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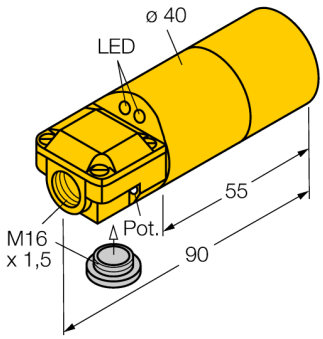
Inductive sensor rotational speed monitor DBI15U-K40SR-AP4X2

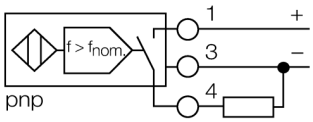
TURCK Industrial Automation



- **2 cable entries (axial, radial)**
- **Smooth barrel, Ø 40 mm**
- **Plastic, ABS**
- **Large monitoring range of 60 to 3000 1/min**
- **Fixed start-up time delay 5 s**
- **Switchpoint adjustable via potentiometer**
- **Factor 1 for all metals**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Terminal chamber**

Type	DBI15U-K40SR-AP4X2
Ident-No.	1500201
Rotational speed range, adjustable	1…50Hz
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	15 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	smooth barrel, 40 mm
Dimensions	90 mm
Housing material	Plastic, ABS
Material active face	Plastic, ABS
Connection	Terminal chamber
Clamping ability	≤ 2.5 mm²
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED yellow
Included in scope of supply	BS40, cable gland, blanking plug

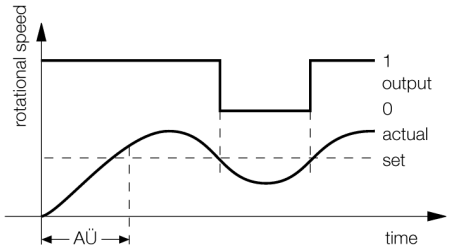
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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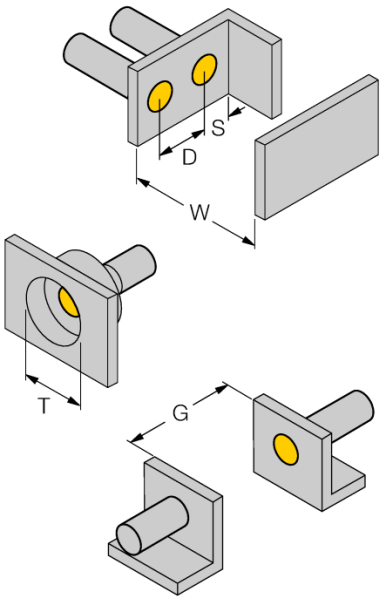
Inductive sensor rotational speed monitor DBI15U-K40SR-AP4X2

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 40 mm



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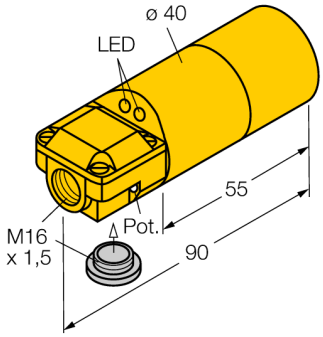
Inductive sensor rotational speed monitor DNI30U-K40SR-AP4X2

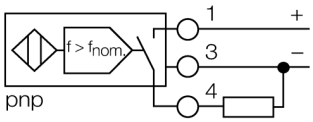
TURCK Industrial Automation



- **2 cable entries (axial, radial)**
- **Smooth barrel, Ø 40 mm**
- **Plastic, ABS**
- **Large monitoring range of 60 to 3000 1/min**
- **Fixed start-up time delay 5 s**
- **Switchpoint adjustable via potentiometer**
- **Factor 1 for all metals**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Terminal chamber**

Type	DNI30U-K40SR-AP4X2
Ident-No.	1500202
Rotational speed range, adjustable	1…50Hz
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	30 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	smooth barrel, 40 mm
Dimensions	90 mm
Housing material	Plastic, ABS
Material active face	Plastic, ABS
Connection	Terminal chamber
Clamping ability	≤ 2.5 mm²
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED yellow
Included in scope of supply	BS40, cable gland, blanking plug

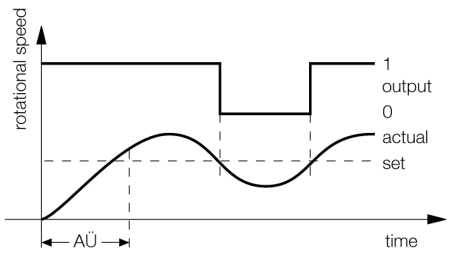
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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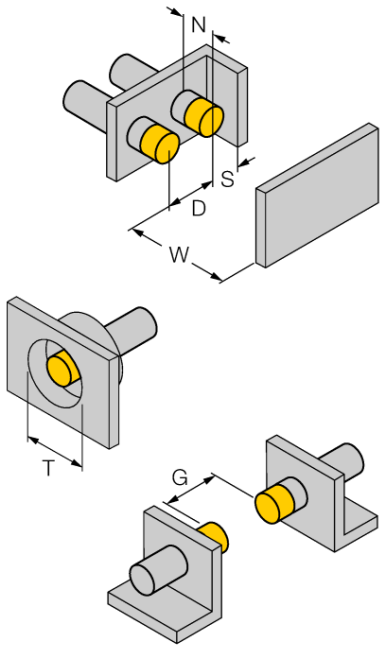
Inductive sensor
rotational speed monitor
DNI30U-K40SR-AP4X2

