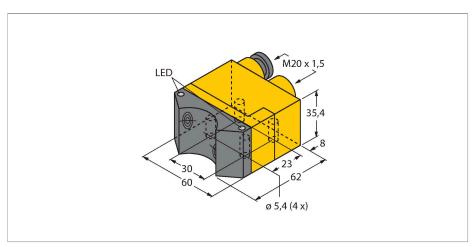


# NI4-DSU35TC-2ADZ30X2 Inductive Sensor – For Rotary Actuators





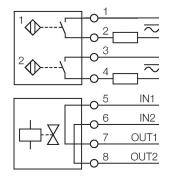
	Туре	NI4-DSU35TC-2ADZ30X2
Rated switching distance 4 mm  Mounting conditions Non-flush  Correction factors St37 = 1; Al = 0.3; stainless steel = 0.7 Ms = 0.4  Repeat accuracy ≤ 2 % of full scale  Temperature drift ≤ ±10 %  Hysteresis 315 %  Electrical data  Operating voltage U <sub>s</sub> 20250 VAC  Operating voltage U <sub>s</sub> 10300 VDC  AC rated operational current ≤ 400 mA  DC rated operating current I <sub>s</sub> ≤ 300 mA  Frequency ≥ 50≤ 60 Hz  Residual current ≤ 1.7 mA  Isolation test voltage 1.5 kV  Surge current ≤ 3 A (≤ 20 ms max. 5 Hz)  Short-circuit protection yes/Latching  Voltage drop at I <sub>s</sub> ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 4-wire, 2 x NO contact, 2-wire  Smallest operating current ≥ 3 mA	ID	4290002
Mounting conditions       Non-flush         Correction factors       St37 = 1; Al = 0.3; stainless steel = 0.         Ms = 0.4       Repeat accuracy       ≤ 2 % of full scale         Temperature drift       ≤ ±10 %         Hysteresis       315 %         Electrical data       Operating voltage U <sub>s</sub> 20250 VAC         Operating voltage U <sub>s</sub> 10300 VDC         AC rated operational current       ≤ 400 mA         DC rated operating current I <sub>s</sub> ≤ 300 mA         Frequency       ≥ 50≤ 60 Hz         Residual current       ≤ 1.7 mA         Isolation test voltage       1.5 kV         Surge current       ≤ 3 A (≤ 20 ms max. 5 Hz)         Short-circuit protection       yes/Latching         Voltage drop at I <sub>s</sub> ≤ 6 V         Wire break/reverse polarity protection       yes/Complete         Output function       4-wire, 2 x NO contact, 2-wire         Smallest operating current       ≥ 3 mA	General data	
Correction factors $ \begin{array}{lll} St37 = 1; \ Al = 0.3; \ stainless \ steel = 0.5 \\ Ms = 0.4 \\ \hline Repeat \ accuracy & \leq 2 \% \ of \ full \ scale \\ \hline Temperature \ drift & \leq \pm 10 \% \\ \hline Hysteresis & 315 \% \\ \hline Electrical \ data & \\ \hline Operating \ voltage \ U_{\scriptscriptstyle B} & 20250 \ VAC \\ \hline Operating \ voltage \ U_{\scriptscriptstyle B} & 10300 \ VDC \\ \hline AC \ rated \ operational \ current & \leq 400 \ mA \\ \hline DC \ rated \ operating \ current \ I_{\scriptscriptstyle B} & \leq 300 \ mA \\ \hline Frequency & \geq 50 \leq 60 \ Hz \\ \hline Residual \ current & \leq 1.7 \ mA \\ \hline Isolation \ test \ voltage & 1.5 \ kV \\ \hline Surge \ current & \leq 3 \ A \ (\leq 20 \ ms \ max. \ 5 \ Hz) \\ \hline Short-circuit \ protection & yes/Latching \\ \hline Voltage \ drop \ at \ I_{\scriptscriptstyle B} & \leq 6 \ V \\ \hline Wire \ break/reverse \ polarity \ protection & yes/Complete \\ \hline Output \ function & 4-wire, 2 \ x \ NO \ contact, 2-wire \\ \hline Smallest \ operating \ current & \geq 3 \ mA \\ \hline \end{array}$	Rated switching distance	4 mm
	Mounting conditions	Non-flush
Temperature drift $\leq \pm 10 \%$ Hysteresis $315 \%$ Electrical data  Operating voltage U <sub>B</sub> $20250 \text{ VAC}$ Operating voltage U <sub>B</sub> $10300 \text{ VDC}$ AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current I <sub>B</sub> $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. } 5 \text{ Hz})$ Short-circuit protection yes/Latching  Voltage drop at I <sub>B</sub> $\leq 6 \text{ V}$ Wire break/reverse polarity protection $4-\text{wire, } 2 \times \text{NO contact, } 2-\text{wire}$ Smallest operating current $\geq 3 \text{ mA}$	Correction factors	St37 = 1; Al = 0.3; stainless steel = 0.7; Ms = 0.4
Hysteresis 315 %  Electrical data  Operating voltage U <sub>B</sub> 20250 VAC  Operating voltage U <sub>B</sub> 10300 VDC  AC rated operational current ≤ 400 mA  DC rated operating current I <sub>B</sub> ≤ 300 mA  Frequency ≥ 50≤ 60 Hz  Residual current ≤ 1.7 mA  Isolation test voltage 1.5 kV  Surge current ≤ 3 A (≤ 20 ms max. 5 Hz)  Short-circuit protection yes/Latching  Voltage drop at I <sub>B</sub> ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 4-wire, 2 x NO contact, 2-wire  Smallest operating current ≥ 3 mA	Repeat accuracy	≤ 2 % of full scale
