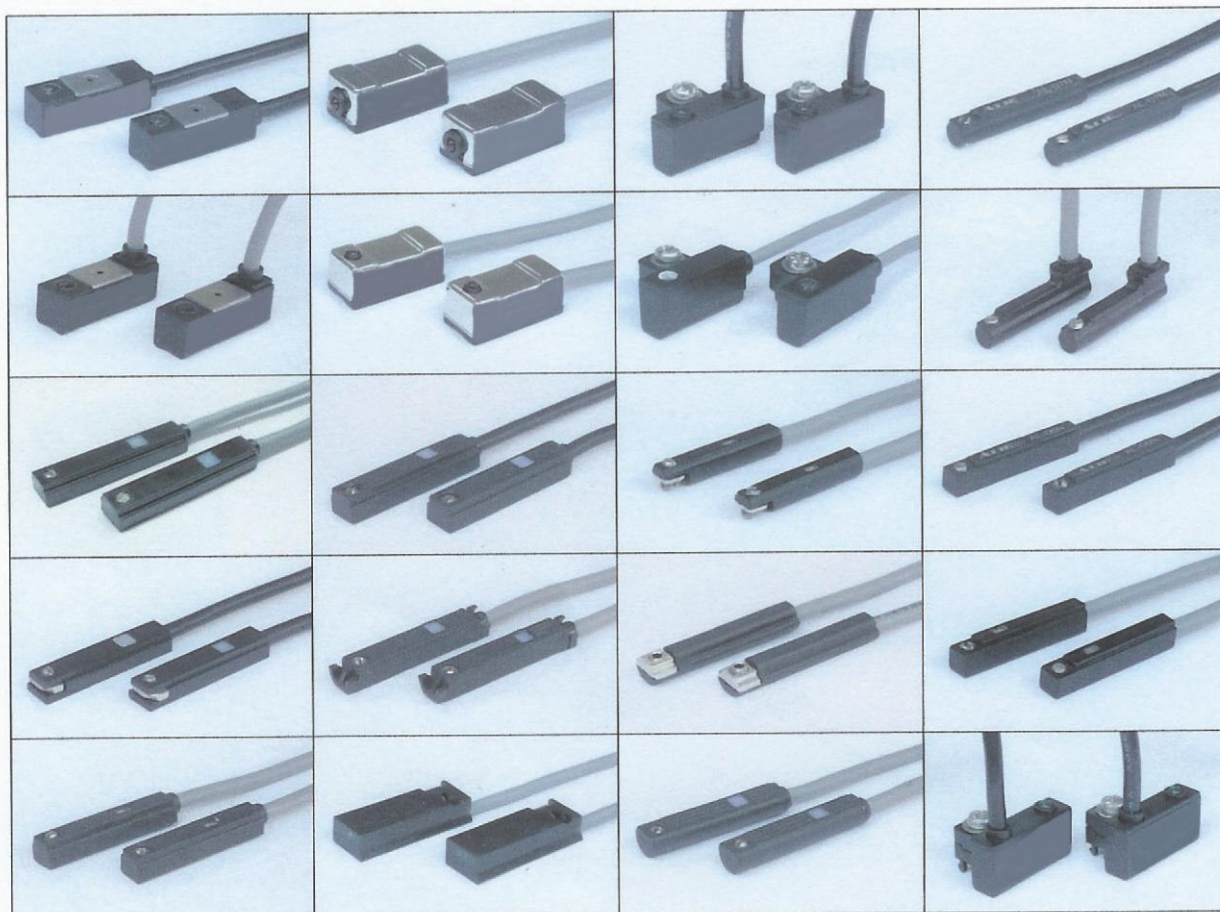


H T P

HIGH TECH PRODUCTS
S.R.L.