Mounting instructions	minimum distances
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B	Ø 40 mm



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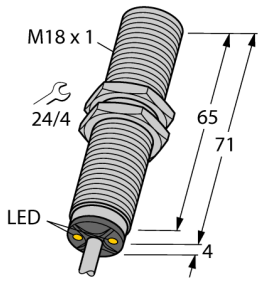
Inductive sensor
slip monitor
DBI5U-M18E-AP4X2 500/MIN

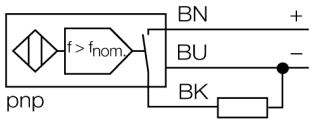
Industrial Automation



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Monitoring range 500 1/min**
- **Fixed start-up time delay 5 s**
- **Factor 1 for all metals**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DBI5U-M18E-AP4X2 500/MIN
Ident-No.	1582229
Rotational-speed range, fixed	500 1/min
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	5 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED yellow

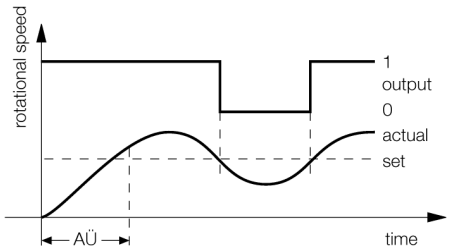
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit. If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up delay (AÜ) is triggered by applying voltage to the device and the output is switched off for 5 s (start-up time of the drive).

Diagram



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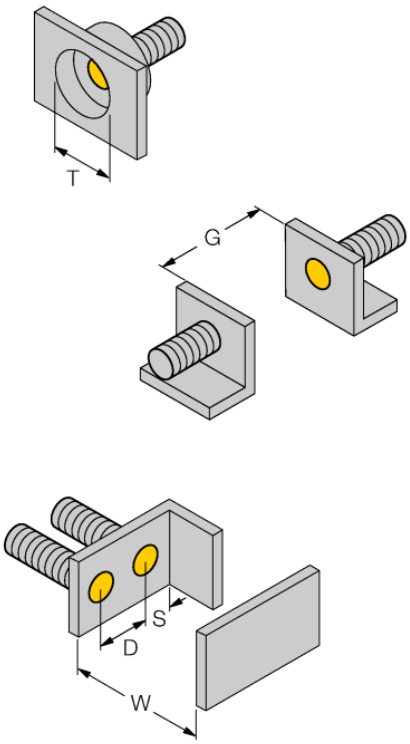
Inductive sensor
slip monitor
DBI5U-M18E-AP4X2 500/MIN

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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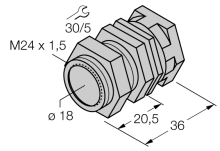
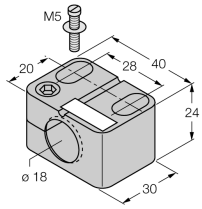
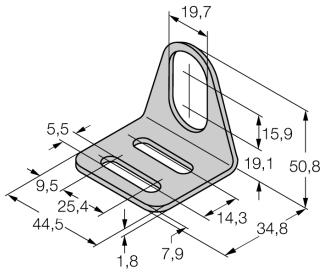
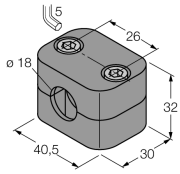
Inductive sensor slip monitor DBI5U-M18E-AP4X2 500/MIN

Accessories

Type code	Ident-No.	Short text	Dimension drawing
QM-18	6945102	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M24 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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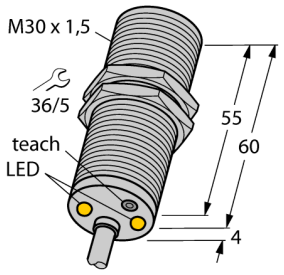
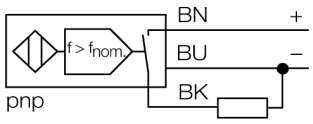
Inductive sensor rotational speed monitor DTBI10U-M30-AP4X2



- **Threaded barrel, M30 x 1.5**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via pushbutton [T]**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DTBI10U-M30-AP4X2
Ident-No.	1582230
Rotational speed range, adjustable	0.05…50Hz adjustable via button
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	10 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M30 x 1.5
Dimensions	64 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	75 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / red / blue

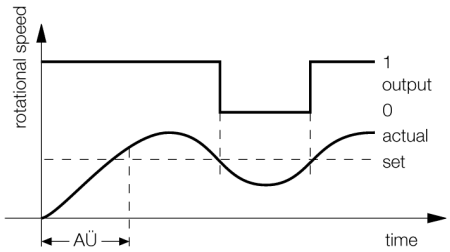
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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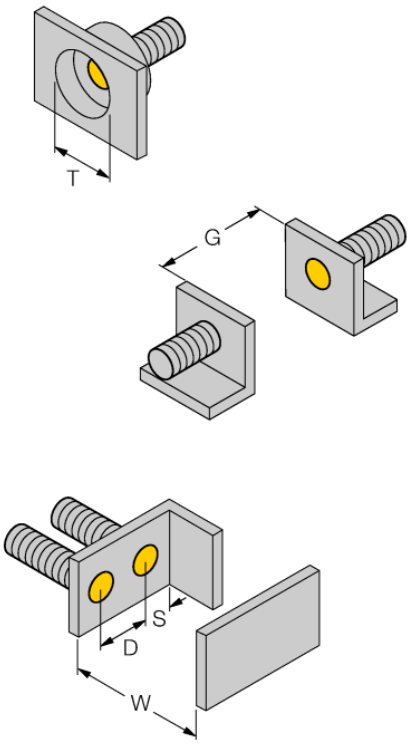
Inductive sensor
rotational speed monitor
DTBI10U-M30-AP4X2

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 30 mm



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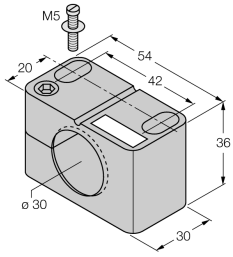
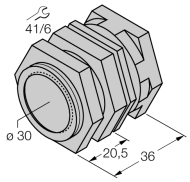
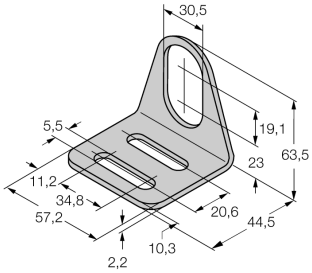
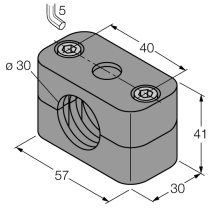
Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-30B	6947216	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
QM-30	6945103	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M36 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
MW-30	6945005	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-30	6901319	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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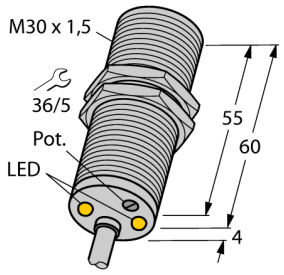
Industrial Automation

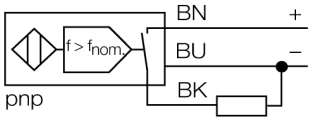
Inductive sensor rotational speed monitor DBI10U-M30-AP4X2



- **Threaded barrel, M30 x 1.5**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via potentiometer**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DBI10U-M30-AP4X2
Ident-No.	1582231
Rotational speed range, adjustable	0.05…50Hz adjustable via potentiometer
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	10 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M30 x 1.5
Dimensions	64 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	75 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / blue

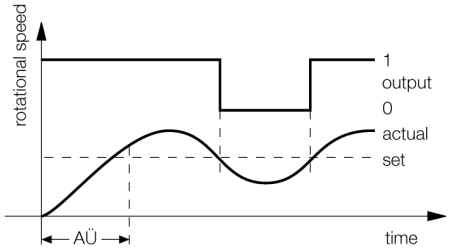
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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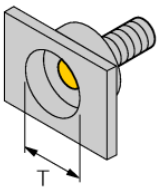
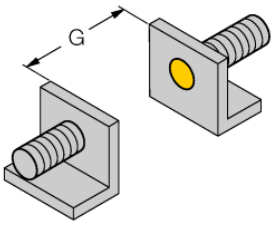
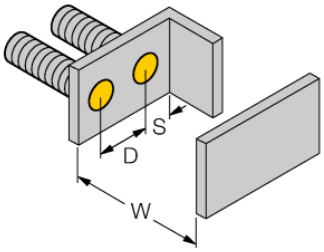
Inductive sensor
rotational speed monitor
DBI10U-M30-AP4X2

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 30 mm







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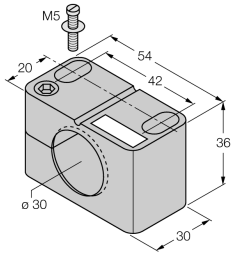
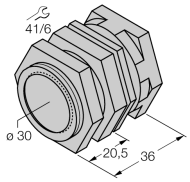
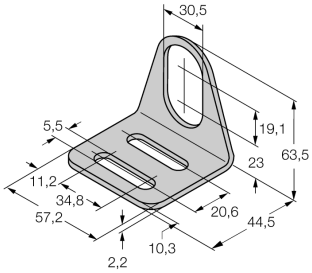
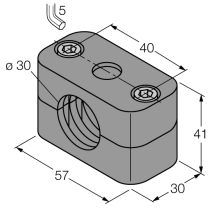
Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-30B	6947216	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
QM-30	6945103	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M36 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
MW-30	6945005	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-30	6901319	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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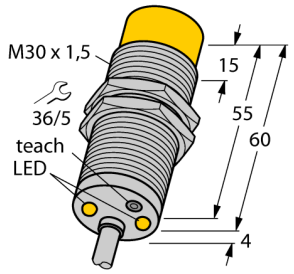
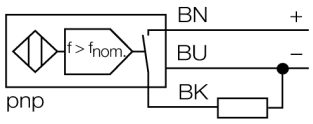
Inductive sensor rotational speed monitor DTNI20U-M30-AP4X2



- **Threaded barrel, M30 x 1.5**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via pushbutton [T]**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DTNI20U-M30-AP4X2
Ident-No.	1582232
Rotational speed range, adjustable	0.05…50Hz adjustable via button
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	20 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M30 x 1.5
Dimensions	64 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	75 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / red / blue

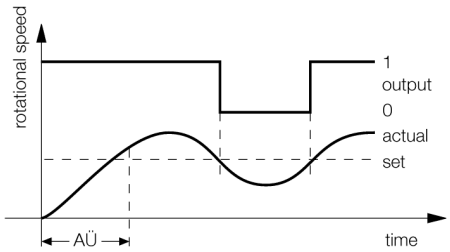
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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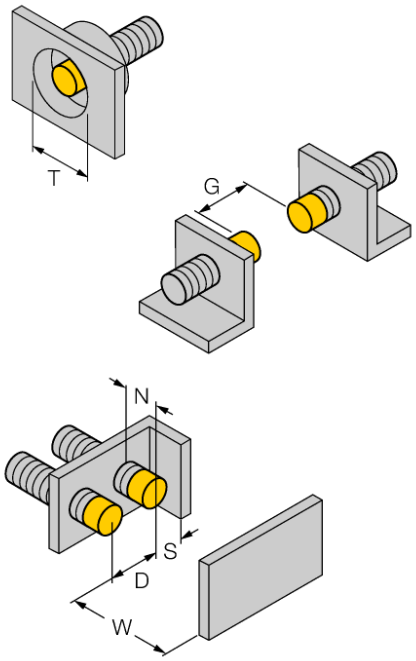
Inductive sensor rotational speed monitor DTNI20U-M30-AP4X2

Mounting instructions	minimum distances
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B	Ø 30 mm



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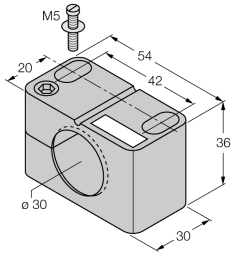
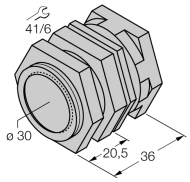
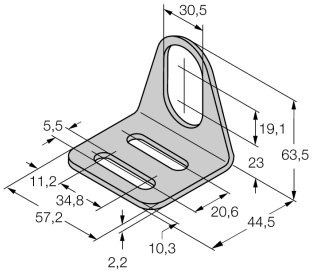
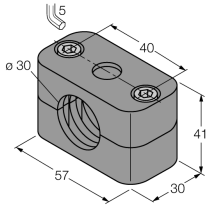
Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-30B	6947216	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
QM-30	6945103	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M36 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
MW-30	6945005	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-30	6901319	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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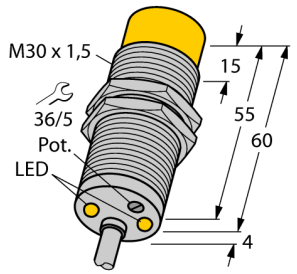
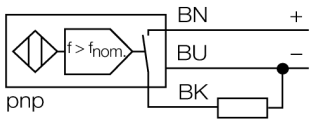
Inductive sensor rotational speed monitor DNI20U-M30-AP4X2



- **Threaded barrel, M30 x 1.5**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via potentiometer**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DNI20U-M30-AP4X2
Ident-No.	1582233
Rotational speed range, adjustable	0.05…50Hz adjustable via potentiometer
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	20 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M30 x 1.5
Dimensions	64 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	75 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / blue

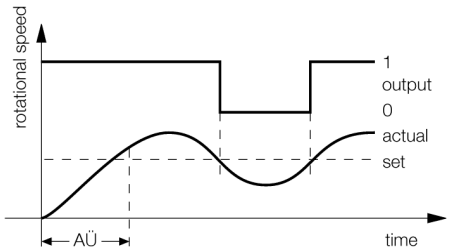
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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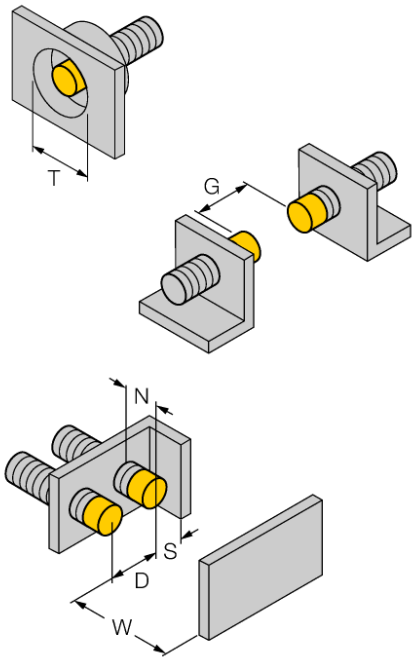
Inductive sensor rotational speed monitor DNI20U-M30-AP4X2

Mounting instructions	minimum distances
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B	Ø 30 mm



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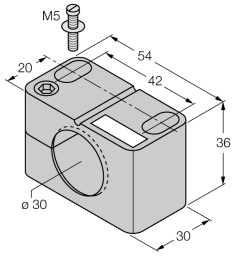
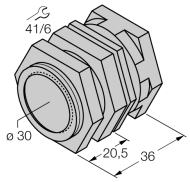
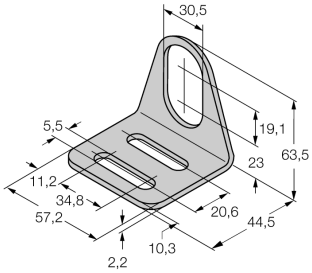
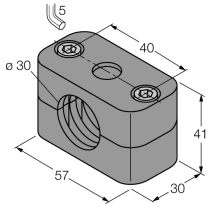
Inductive sensor rotational speed monitor DNI20U-M30-AP4X2

Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-30B	6947216	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
QM-30	6945103	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M36 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
MW-30	6945005	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-30	6901319	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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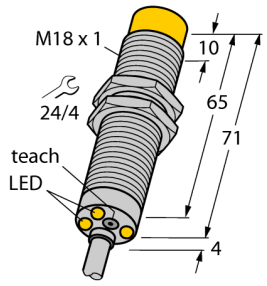
Inductive sensor
rotational speed monitor
DTNI12U-M18E-AP4X3

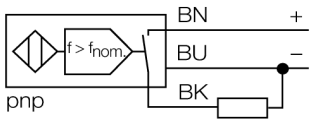
Industrial Automation



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via pushbutton [T]**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DTNI12U-M18E-AP4X3
Ident-No.	1582234
Rotational speed range, adjustable	0.05…50Hz
	adjustable via button
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	12 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / red / blue

Wiring diagram



Functional principle

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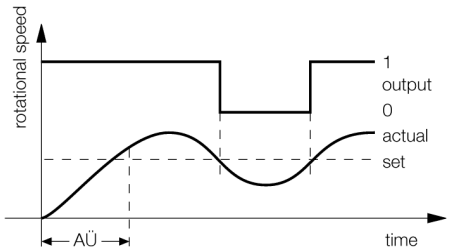
Diagram



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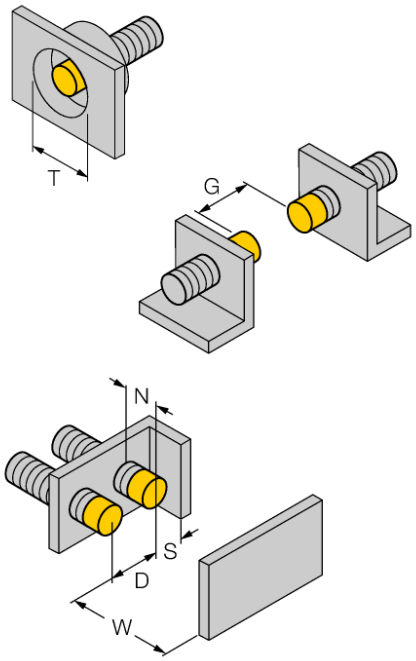
Inductive sensor rotational speed monitor DTNI12U-M18E-AP4X3

Mounting instructions	minimum distances
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B	Ø 18 mm



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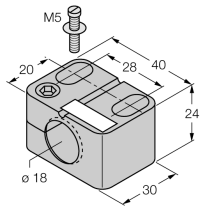
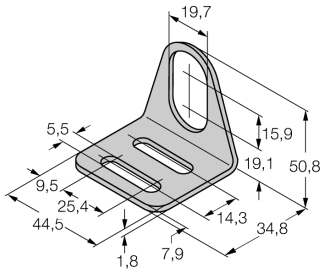
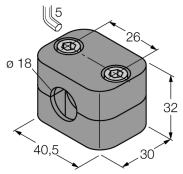
Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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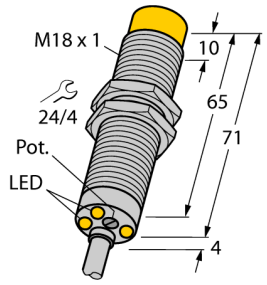
Inductive sensor
rotational speed monitor
DNI12U-M18E-AP4X3

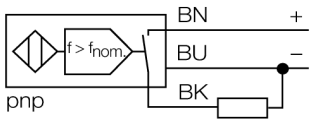
Industrial Automation



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via potentiometer**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DNI12U-M18E-AP4X3
Ident-No.	1582235
Rotational speed range, adjustable	0.05…50Hz
	adjustable via potentiometer
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	12 mm
Mounting condition	non-flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / blue

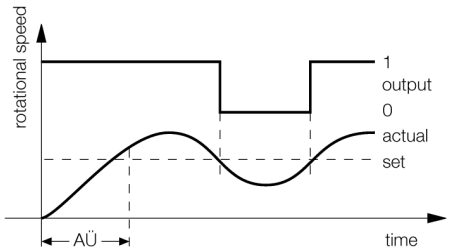
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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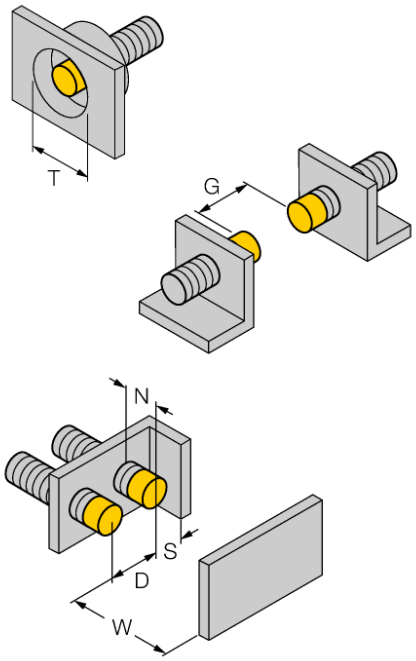
Inductive sensor rotational speed monitor DNI12U-M18E-AP4X3

Mounting instructions	minimum distances
Distance D	3 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn
Distance N	2 x Sn

Diameter of the active area B	Ø 18 mm



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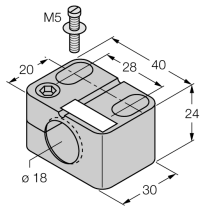
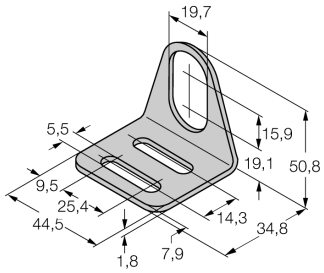
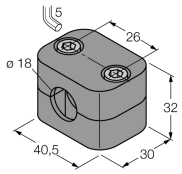
Accessories

Type code	Ident-No.	Short text	Dimension drawing
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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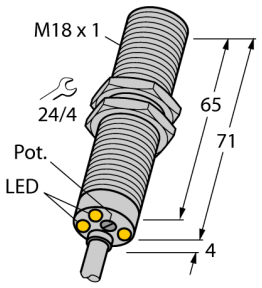
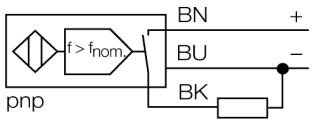
Inductive sensor rotational speed monitor DBI5U-M18E-AP4X3



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via potentiometer**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DBI5U-M18E-AP4X3
Ident-No.	1582236
Rotational speed range, adjustable	0.05…50Hz adjustable via potentiometer
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	5 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 % ≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / blue

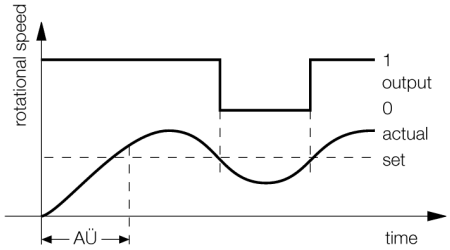
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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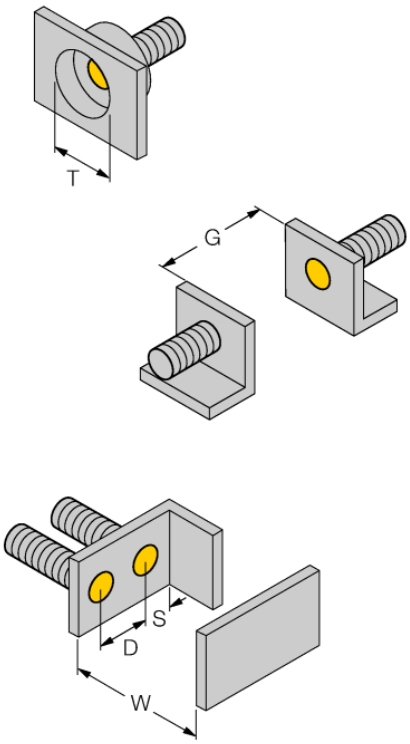
Inductive sensor rotational speed monitor DBI5U-M18E-AP4X3

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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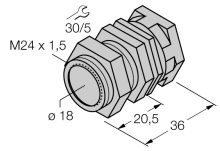
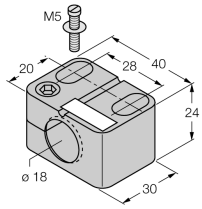
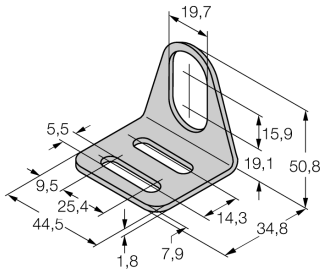
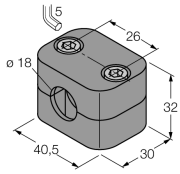
Accessories

Type code	Ident-No.	Short text	Dimension drawing
QM-18	6945102	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M24 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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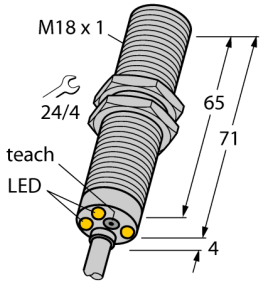
Inductive sensor
rotational speed monitor
DTBI5U-M18E-AP4X3

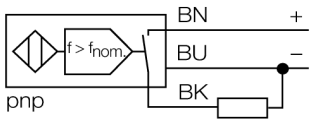
Industrial Automation



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Large monitoring range of 3 to 3000 1/ min**
- **Adjustable via pushbutton [T]**
- **Fixed start-up delay 5 s**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DTBI5U-M18E-AP4X3
Ident-No.	1582237
Rotational speed range, adjustable	0.05…50Hz
	adjustable via button
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	5 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Protection class	⧈
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED green / yellow / red / blue

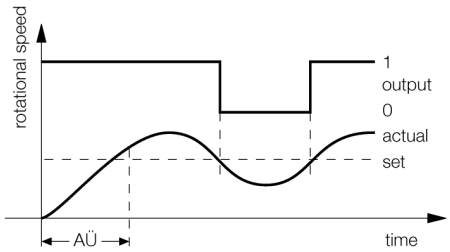
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up time delay (AÜ) is triggered by applying voltage to the device and closes the output for 5 s (start-up time of the drive).

Diagram



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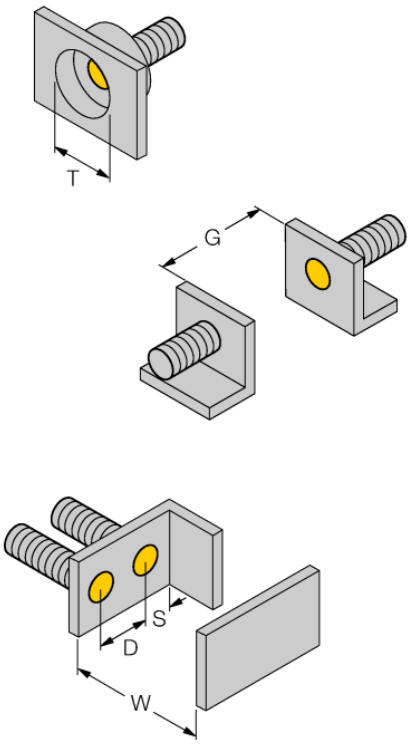
Inductive sensor rotational speed monitor DTBI5U-M18E-AP4X3

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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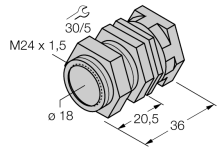
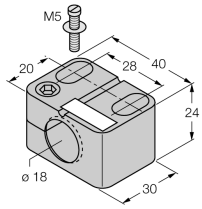
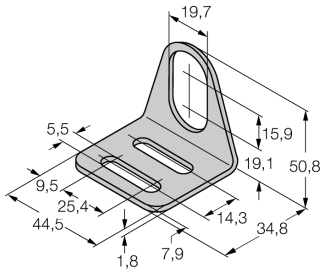
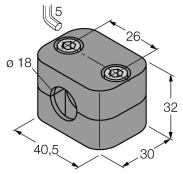
Accessories

Type code	Ident-No.	Short text	Dimension drawing
QM-18	6945102	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M24 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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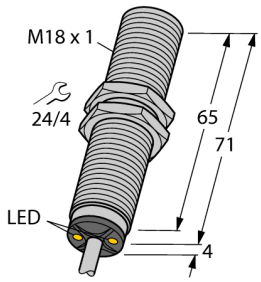
Inductive sensor
slip monitor
DBI5U-M18E-AP4X2 50/MIN

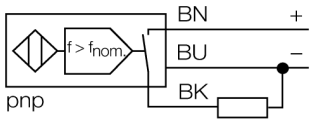
Industrial Automation



- **Threaded barrel, M18 x 1**
- **Chrome-plated brass**
- **Monitoring range 50 1/min**
- **Fixed start-up time delay 5 s**
- **Factor 1 for all metals**
- **Magnetic field immune**
- **DC 3-wire, 10…65 VDC**
- **NO contact, PNP output**
- **Cable connection**

Type	DBI5U-M18E-AP4X2 50/MIN
Ident-No.	1582239
Rotational-speed range, fixed	50 1/min
Hysteresis (rotational-speed range)	3…15%
Rated operating distance Sn	5 mm
Mounting condition	flush
Assured sensing range	≤ (0,81 x Sn) mm
Repeatability	≤ 2 %
Temperaturdrift	10 %
	≤ ± 15 %, ≤ -25 °C v ≥ +70 °C
Hysteresis	3…15 %
Ambient temperature	-30…+85 °C
Operating voltage	10…65VDC
Residual ripple	≤ 10 % U_{ss}
DC rated operational current	≤ 200 mA
No-load current I_0	≤ 20 mA
Residual current	≤ 0.1 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes/ cyclic
Voltage drop at I_e	≤ 1.8 V
Wire breakage / Reverse polarity protection	yes/ complete
Output function	3-wire, NO contact, PNP
Design	threaded barrel, M18 x 1
Dimensions	75 mm
Housing material	Metal, CuZn, chrome-plated
Material active face	Plastic, PBT
End cap	Plastic, EPTR
Max. tightening torque housing nut	25 Nm
Connection	cable
Cable quality	5.2 mm, LifYY, PVC, 2 m
Cable cross section	3 x 0.34 mm^2
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
Operating voltage	LED green
Switching state	LED yellow

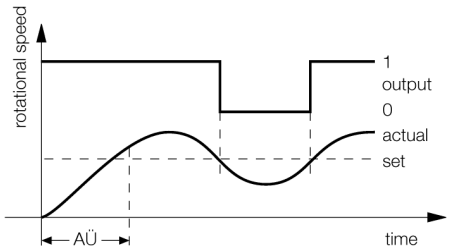
Wiring diagram



Functional principle

The rotational speed is detected by periodic damping of the integrated inductive sensor. This can be accomplished via metal targets or teeth on the monitored shaft. The pulse sequence generated is compared to an adjustable reference value in a comparator circuit. If the rotational speed is below the reference value, the output is switched on (0). If the reference value is exceeded, the output is switched off (1). The start-up delay (AÜ) is triggered by applying voltage to the device and the output is switched off for 5 s (start-up time of the drive).

Diagram



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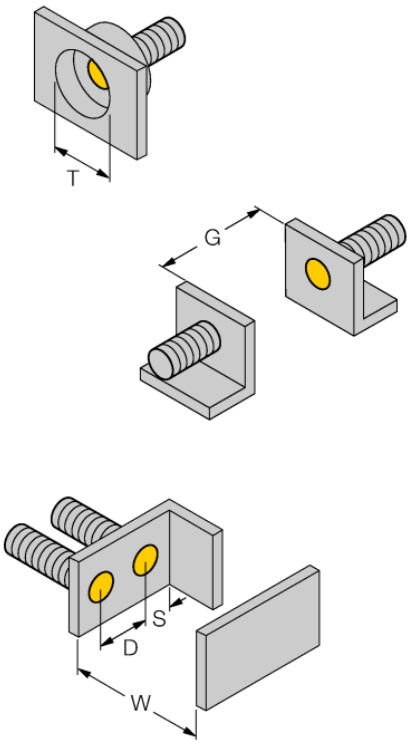
Inductive sensor
slip monitor
DBI5U-M18E-AP4X2 50/MIN

Mounting instructions	minimum distances
Distance D	2 x B
Distance W	3 x Sn
Distance T	3 x B
Distance S	1.5 x B
Distance G	6 x Sn

Diameter of the active area B	Ø 18 mm



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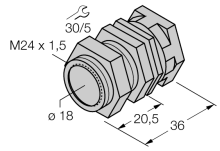
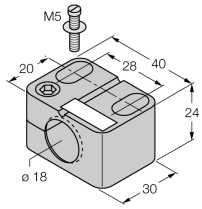
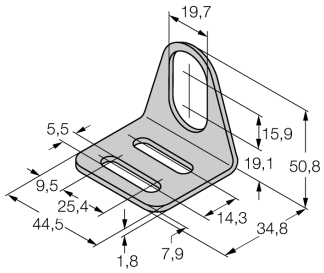
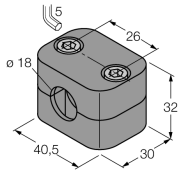
Inductive sensor slip monitor DBI5U-M18E-AP4X2 50/MIN

Accessories

Type code	Ident-No.	Short text	Dimension drawing
QM-18	6945102	Quick-mount bracket with dead-stop; material: Chrome-plated brass Male thread M24 x 1.5. Note: The switching distance of proximity switches can be reduced by the use of quick-mount brackets.	
BST-18B	6947214	Fixing clamp for threaded barrel devices, with dead-stop; material: PA6	
MW-18	6945004	Mounting bracket for threaded barrel devices; material: Stainless steel A2 1.4301 (AISI 304)	
BSS-18	6901320	Mounting bracket for smooth and threaded barrel devices; material: Polypropylene	

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