



Non-Contact Hall-Effect Rotary Position Sensors

RTY Series

RTP Series

RPN Series

Sensing range	50° (±25°), 60° (±30°), 70° (±35°), 90° (±45°), 120° (±60°), 180° (±90°), 270° (±135°), 360° (±180°)	50° (±25°), 60° (±30°), 70° (±35°), 90° (±45°), 120° (±60°), 180° (±90°), 270° (±135°), 350° (±175°), 360° (±180°)	50° (±25°), 60° (±30°), 70° (±35°), 90° (±45°), 120° (±60°), 180° (±90°), 270° (±135°), 360° (±180°)
Input voltage	low voltage: 5 Vdc ±0.5 Vdc high voltage: 10 Vdc to 30 Vdc	low voltage: 5 Vdc ±0.5 Vdc high voltage: 10 Vdc to 30 Vdc	5 Vdc, 8 to 30 Vdc, 10 Vdc to 30 Vdc
Output	<ul style="list-style-type: none"> low voltage: 0.5 V to 4.5 V ratiometric (standard); 4.5 V to 0.5 V ratiometric (inverted) high voltage: 0.5 V to 4.5 V ratiometric (standard); 4.5 V to 0.5 V ratiometric (inverted) 	<ul style="list-style-type: none"> low voltage: 0.5 V to 4.5 V ratiometric (standard); 4.5 V to 0.5 V ratiometric (inverted) high voltage: 0.5 V to 4.5 V ratiometric (standard); 4.5 V to 0.5 V ratiometric (inverted) 	0.25 V to 4.75 V, 0.5 V to 4.5 V, 1 V to 9 V, 3 V to 5 V, 4.5 V to 0.5 V, 4.75 V to 0.25 V, 4 mA to 20 mA, 20 mA to 4 mA
Input current	<ul style="list-style-type: none"> low voltage: 20 mA max.; during output to ground short, 25 mA max. high voltage: 32 mA max.; during output to ground short, 47 mA max. 	<ul style="list-style-type: none"> low voltage: 20 mA max.; during output to ground short, 25 mA max. high voltage: 32 mA max.; during output to ground short, 47 mA max. 	20 mA max.
Operating temp. range	-40 °C to 125 °C [-40 °F to 257 °F]	-40 °C to 125 °C [-40 °F to 257 °F]	-40 °C to 125 °C [-40 °F to 257 °F]
Termination	AMP super seal	AMP super seal	AMP 1-1419168-1, AMP Superseal 282087-1, Deutsch DT04-3P
Life	35 M cycles	infinite	30 M cycles
EMI/EMC	<ul style="list-style-type: none"> EMI radiated immunity: 100 V/m from 200 MHz to 1000 MHz per ISO11452-2 EMI conducted immunity: <ul style="list-style-type: none"> low voltage: 100 mA BCI per ISO11452-4 from 1 MHz to 200 MHz high voltage: 100 mA BCI per ISO11452-4 from 1 MHz to 400 MHz EMC: exceeds CE requirements 	<ul style="list-style-type: none"> EMI radiated immunity: 100 V/m from 200 MHz to 1000 MHz per ISO11452-2 EMI conducted immunity: <ul style="list-style-type: none"> low voltage: 100 mA BCI per ISO11452-4 from 1 MHz to 200 MHz high voltage: 100 mA BCI per ISO11452-4 from 1 MHz to 400 MHz EMC: exceeds CE requirements 	EMC: 200 V/m ISO 11452-3
Housing material	PBT plastic	PBT plastic	PA66 plastic



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HRS Series

Sensing range	90° ±2°, 180° ±2°
Input voltage	5 Vdc ±10 %
Output	5 % to 95 % of applied Vdd, approx. (programmable) output ratiometric to supply)
Input current	5 mA typ.
Operating temp. range	-40 °C to 85 °C [-40 °F to 185 °F]
Termination	solder lug, flying wire leads, cable and connector
Life	10 M cycles
EMI/EMC	EMI: 30 V/m, 10 kHz to 1000 MHz at 3 m
Housing material	stainless steel

Position Sensors Line Guide



SMART Position Sensor
Superior Measurement.
Accuracy. Reliability. Thinking.

