

# Proximity Sensor

**DLE Series** 

### User Manual

Thank you for choosing Degson products. Please read this manual carefully before using the product.

For your convenience, please keep this manual properly so that you can refer to it at any time.

# symbol

The following symbols are important reminders in this manual. Please be sure to comply with the following.					
$\bigtriangleup$	Indicates that if you ignore this mark and operate incorrectly, it may cause death or serious injury. In addition.you may suffer significant material damage.				
	There is a risk of malfunction or fire. Please do not exceed the rated voltage when using.				
	Do not use ACpower as there is a risk of rupture.				
	There is a risk of burns due to high temperatures.				

# Safety Tips

- The following contents are necessary to ensure safe use, please be sure to comply.

  Do not use in an environment with flammable, volatile or explosive gases. Do not disassemble, repair or modify this product. About
  power supply voltage:
- Do not use the product beyond the specified voltage. If you use a voltage higher than the rated voltage or apply AC power to a product that can only use DC power, it may cause the product to explode or burn.
- For short circuit at load end: Do not short-circuit the load. Do not connect the load end directly to the power supply. Otherwise, the product may explode or burn.
  About wiring:
- Do not make mistakes such as mistaking the power polarity or miswiring. Otherwise, the product may explode or burn. Regarding wiring when there is no load:
- when there is no load: If the power is turned on without connecting a load, there is a risk of internal components rupturing or burning, so please connect the wires and turn on the power after connecting a load.

#### Instructions for use

Do not use in the following places:

- Outdoor places with direct sunlight, rain, snow, water drops, etc. Chemicals, especially in solvent and acid vapor environments. In the presence of corrosive gases.
- When used near mobile phones, transceivers, etc., the proximity switch may malfunction, so please be careful. When mixed with high-voltage wires and power wires in the same wiring conduit or wiring trough, malfunction or damage
  may occur due to induction. Please separate or wire separately.
- Regarding cleaning work:
   Do not use solvent cleaners as they may melt the product surface.
- fixed: Please set the tightening torque of the fixing screws to no more than 0.95N-m.
- Influence of surrounding metal:
   If there is metal around, it may cause a reset failure, etc. Even if there is no reset failure,
- the detection distance may change due to the surrounding metal or temperature changes

