

Индуктивные датчики TR, TL

Технические характеристики

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Standard Range-TR series

Pre-wired



Basic Features	Working principle	Inductive sensor									
	Housing	Cylindrical									
	Installation type	Flush					Non-flush				
	Sensing distance	1.5mm±10%		2.0mm±10%	5.0mm±10%	10mm±10%	2.0mm±10%		4.0mm±10%	8.0mm±10%	15mm±10%
	Thread size	Φ5.5	M8	M12	M18	M30	Φ6.5	M8	M12	M18	M30
	Sensing surface material	PBT									
	Detected objects	Metal									
	Indicator	Operation Status: LED									
	Sensing range adjustment	None									
Electrical data	Switching output	Normally Open or Normally Closed									
	Output mode	NPN or PNP Open Collector									
	External input	None									
	Switching frequency	2.0kHz	1.5kHz	1.0kHz		0.3kHz	2.0kHz	1.0kHz	0.8kHz	0.5kHz	0.15kHz
	Repeatability	1%							5%	1%	
	Hysteresis	≤15%									
	Operating Voltage	10~30V DC±10%									
	Current consumption	≤10mA								≤20mA	
	Residual Voltage	≤1.5V	≤2.0V				≤1.5V	≤2.0V			
	Load current	150mA									
	Leakage current	<0.01mA									
	Insulation resistance	≥50MΩ with 500V DC between power terminals and enclosure									
	Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between power terminals and enclosure									
	Vibration resistance	10 to 55 Hz, 1.5 mm double amplitude, 2 hours for each X, Y, and Z directions									
	Environmental conditions	Circuit Protection	Short circuit protection								
Operating Temperature		-25~+75℃									
Operating Humidity		35~85%									
Enclosure rating		IP67									
Mechanical data	Connection type	2m/3-core Cable									
	Dimension	Ø6.5x45.5mm · M8x46.7mm		M12x49.7mm	M18x63.0mm	M30x55.6mm	Ø6.5x45.0mm · M8x50.7mm		M12x54.6mm	M18x63.1mm	M30x58.5mm
	Material	Stainless steel+PBT		Copper-nickel alloy+PBT			Stainless steel+PBT		Copper-nickel alloy+PBT		
	Weight	0.009kg	0.012kg	0.05kg	0.08kg	0.12kg	0.009kg	0.012kg	0.05kg	0.08kg	0.12kg
	Accessories	-	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5	-	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5
Model	NPN NO	TRF15-1.5NO TRF08-1.5NC TRF12-02NO TRF18-05NC TRF30-10NO TRN15-02NC TRN08-02NO TRN12-04NC TRN18-08NC TRN30-15NC									
	Others	NC NPN Normally open NC NPN Normally closed PO PNP Normally open PC PNP Normally closed									

Standard Distance-TR Series

Connector Type



Basic Features	Working principle	Inductive sensor						
	Housing	Cylindrical						
	Installation type	Flush				Non-flush		
	Sensing distance	1.5mm ± 10%	2.0mm ± 10%	5.0mm ± 10%	10mm ± 10%	2.0mm ± 10%	4.0mm ± 10%	8.0mm ± 10%
	Thread size	M8	M12	M18	M30	M8	M12	M18
	Sensing surface material	PBT						
	Detected objects	Metal						
	Indicator	Operation Status: LED						
	Sensing range adjustment	None						
Electrical data	Switching output	Normally Open or Normally Closed						
	Output mode	NPN or PNP Open Collector						
	External input	None						
	Switching frequency	1.5kHz	2.0kHz	1.0kHz	0.3kHz	1.0kHz	0.5kHz	0.15kHz
	Repeatability	1%						
	Hysteresis	≤ 15%						
	Operating Voltage	10~30V DC±10%						
	Current consumption	≤ 10mA						
	Residual Voltage	≤ 1.5V						
	Load current	150mA						
	Leakage current	< 0.01mA						
	Insulation resistance	≥ 50MΩ with 500V DC between power terminals and enclosure						
	Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between power terminals and enclosure						
	Vibration resistance	10 to 55 Hz, 1.5 mm double amplitude, 2 hours for each X, Y, and Z directions						
	Circuit Protection	Short circuit protection						
Environmental conditions	Operating Temperature	-25~+75°C						
	Operating Humidity	35~85%						
	Enclosure rating	IP67						
Mechanical data	Connection type	M8/3-pin Connector		M12/4-pin Connector		M8/3-pin Connector		M12/4-pin Connector
	Dimension	M8x60.0mm	M12x68.0mm	M18x82.0mm	M30x78.0mm	M8x60.0mm	M12x67.0mm	M18x78.0mm
	Material	Stainless steel+PBT		Copper-nickel alloy+PBT		Stainless steel+PBT		Copper-nickel alloy+PBT
	Weight	0.012kg	0.05kg	0.08kg	0.12kg	0.012kg	0.05kg	0.08kg
	Accessories	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5	Nut M8x1	Nut M12x1	Nut M18x1
Model	NPN NO	TRF08-1.5[NIO]-E1	TRF12-02[NIO]-E2	TRF18-05[NIO]-E2	TRF30-10[NIO]-E2	TRN08-02[NIO]-E1	TRN12-04[NIO]-E2	TRN18-08[NIO]-E2
	Others	[NIO]:NPN Normally open		[NIC]:NPN Normally closed		[PIO]:PNP Normally open		[PIC]:PNP Normally closed