SPS Series
35 mm Analog, 75 mm Analog,
225 mm Analog, Digital Linear
Configurations

SPS Series
100° and 180°
Arc Configurations

SPS Series
360° Rotary Configuration

Description	Enables highly accurate motion control, improving operational efficiency and safety. Non-contact design eliminates mechanical failure mechanisms, reducing wear and tear, improving reliability and durability, and minimizing downtime. Robust in most harsh environments. Easy to install, reducing set-up costs.		
Configuration	linear	arc	rotary
Sensing range	35 mm: 0 mm to 35 mm [0 in to 1.38 in] 75 mm: 0 mm to 75 mm [0 in to 2.95 in] 225 mm: 0 mm to 225 mm [0 in to 8.86 in]	100°: 0° to 100° 180°: 0° to 180°	0° to 360°
Actuator sensing location on arc	N/A	100°: inside or outside 180°: inside	N/A
Resolution	35 mm analog: 0,04 mm [0.0016 in] 75 mm analog: 0,05 mm [0.002 in] 225 mm analog: 0,14 mm [0.0055 in] 225 mm digital: 0,0035 mm [0.000137 in]	100° inside and outside: 0.06° 180° inside: 0.11°	0.01°
Supply voltage	35 mm: 4.75 Vdc to 5.25 Vdc all other versions: 6 Vdc to 24 Vdc	100° inside: 6 Vdc to 24 Vdc, 18 Vdc to 40 Vdc 100° outside: 5 Vdc 180° inside: 6 Vdc to 24 Vdc, 18 Vdc to 40 Vdc	12 Vdc to 30 Vdc
Supply current	35 mm analog: 20 mA max. 75 mm analog: 32 mA max. 225 mm analog: 34 mA max. 225 mm digital: 88 mA max.	100° inside: 45 mA max. 100° outside: 30 mA max. 180° inside: 45 mA max.	90 mA max.
Output	35 mm analog: 0.55 Vdc to 4.15 Vdc 75 mm and 225 mm analog: 0 Vdc to 5 Vdc 225 mm digital: RS232 type	0.5 Vdc to 4.5 Vdc	4 mA to 20 mA
Air gap (sensor to magnet actuator clearance)	35 mm analog: 8,5 ±1,0 mm [0.334 ±0.039 in] all other versions: 3,0 mm ±2,5 mm [0.118 in ±0.098 in]	100° inside: 7,8 ±2,5 mm [0.307 ±0.098 in] 100° outside: 9,2 ±2,5 mm [0.36 ±0.09 in] 180° inside: 8,58 ±2,5 mm [0.338 ±0.098 in]	3,0 ±2,0 mm [0.118 ±0.079 in]
Operating temperature range	-40 °C to 125 °C [-40 °F to 257 °F]	-40 °C to 85 °C [-40 °F to 185 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
Storage temperature range	-40 °C to 150 °C [-40 °F to 302 °F]	-40 °C to 150 °C [-40 °F to 302 °F]	-40 °C to 150 °C [-40 °F to 302 °F]
Termination	35 mm analog: TYCO Super Seal 282087-1 integral connector all other versions: 18 AWG flying leads	100° inside: 4-pin M12 connector, 18 AWG flying leads 100° outside: Ampseal 16 connector 180° inside: 4-pin M12 connector	5-pin male connector
Sealing	IP67, IP69K	IP67, IP69K	IP67, IP69K
Radiated immunity	35 mm analog: 100 V/m per ISO 11452-2 all other versions: n/a	—	—
Conducted immunity	35 mm analog: 100 mA BCI per ISO 11452-4 all other versions: n/a	—	—
Housing material	thermoplastic	thermoplastic	aluminum with powder coating
Approvals	CE	CE	CE