Electrical data  Operating voltage $U_{\scriptscriptstyle B}$ Operating voltage $U_{\scriptscriptstyle B}$ 10300 VDC  AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current $I_{\scriptscriptstyle B}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage 1.5 kV  Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection yes/Latching  Voltage drop at $I_{\scriptscriptstyle B}$ Voltage drop at $I_{\scriptscriptstyle B}$ Wire break/reverse polarity protection yes/Complete  Output function $4\text{-wire, 2 x NO contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Temperature drift	≤ ±10 %
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Hysteresis	315 %
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Electrical data	
AC rated operational current $\leq 400 \text{ mA}$ DC rated operating current $I_{\circ}$ $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protectionyes/LatchingVoltage drop at $I_{\circ}$ $\leq 6 \text{ V}$ Wire break/reverse polarity protectionyes/CompleteOutput function $4\text{-wire, 2 x NO contact, 2-wire}$ Smallest operating current $\geq 3 \text{ mA}$	Operating voltage U <sub>B</sub>	20250 VAC
DC rated operating current $I_e$ $\leq 300 \text{ mA}$ Frequency $\geq 50 \leq 60 \text{ Hz}$ Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection       yes/Latching         Voltage drop at $I_e$ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function $4$ -wire, $2 \times NO$ contact, $2$ -wire         Smallest operating current $\geq 3 \text{ mA}$	Operating voltage U <sub>B</sub>	10300 VDC
Frequency ≥ 50≤ 60 Hz  Residual current ≤ 1.7 mA  Isolation test voltage 1.5 kV  Surge current ≤ 3 A (≤ 20 ms max. 5 Hz)  Short-circuit protection yes/Latching  Voltage drop at I₀ ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 4-wire, 2 x NO contact, 2-wire  Smallest operating current ≥ 3 mA	AC rated operational current	≤ 400 mA
Residual current $\leq 1.7 \text{ mA}$ Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protectionyes/LatchingVoltage drop at $I_e$ $\leq 6 \text{ V}$ Wire break/reverse polarity protectionyes/CompleteOutput function4-wire, 2 x NO contact, 2-wireSmallest operating current $\geq 3 \text{ mA}$	DC rated operating current I <sub>o</sub>	≤ 300 mA
Isolation test voltage $1.5 \text{ kV}$ Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. } 5 \text{ Hz})$ Short-circuit protection       yes/Latching         Voltage drop at $I_\circ$ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function       4-wire, 2 x NO contact, 2-wire         Smallest operating current $\geq 3 \text{ mA}$	Frequency	≥ 50≤ 60 Hz
Surge current $\leq 3 \text{ A} (\leq 20 \text{ ms max. 5 Hz})$ Short-circuit protection       yes/Latching         Voltage drop at $I_e$ $\leq 6 \text{ V}$ Wire break/reverse polarity protection       yes/Complete         Output function       4-wire, 2 x NO contact, 2-wire         Smallest operating current $\geq 3 \text{ mA}$	Residual current	≤ 1.7 mA
$ \begin{array}{lll} & & & & \\ & & & \\ & & & \\ $	Isolation test voltage	1.5 kV
Voltage drop at I₀ ≤ 6 V  Wire break/reverse polarity protection yes/Complete  Output function 4-wire, 2 x NO contact, 2-wire  Smallest operating current ≥ 3 mA	Surge current	≤ 3 A (≤ 20 ms max. 5 Hz)
Wire break/reverse polarity protection yes/Complete  Output function 4-wire, 2 x NO contact, 2-wire  Smallest operating current ≥ 3 mA	Short-circuit protection	yes/Latching
Output function       4-wire, 2 x NO contact, 2-wire         Smallest operating current       ≥ 3 mA	Voltage drop at I <sub>e</sub>	≤ 6 V
Smallest operating current ≥ 3 mA	Wire break/reverse polarity protection	yes/Complete
	Output function	4-wire, 2 x NO contact, 2-wire
Valvo control	Smallest operating current	≥ 3 mA
valve control ≤ 2,5 A / ≤ 250 V	Valve control	≤ 2,5 A / ≤ 250 V
Switching frequency 0.02 kHz	Switching frequency	0.02 kHz