# Confirmation of packaging contents

sensorUser Manual

one one

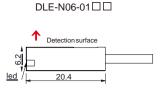
# Technical Parameters

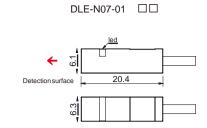
Reference         Interface Section S								
Initialian         Initialian         Initialian           Initialian         1.0mms10%         2.5mms10%           Tread specification		How it works		Inductive Sensors				
Index         Second data         Second data         Second data           Find operation		Shell style	Mini Blocks					
Image spatialize number of a spatial spatia spatial spatial spatial spatia spatial spatial spat		Installation	Non-flush					
Base in gas and an material         Image in a state an material         Image in a state an material           Bedicion digica         Image in a state an material         Image in a state an material         Image in a state an material           Indexion Lights         Image in a state an material         Image in a state an material         Image in a state an material           Indexion Lights         Image in a state an material         Image in a state an material         Image in a state an material           Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material           Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material           Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material           Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and material         Image in a state and materian         Image in a state a		Detection distance	1.0mm±	.15%	2.5mm	u±10%		
Instrume         Metal amount           Pecific olgon		Thread specification		-				
Andrage and an antipage of the second	Basicfeatures	Sensing surface material	PC					
Internet states asjutation of live states asjut		Detection object	Metal sensor					
Noise         Noise         Noise           0 diput Mode         Important		Indicator Lights	Operating status: LED					
Indication         NPN or PN		Detection distance adjustment	none					
Interview         Interview           Repeatability         0.65Hz         0.8Hz           Repeatability         0.8Hz         0.8Hz           Hysteresis (hysteresis)         1000000000000000000000000000000000000		Switch mode	NO: Normally Open, NC: Normally Closed					
Number of frequency         0.55Hz         0.8HHz           Switching frequency         0.55Hz         0.8HHz           Repeatability         3/2         3/2           Hysteresis (hysteresis)		Output Mode	NPN or PNP open collector					
Initial constraint         Initial constraint           Repeated integration         Initial constraint           Hysteresis (hysteresis)         Image: Image		External Input	none					
International of the set of the		Switching frequency	0.5	Hz	0.8	kHz		
$\begin{tabular}{ c                                   $		Repeatability	5	%	1'	%		
Beleficied and		Hysteresis (hysteresis)	15%					
Reskul voltageCurrent on some priorCurrent on some prior		Operating voltage	10~30V DC±10%					
Nome         Nome         Nome           In ad current         Initiation         Initiaition         Initiation         I	Electrical data	Current consumption	≤10mA					
Instrument         Instrum		Residual voltage	≤1.5V					
Insulation resistance		Load current	100mA		150mA			
Presure resistance         1000VAC (50/60Hz), 1 minute viewen power terminals and case           Presure resistance         1000VAC (50/60Hz), 1 minute viewen power terminals and case           Vibration resistance         1000VAC (50/60Hz), 1 minute viewen power terminals and case           Protection Circuit         Short circuit protection           Protection Circuit         Short circuit protection           Stort for		Leakage Current	<0.01mA					
Normally Open IDE-NOG-ONDO         Vibration resistance       Normally Open IDE-NOG-ONDO         Vibration resistance       Normally Open IDE-NOG-ONDO         Vibration resistance       Normally IDE-NOG-ONDO         Vibration resistance       Service IDE-SED-SED-SED-SED-SED-SED-SED-SED-SED-S		Insulation resistance	Between power terminal and housing ≥50MΩ (500VDC)					
Protection CircuitProtection CircuitControlShort Circuit protectionProtection CircuitCorrectionCorrectionCorrectionEnvironment humidityCorrectionSince Since		Pressure resistance	1000VAC (50/60Hz), 1 minute between power terminals and case					
$\begin{tabular}{ c c c } \hline \hline \begin{tabular}{ c c c } \hline \hline \begin{tabular}{ c c c } \hline \hline \begin{tabular}{ c c } \hline \hline \ \ \begin{tabular}{ c c } \hline \hline \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $		Vibration resistance	10~55Hz, amplitude 1.5mm, X/Y/Z axis, 2 hours each					
$\frac{1}{100} \frac{1}{100} \frac{1}$		Protection Circuit	-		Short circuit protection			
Working environment number of the set		Operating temperature	-25~+75°C					
Image: Matrix and State	Environmental conditions	Working environment humidity	35~85%					
Image: Marcinal data         Image: Constraint of the constraint of th		Protection level	IP67					
Mechanical data         Meterial         Control cont	Mechani cal data	Connection	2m/3-wire cable					
Material         Material         Construction           weight         0.05kg         0.05kg           Accessories         0.05kg         0.05kg           Model         DLE-N06-01[ND]         DLE-N07-01[ND]         DLE-N08-2.5[ND]		Dimensions (W x H x D)	20.4x6.4x6.2mm	20.4x6.3x6.1mm	23.5x8.4x8.0mm	25.5x8.4x8.0mm		
weight         0.05/2010/2010/2010/2010/2010/2010/2010/20		Material	Plastic+PC					
Model         NPN Normally Open         DLE-N06-01[N][O]         DLE-N07-01[N][O]         DLE-N08-2.5[N][O]         DLE-N09-2.5[N][O]		weight	0.05kg					
Model		Accessories	•					
	Model	NPN Normally Open	DLE-N06-01	DLE-N07-01	DLE-N08-2.5	DLE-N09-2.5NO		
		other		n NCINPN Normally Closed	PO PNP Normally Open	PC PNP Normally Closed		

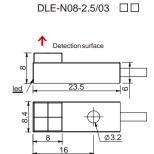
	How it works	Inductive Sensors						
Basicfeatures	Shell style	Mini Blocks						
	Installation	Non-flush						
	Detection distance	2.5mm±10%	4.0mm:	±10%	5.0mm±10%	8.0mm±10%	5.0mm±10%	8.0mm±10%
	Thread specification		·					
	Sensing surface material	PC						
	Detection object	Metal sensor						
	Indicator Lights	Operating status: LED						
	Detection distance adjustment	none						
	Switch mode	NO: Normally Open, NC: Normally Closed						
	Output Mode	NPN or PNP open collector						
	External Input	none						
	Switching frequency	0.8	кНz	0.2kHz	1kHz 0.5kH		κHz	
	Repeatability	59	%			1%		
	Hysteresis (hysteresis)	15%						
	Operating voltage	10~30V DC±10%						
	Current consumption	≤10mA						
Electrical data	Residual voltage	≤1.5V						
	Load current	150mA						
	Leakage Current	<0.01mA						
	Insulation resistance	Between power terminal and housing ≥50MΩ (500VDC)						
	Pressure resistance	1000VAC (50/60Hz), 1 minute between power terminals and case						
	Vibration resistance	10~55Hz, amplitude 1.5mm, X/Y/Z axis, 2 hours each						
	Protection Circuit	Short circuit protection						
	Operating temperature	-25~+75°C						
Environmental conditions	Working environment humidity	35-85%						
	Protection level	IP67						
	Connection	2m/3-wire cable						
	Dimensions (W x H x D)	30.5x10.4x6.6mm 30.5x12.4x8mm 34.5x15.4x8.0mm 34.5x16.4x15.0mm			5.0mm			
Mechani cal data	Material	Plastic+PC						
	weight	0.05kg						
	Accessories							
Model	NPN Normally Open	DLE-N10-2.5 NO	DLE-N10-04NO	DLE-N12-04NO	DLE-N15-05NO	DLE-N15-08NO	DLE-N16-05NO	DLE-N16-08 NO
	other	NONPN	NONPN Normally Open NCNPN Normally Closed POPNP Normally Open PCPNP Normally Closed					

## Dimensions

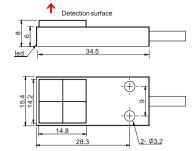
<u>6.4</u>





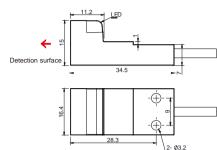


DLE-N12-04



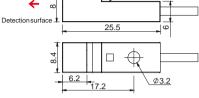
DLE-N15-05/08

DLE-N16-05/08



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DLE-N09-2.5/03



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1 Detection surface 30.5 Ø3.2 ₿ 10.1

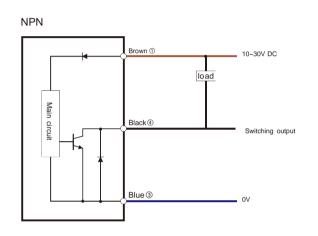
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DLE-N10-2.5/04







PNP Brown ① 10~30V DC Main Black ④ circuit Switching output load Blue 3 0٧

#### Regular maintenance inspection

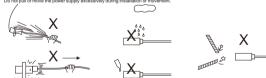
Proximity switches can maintain permanent life and stability under correct use, so regular inspection and maintenance during use is very new

sure the normaloperation of the machine. Regular inspection items are as follows: • When detecting an object, check whether the switch is within the distance, whether it is loose, whether it is tilted,

- whether the detected object has changed. Check whether the wiring or connecting wires are in normal contact or there is no concern about disconnection
- Check whether there is metal powder accumulation on the sensing surface
- Check whether the operating temperature and surrounding environment are normal
- Check the installation space for any abnormalities, such as vibration, electrical leakage, etc.

#### othera

- After power is turned on, the switch needs a lead time of 100ms. In order to achieve stable output of the switch please do not operate the switch during this period. Avoid using it outdoors (except when there is a shelter).
- Avoid direct contact with organic solvents.
- Avoid objects hitting the detection surface, as the sensing surface is very fragile
- we the power supply excessively during it



#### Precautions

- Please make sure to turn off the power before wiring.
- Please confirm that the power supply voltage varies within the rated range.
- If the power is provided by a commercial switching regulator, make sure that the frame ground terminal (FG) of the power supply is connected to ground.
- Be sure to connect the equipment ground terminal (FG) to ground.
- Do not use the device within a short period of time (0.5s) after the power is turned on.
- Do not run the wiring together with high voltage or power lines or in the same conduit as this may cause malfunction due to induction Avoid dust dirt and water va

# Product Commitment

Degson's products undergo strict factory inspection. If a fault occurs, please contact the nearest Degson office and provide detailed information so that we can solve

it as soon as possible.

#### Warranty

The product warranty period is one year, starting from the date the product is shipped to the place designated by the purchaser

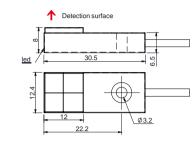
#### Warranty coverage

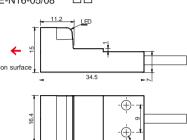
- (1) If a fault occurs during the warranty period stated above and caused by Degson, Degson will repair the product free of charge.
- However, the following situations are not covered by the warranty. · Failure caused by improper operation or improper use under the conditions or environment not specified in the operating instructions, user manual or technical
- requirements specially agreed upon between the purchaser and Degson.
- The failure is not due to a product defect but is caused by the design of the purchaser's equipment or software
- The failure is caused by modification or repair performed by someone other than Degson.
- · Failures that can be completely avoided by properly repairing or replacing wearing parts according to the operating instructions or user manual.
- Failures caused by unforeseen changes in the level of science and technology after the product is shipped from Degson.
- Failures caused by natural disasters such as fire, earthquake and flood, or external factors such as abnormal voltage are not covered by Degson
- (a) The warranty covers only the studions specified in Article (1). Degos shall not be liable for any indirect losses (damage to equipment, loss of opportunity, loss of profits, etc.) or other losses caused to the purchaser by its equipment.

#### Product Suitability

Degson's products are designed and manufactured as general-purpose products for general industries. Therefore, Degson's products must not be used for the following applications and are not suitable for their use. However, if the purchaser consults Degson in advance about the use of the product with a responsible attitude and understands the technical specifications, grades and performance of the product, and takes necessary safety measures, the product can be used. In this case, the product warranty scope is the same as above.

- Uses that may result in chemical contamination or electrical interference, or use under conditions or environments not described in the product catalog. instruction manual, etc.
- Atomic power control equipment, incineration equipment, railway, aviation, vehicle equipment, safety devices, and administrative agencies and equipment manufactured in accordance with the regulations of individual industries.
- Machinery, systems and devices that may endanger life or property.
- Gas, water, and electricity supply systems require highly reliable equipment that operates continuously 24 hours a day.





2- Ø3.2



Do not put the sensor in direct contact with water, oil, grease or organic solvents such as thinners.