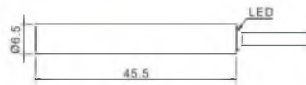
Standard Distance-TR Series

Dimensions- Pre-wired Type

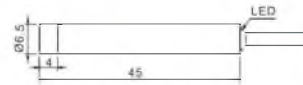
Unit:mm

φ6.5

TRF6.5-1.5□□

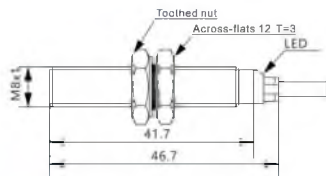


TRN6.5-02□□

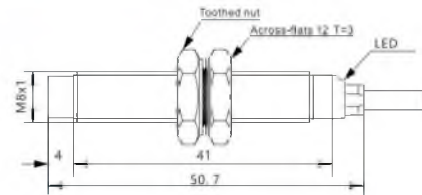


M8

TRF08-1.5□□

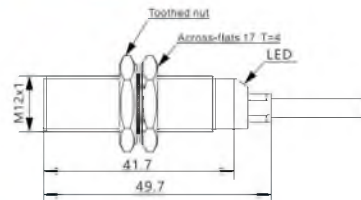


TRN08-02□□

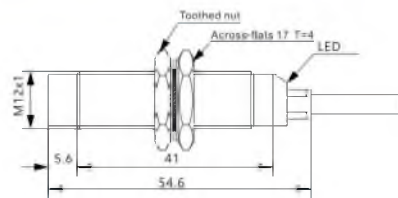


M12

TRF12-02□□

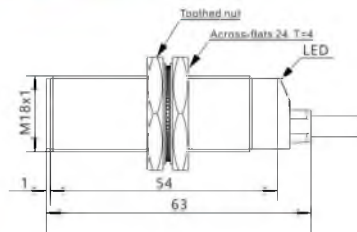


TRN12-04□□

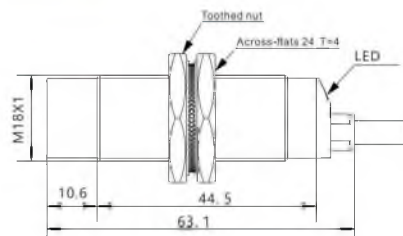


M18

TRF18-05□□

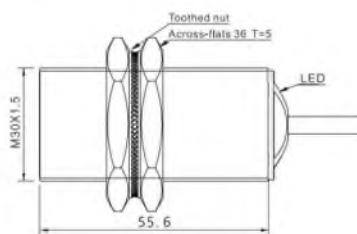


TRN18-08□□

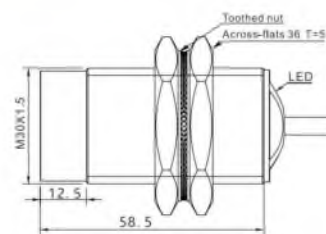


M30

TRF30-10□□



TRN30-15□□



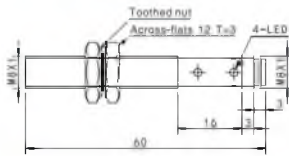
Standard Distance-TR Series

Unit:mm

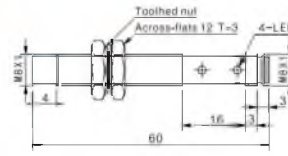
Dimensions- Connector Type

M6

TRF08-1.5□□-E1

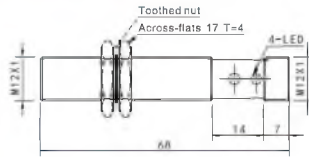


TRN08-02□□-E1

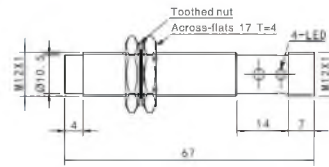


M12

TRF12-02□□-E2

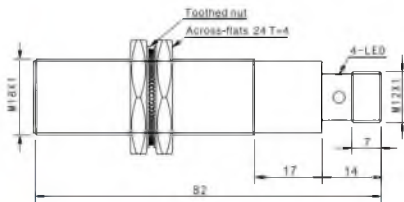


TRN12-04□□-E2

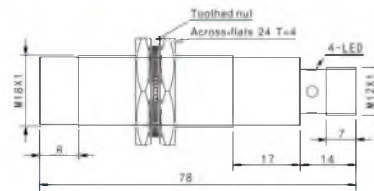


M18

TRF18-05□□-E2

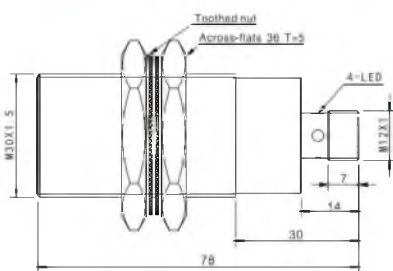


TRN18-08□□-E2

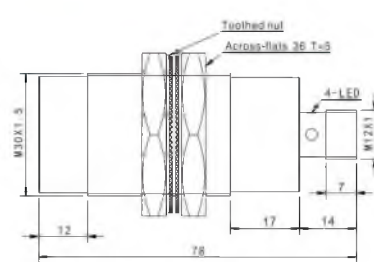


M30

TRF30-10□□-E2



TRN30-15□□-E2



Extended Distance-TL Series

Pre-wired Type



Basic Features	Working principle	Inductive sensor										
	Housing	Cylindrical										
	Installation type	Flush					Non-flush					
	Sensing distance	2.0mm ± 10%		4.0mm ± 10%	8.0mm ± 10%	16mm ± 10%	4.0mm ± 10%		8.0mm ± 10%	16mm ± 10%	25mm ± 10%	
	Thread size	φ6.5	M8	M12	M18	M30	φ6.5	M8	M12	M18	M30	
	Sensing surface material	PBT										
	Detected objects	Metal										
	Indicator	Operation Status: LED										
	Sensing range adjustment	None										
