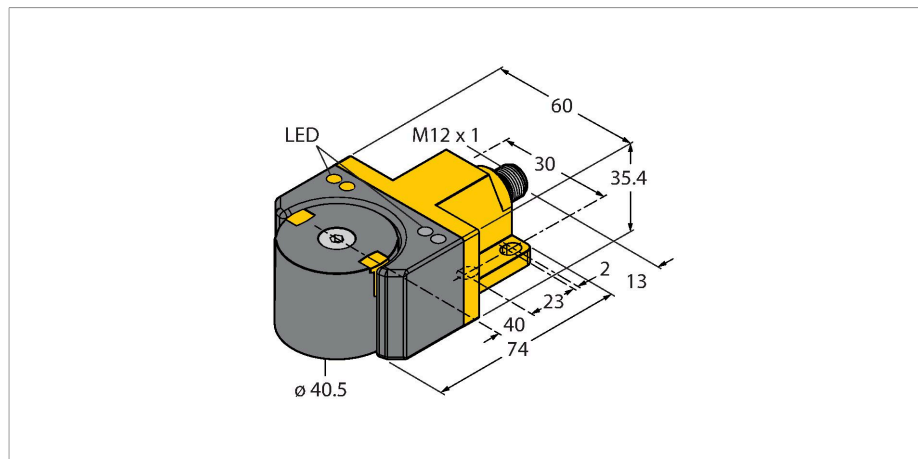


# RI360P1-DSU35-2UP6X4-H1151

## Inductive Angle Sensor – With Two Programmable Switching Outputs

### Premium Line



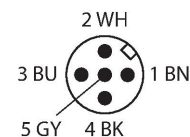
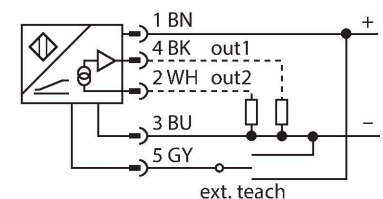
### Features

- Rectangular, housing DSU35
- Plastic, PP-GF30-VO
- Detecting angular positions of 0° to 360°
- P1-Ri-DSU35 positioning element included in delivery
- Measuring range displayed via LED
- Immune to electromagnetic interference
- 2 x NO/NC contacts, PNP output
- Programmable switching range
- 4-wire DC, 10...30 VDC
- Male M12 x 1; 5-pin

### Technical data

Type	RI360P1-DSU35-2UP6X4-H1151
ID	1590867
Measuring principle	Inductive
<b>General data</b>	
Resolution	0.09°
Measuring range	0...360 °
Nominal distance	1 mm
Mounting conditions	Non-flush
Repeat accuracy	≤ 0.025 % of full scale
Temperature drift	≤ ± 0.02 %/K
Output type	Absolute singleturn
<b>Electrical data</b>	
Operating voltage	10...30 VDC
Residual ripple	≤ 10 % U <sub>ss</sub>
DC rated operational current	≤ 200 mA
Residual current	≤ 0.1 mA
Isolation test voltage	≤ 0.5 kV
Short-circuit protection	yes
Voltage drop at I <sub>e</sub>	≤ 3 V
Wire breakage/Reverse polarity protection	yes / yes
Output function	5-pin, NO/NC, 2 × PNP
Sample rate	500 Hz
Current consumption	< 100 mA

### Wiring diagram



### Functional principle

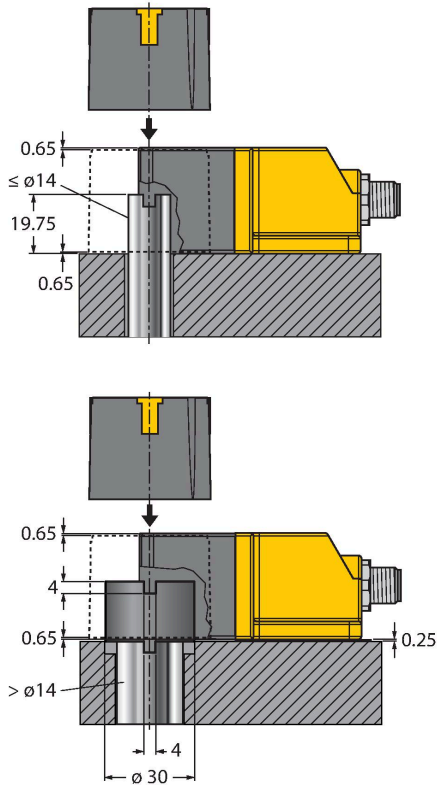
Inductive measuring principle provides more safety  
Based on the functional principle of RLC coupling, the sensor operates absolutely wear-free and is immune to magnetized metal splinters and other interference fields. Owing to the differential analysis, the output signal remains almost unchanged, even if the position of the positioning element deviates from the ideal axis of rotation.