#### **Features**

- Rectangular, housing DSU35
- ■Plastic, PP-GF30-VO
- Two outputs for monitoring the position of rotary actuators
- Mounting on all standard actuators
- ■AC 4-wire, 20...250 VAC
- ■DC 4-wire, 10...300 VDC
- ■2 normally open contact
- ■Terminal chamber

## Wiring diagram



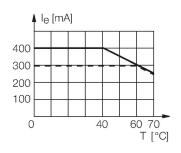
# Functional principle

Inductive sensors detect metal objects contactless and wear-free. Dual sensors are especially designed for position detection in rotary actuators. They combine the reliability of non-contact inductive sensors with the flexibility of a modular housing system.

# TURCK

#### Technical data

Mechanical data	
Design	Dual sensor for rotary actuators, DSU35
Dimensions	62 x 60 x 35.4 mm
Housing material	Plastic, PP-GF30, Yellow
Active area material	Plastic, PP-GF30, black
Max. tightening torque of housing nut	3 Nm
Electrical connection	Terminal chamber
Clamping ability	≤ 2.5 mm²
Environmental conditions	
Ambient temperature	-25+70 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
MTTF	2283 years acc. to SN 29500 (Ed. 99) 40 °C
Switching state	2 × LEDs, Yellow/red
Included in delivery	2 cable glands (black), 1 blanking plug



#### Accessories

#### BTS-DSU35-EB1

# 34 20 000 Bernor

#### 6900225

Actuation kit (puck) for dual sensors; end position damped; hole pattern on receptacle surface: 80 x 30 mm and 130 x 30 mm; connection shaft (shaft extension) height: 20 mm (30 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

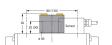
#### BTS-DSU35-Z07



#### 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

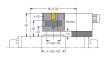
#### BTS-DSU35-EU2



# 6900455 Actuation kit (puck) for dual sensors;

Actuation kit (puck) for dual sensors; end position undamped for clockwise and counter-clockwise drives; hole pattern on flange surface 80 x 30 mm and 130 x 30 mm; connection shaft (shaft stud) height 20 (30) mm / Ø max. 30 mm

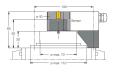
## BTS-DSU35-Z01



## 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

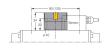
#### BTS-DSU35-Z03



#### 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

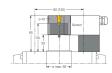
#### BTS-DSU35-EBE3



#### 6901070

Actuation kit (puck) for dual sensors; end position damped; "open" and "closed" switchpoint adjustable; hole pattern on receptacle surface: 80 x 30 mm and 130 x 30 mm; connection shaft (shaft extension) height: 20 mm/Ø: max. 30 mm

#### BTS-DSU35-Z06



#### 6900402

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: 30 mm/Ø: max. 40 mm

BTS-DSU35-Z04

6900286

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: 30 mm/Ø: max. 30 mm

BTS-DSU35-Z05

6900287

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: 30 mm/Ø: max. 30 mm