Electrical data	Switching output	Normally Open or Normally Closed										
	Output mode	NPN or PNP Open Collector										
	External input	None										
	Switching frequency	2.0kHz	1.0kHz	0.3kHz	0.5kHz	0.15kHz	1.0kHz	0.8kHz	0.5kHz	0.15kHz	0.1kHz	
	Repeatability	1%		5%	1%			5%		1%		
	Hysteresis	≤15%										
	Operating Voltage	10~30V DC±10%										
	Current consumption	≤10mA										
	Residual Voltage	≤1.5V	≤2.0V				≤1.5V	≤2.0V				
	Load current	150mA										
	Leakage current	<0.01mA										
	Insulation resistance	≥50MΩ with 500V DC between power terminals and enclosure										
	Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between power terminals and enclosure										<40V
	Vibration resistance	10 to 55 Hz, 1.5 mm double amplitude, 2 hours for each X, Y, and Z directions										
	Environmental conditions	Circuit Protection	Short circuit protection									
Operating Temperature		-25~+75℃										
Operating Humidity		35~85%										
Enclosure rating		IP67										
Mechanical data	Connection type	2m/3-core Cable										
	Dimension	Ø6.5x45.5mm	M8x46.7mm	M12x49.7mm	M18x63.0mm	M30x55.6mm	Ø6.5x45.0mm	M8x50.7mm	M12x54.6mm	M18x63.1mm	M30x58.5mm	
	Material	Stainless steel+PBT			Copper-nickel alloy+PBT			Stainless steel+PBT		Copper-nickel alloy+PBT		
	Weight	0.009kg	0.012kg	0.05kg	0.08kg	0.12kg	0.009kg	0.012kg	0.05kg	0.08kg	0.12kg	
	Accessories	-	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5	-	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5	
Model	NPN NO	TLF6.5-02	TLF08-02	TLF12-04	TLF18-08	TLF30-16	TLN6.5-04	TLN08-04	TLN12-08	TLN18-16	TLN30-25	
	Others	[NO]:NPN Normally open		[NC]:NPN Normally closed			[PO]:PNP Normally open		[PC]:PNP Normally closed			



Basic Features	Working principle	Inductive sensor							
	Housing	Cylindrical							
	Installation type	Flush				Non-flush			
	Sensing distance	2.0mm ± 10%	4.0mm ± 10%	8.0mm ± 10%	16mm ± 10%	4.0mm ± 10%	8.0mm ± 10%	16mm ± 10%	25mm ± 10%
	Thread size	M8	M12	M18	M30	M8	M12	M18	M30
	Sensing surface material	PBT							
	Detected objects	Metal							
	Indicator	Operation Status: LED							
	Sensing range adjustment	None							
Electrical data	Switching output	Normally Open or Normally Closed							
	Output mode	NPN or PNP Open Collector							
	External input	None							
	Switching frequency	1kHz	0.5kHz	0.15kHz	0.8kHz	0.5kHz	0.15kHz	0.1kHz	
	Repeatability	1%							
	Hysteresis	≤15%							
	Operating Voltage	10~30V DC±10%							
	Current consumption	≤10mA							
	Residual Voltage	≤1.5V							
	Load current	150mA							
	Leakage current	<0.01mA							
	Insulation resistance	≥50MΩ with 500V DC between power terminals and enclosure							
	Dielectric strength	1,000 VAC, 50/60 Hz for 1 min between power terminals and enclosure						≤40V	
	Vibration resistance	10 to 55 Hz, 1.5 mm double amplitude, 2 hours for each X, Y, and Z directions							
Environmental conditions	Circuit Protection	Short circuit protection							
	Operating Temperature	-25~+75℃							
	Operating Humidity	35~85%							
	Enclosure rating	IP67							
Mechanical data	Connection type	M8/3-pin Connector	M12/4-pin Connector		M8/3-pin Connector	M12/4-pin Connector			
	Dimension	M8x60.0mm	M12x68.0mm	M18x82.0mm	M30x78.0mm	M8x60.0mm	M12x71.0mm	M18x82.0mm	M30x81.0mm
	Material	Stainless steel+PBT	Copper-nickel alloy+PBT		Stainless steel+PBT	Copper-nickel alloy+PBT			
	Weight	0.012kg	0.05kg	0.08kg	0.12kg	0.012kg	0.05kg	0.08kg	0.12kg
	Accessories	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5	Nut M8x1	Nut M12x1	Nut M18x1	Nut M30x1.5
Model	NPN NO	TLF08-02[NIO]-E1	TLF12-04[NIO]-E2	TLF18-08[NIO]-E2	TLF30-16[NIO]-E2	TLN08-04[NIO]-E1	TLN12-08[NIO]-E2	TLN18-16[NIO]-E2	TLN30-25[NIO]-E2
	Others	[NIO]:NPN Normally open		[NIC]:NPN Normally closed		[PIO]:PNP Normally open		[PIC]:PNP Normally closed	

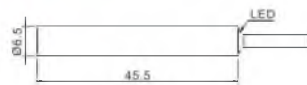
Extended Distance-TL Series

Dimensions-Pre-wired Type

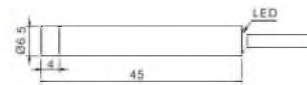
Unit:mm

L6.5

TLF6.5-02□□

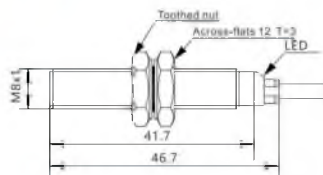


TLN6.5-04□□

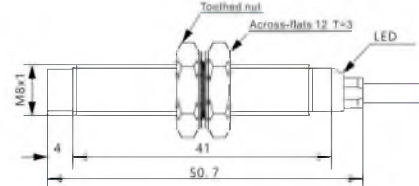


M8

TLF08-02□□

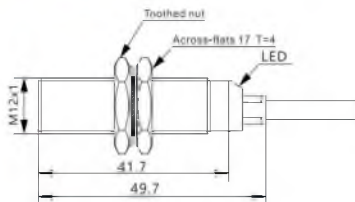


TLN08-04□□

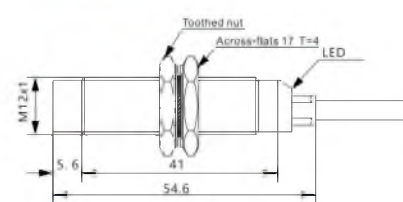


M12

TLF12-04□□

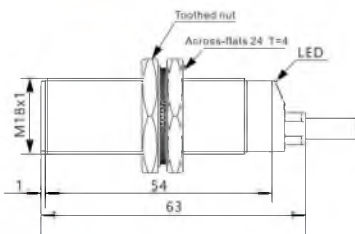


TLN12-08□□

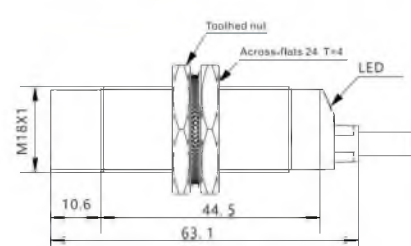


M18

TLF18-08□□

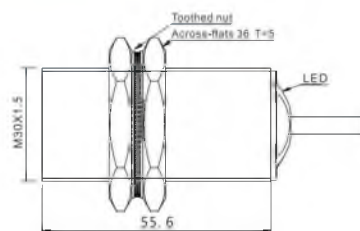


TLN18-16□□

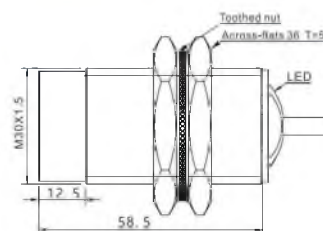


M30

TLF30-16□□



TLN30-25□□



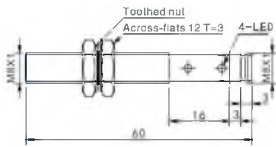
Extended Distance-TL Series

Unit:mm

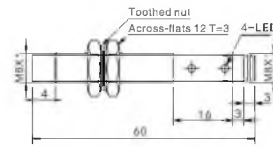
Dimensions- Connector Type

M8

TLF08-02□□-E1

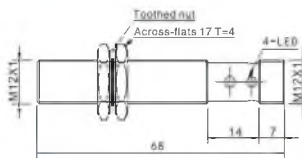


TLN08-04□□-E1

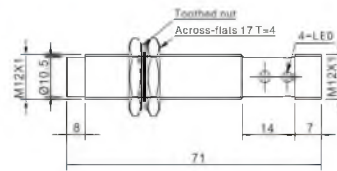


M12

TLF12-04□□-E2

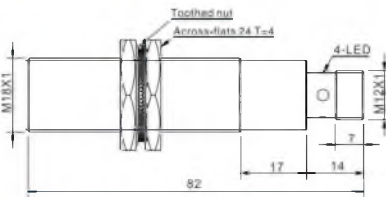


TLN12-08□□-E2

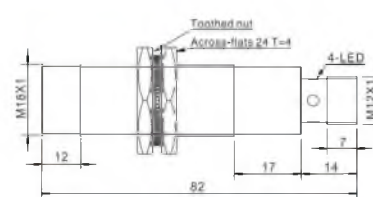


M16

TLF18-08□□-E2

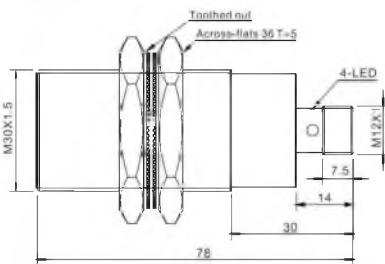


TLN18-16□□-E2

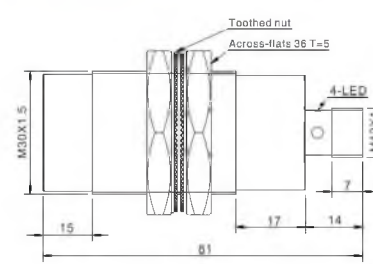


M30

TLF30-16□□-E2



TLN30-25□□-E2



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