## Technical data

Mechanical data	
Design	Dual sensor for rotary actuators, DSU35
Dimensions	74 x 60 x 35.4 mm
Flange type	Flange without mounting element
Housing material	Plastic, PP-GF30
Housing material, positioning element	plastic, PA66 + PA6I/6T-GF40
Electrical connection	Connector, M12 × 1
Environmental conditions	
Ambient temperature	-25...+75 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP68 IP69K
MTTF	138 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED, Green
Switching state	2 × LEDs, Yellow/yellow
Measuring range display	multifunction LED, green
Included in delivery	Positioning element P1-Ri-DSU35, countersunk screw M6 x 25, 2 cylinder screw M5 x 12, 2 lock washers A5

## Mounting instructions

### Mounting instructions/Description



Ri-DSU35 for mounting on rotary actuators  
 The Ri-DSU35 angle sensor and the well-established Ni4-DSU35 inductive dual sensor are identical in construction. The user also profits from the enormous mounting flexibility of the device. The sensor can be mounted on all standard rotary actuators with a shaft diameter of max. 14 mm thanks to an extensive range of available accessories. For larger shaft diameters use the BTS-DSU35-Z02 accessories.

LED function

Operating voltage

Green: Power on

Measuring range

Green: Positioning element is in the measuring range

Green flashing: Positioning element is in the measuring range, signal low (e.g. distance too large)

LED OFF: Positioning element is outside the detection range

Switching state

2 x Yellow: Output continues to switch

Freely adjustable (teaching with positioning element)

Bridge between teach input pin 5 (GY)	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	LED
2 seconds	Start value switching output 2	Start value switching output 1	LED flashes green, flashes quickly after 2 s
2 seconds	End value switching output 2	End value switching output 1	LED flashes green, lights up constantly after 2 s, corresponding switching-status LED flashes yellow
10 seconds	CCW rotation (inversion of switching outputs)	CW rotation (inversion of switching outputs)	After 10 s, power and status LEDs flash green simultaneously
15 seconds	-	Factory setting S1 = 0°, S2 = 90°	After 15 s, the power and status LEDs flash green alternately

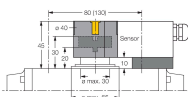
Preset mode (teaching without positioning element)

Bridge between teach input pin 5 (GY)	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	LED
2 seconds	Activate preset mode	Activate preset mode	After 2 s, the power LED flashes green
15 seconds	-	Factory setting S1 = 0°, S2 = 90°	After 15 s, the power and status LEDs flash green alternately
Switching points	Gnd Pin 3 (BU)	Ub Pin 1 (BN)	Status LED
S1 = 0°, S2 = 45°	Press 1 ×	-	Flash 1 ×
S1 = 0°, S2 = 135°	Press 2 ×	-	Flash 2 ×
S1 = 0°, S2 = 90° large switching range	-	Press 1 ×	Flash 1 ×
Factory setting S1 = 0°, S2 = 90°	-	Press 2 ×	Flash 2 ×

## Accessories

BTS-DSU35-Z01

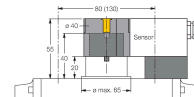
6900229



Mounting kit for dual sensors for larger rotary actuators; Ø spacer plate and snap ring: max. 65 mm; hole pattern on receptacle surface: 30 x 80 mm (30 x 130 mm); connection shaft (shaft extension) height: 20 mm/Ø: max. 30 mm

BTS-DSU35-Z02

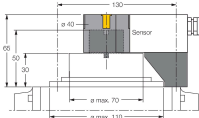
6900230



Mounting kit for dual sensors for larger rotary actuators; Ø spacer plate and snap ring: max. 65 mm; hole pattern on receptacle surface: 30 x 80 mm (30 x 130 mm); connection shaft (shaft extension) height: 20 mm (30 mm)/Ø: max. 40 mm

BTS-DSU35-Z03

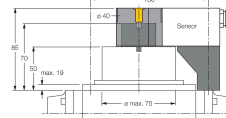
6900231



Mounting kit for dual sensors for larger rotary actuators; Ø spacer plate and snap ring: max. 110 mm; hole pattern on receptacle surface: 30 x 130 mm; connection shaft (shaft extension) height: 30 mm/Ø: max. 70 mm

BTS-DSU35-Z07

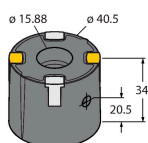
6900403



Mounting kit for dual sensors for larger rotary actuators; Ø spacer plate and snap ring: max. 110 mm; hole pattern on receptacle surface: 30 x 130 mm; connection shaft (shaft extension) height: 50 mm/Ø: max. 75 mm

P4-RI-DSU35

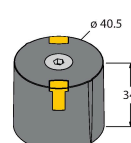
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• Mounting on shaft extension 5/8" using set screw

P1-RI-DSU35

6901086



Positioning element for angle sensors RI-DSU35• Mounted via M6 x 25 countersunk screw

Accessories

Dimension drawing	Type	ID	
	TX1-Q20L60	6967114	Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors