
Series:	HSM14F					
Shaft diameter / shaft length: Ø 6.00 mm x 23.1 mm <i>User-defined shaft [mm]</i>		6x12,6 <i>XXXX</i>				
Supply voltage / output signal: VSUP=5 V ±10 % / output voltage: 10 % ±3%..90 % ±3 % from VSUP (ratiometric)*				0505		
Sense of rotation output signal: Signal increases by turning the shaft clockwise					CW	
Effective electrical angle: Effective electrical angle 360° <i>User-defined effective electrical angle xxx°</i>						360 <i>xxx</i>
Electrical connection: Single strands length 0.20 m <i>Single strands length in x.xx [m]</i>						L0,20 <i>Lx,xx</i>

*Corresponds to an output of 0.5..4.5 V with an input of 5 V

Order example HSM14F:

Requirement: :

Shaft Ø 6.00 mm, axis length 12.6 mm, VSUP = 5 V / OUT = 5 % ±3 %..95 % ±3 % of VSUP, output signal clockwise increasing CW, electrically effective angle of rotation 180°, signal cable length 30 cm.

Example order code:

HSM14F 6x12.6 0505 CW180 L0.30

For series requirements, you can obtain these and other customised solutions

For example:

- PWM outputs (pulse width modulation)
- Customer-specific output signal, for example with signal plateaus
- Other shaft geometry
 - Shaft slot
 - Special shaft flattening
- Cable assemblies, for example with connector



TDS Precision Products GmbH
Industriestrasse 1a
CH-8157 Dielsdorf

T + 41 44 885 30 80
info@tds-pp.com
www.tds-pp.com