MAGNETIC SENSORS



H.T.P. HIGH TECH PRODUCTS S.R.L.
VIA GRAZIA DELEDDA, 20
24040 LALLIO BG - ITALY

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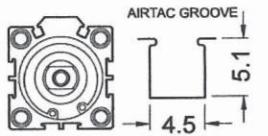
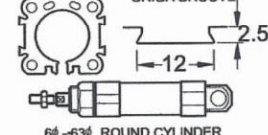
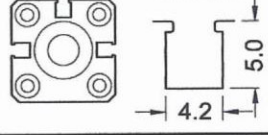
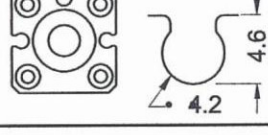
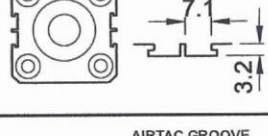
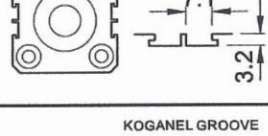
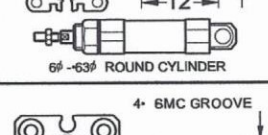
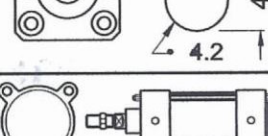
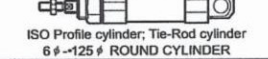
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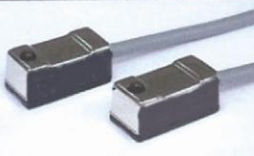
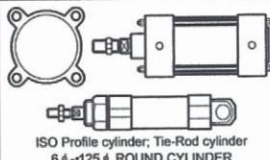
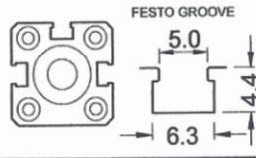
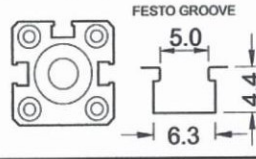
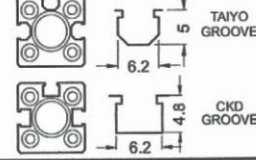
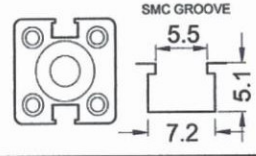
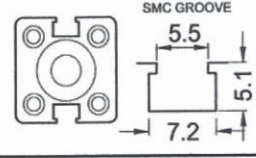
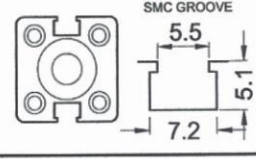
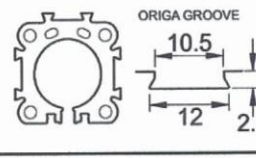
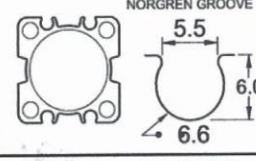
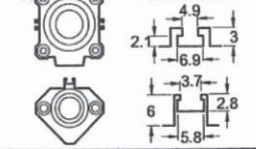
WEB SITE: WWW.WEBHTP.COM

MAGNETIC SENSORS

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MODEL	FIGURES	SENSOR TYPE	VOLTAGE	RATING	APPLICATIVE CYLINDER
HL-01R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-01N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-01P		SOLID STATE PNP / N.O.			
HL-03R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-03N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-03P		SOLID STATE PNP / N.O.			
HL-06R		REED SWITCH / N.O.	5~120V DC/AC	10W / 100mA max.	
HL-06N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-06P		SOLID STATE PNP / N.O.			
HL-07R		REED SWITCH / N.O.	5~120V DC/AC	10W / 100mA max.	
HL-07N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-07P		SOLID STATE PNP / N.O.			
HL-10R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-10N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-10P		SOLID STATE PNP / N.O.			
HL-11R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-11N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-11P		SOLID STATE PNP / N.O.			
HL-12R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-12N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-12P		SOLID STATE PNP / N.O.			
HL-15R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-15N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-15P		SOLID STATE PNP / N.O.			
HL-16R		REED SWITCH / N.O.	5~120V DC/AC	10W / 100mA max.	
HL-16N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-16P		SOLID STATE PNP / N.O.			
HL-20R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-20N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-20P		SOLID STATE PNP / N.O.			

MODEL	FIGURES	SENSOR TYPE	VOLTAGE	RATING	APPLICATIVE CYLINDER
HL-21R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-21N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-21P		SOLID STATE PNP / N.O.			
HL-30R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-30N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-30P		SOLID STATE PNP / N.O.			
HL-31R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-31N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-31P		SOLID STATE PNP / N.O.			
HL-32R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-32N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-32P		SOLID STATE PNP / N.O.			
HL-33R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-33N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-33P		SOLID STATE PNP / N.O.			
HL-34R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-34N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-34P		SOLID STATE PNP / N.O.			
HL-35R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-35N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-35P		SOLID STATE PNP / N.O.			
HL-40R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-40N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-40P		SOLID STATE PNP / N.O.			
HL-50R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-50N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-50P		SOLID STATE PNP / N.O.			
HL-72R		REED SWITCH / N.O.	5~240V DC/AC	10W / 100mA max.	
HL-72N		SOLID STATE NPN / N.O.	5 ~ 28V DC	6W max. 200mA max.	
HL-72P		SOLID STATE PNP / N.O.			

⇒ 2 wire reed switch type connection ⇐

General connection	Series connection (And)	Parallel connection (OR)
1. When connecting 2 wire switches, load must be connected in series with the sensor to prevent damage. 2. Connect the brown wire in series load with positive(+) and the blue wire to negative(-) of DC power source, otherwise the LED will not light.	1. When 2 wire switches in series(AND) use. The voltage drop will be added up. (Typical Vdrop about 2.5V per switch) 2. When series too many switches, excessive voltage drop will cause non-operation of the load. 3. The quantity of switches in series due to the voltage of power source.	1. When 2 wire switches in parallel(OR) use. The current flow to the switch will be shared when switches all in active. 2. When connect too many switches in parallel use, possible concurrent operation will cause dim or off LED due to lower current distribution. 3. The quantity of switches in parallel due to the current of load.

⇒ 3 wire solid state NPN type connection ⇐

General connection	Series connection (And)	Parallel connection (OR)
1. When connecting 3 wire switches, it must connect to DC power source. Pay attention to the wiring of black wire. Wrong connect will damage the switch. 2. Connect brown wire to the positive(+) and the blue to the negative(-). The black wire must series load and to positive(+) only.	1. When 3 wire solid state switches in series (AND) use. Voltage drop will be added up. (Typical Vdrop about 1.5V per switch) 2. When series too many switches, excessive voltage drop will cause non-operation of the load. 3. The quantity of switches in series due to the voltage of power source.	1. When 3-wire solid state switches in parallel(OR) use. Leakage current will be added up. 2. When parallel too many switches in use, possibly cause wrong operation due to lower load current. 3. The quantity of switches in parallel due to the current of load.

⇒ 3 wire solid state PNP type connection ⇐

General connection	Series connection (And)	Parallel connection (OR)
1. When connecting 3 wire switches, it must connect to DC power source. Pay attention to the wiring of black wire. Wrong connect will damage the switch. 2. Connect brown wire to the positive(+) and the blue to the negative(-). The black wire must series load and to negative(-) only.	1. When 3 wire solid state switches in series (AND) use. Voltage drop will be added up. (Typical Vdrop about 1.5V per switch) 2. When series too many switches, excessive voltage drop will cause non-operation of the load. 3. The quantity of switches in series due to the voltage of power source.	1. When 3-wire solid state switches in parallel(OR) use. Leakage current will be added up. 2. When parallel too many switches in use, possibly cause wrong operation due to lower load current. 3. The quantity of switches in parallel due to the current of load.

	Cylinder(groove)Form	Applicable sensor series	Applicable mounting bracket
AIRTAC GROOVE		HL -10 Series HL -11 Series	GROOVE TYPE, NO BRACKET
AIRTAC GROOVE		HL -01 Series	GROOVE TYPE, NO BRACKET
ORIGA GROOVE		HL -03 Series HL -15 Series HL -40 Series	PC BRACKET GROOVE TYPE, NO BRACKET
TAIYO GROOVE		HL -32 Series	GROOVE TYPE, NO BRACKET
ISO PROFILE		HL -20 Series HL -21 Series	PI BRACKET
KOGANEL GROOVE MINDMAN GROOVE		HL -12 Series	GROOVE TYPE, NO BRACKET
ROUND CYLINDER		HL -03,15 Series HL -20,21 Series HL -30 Series HL -33 Series	PBK & PBO CLAMP PAB CLAMP PBT CLAMP PBS CLAMP
4*4 QUADRATE GROOVE		HL -06 Series	GROOVE TYPE, NO BRACKET
FESTO GROOVE		HL -30 Series HL -31 Series	GROOVE TYPE, NO BRACKET
NORGREN GROOVE		HL -50 Series	GROOVE TYPE, NO BRACKET
SMC GROOVE		HL -33 Series HL -34 Series HL -35 Series	GROOVE TYPE, NO BRACKET GROOVE TYPE, NO BRACKET GROOVE TYPE, NO BRACKET
SMC GROOVE		HL -72 Series	GROOVE TYPE, NO BRACKET
SMC GROOVE		HL -72 Series	GROOVE TYPE, NO BRACKET
ROD CYLINDER		HL -20 Series HL -21 Series	PAC CLAMP PM CLAMP PAB CLAMP
CKD GROOVE		HL -32 Series	GROOVE TYPE, NO BRACKET
SMC GROOVE BIMBA GROOVE		HL -07 Series HL -16 Series	GROOVE TYPE, NO BRACKET

HL - 20 R H - 02

Special Type Order is Available

Cable Length

- None : The length of cable is 1 M (Standard length)
- 02 : The length of cable is 2 M
- ...
- 05 : The length of cable is 5 M
- QC8 : M8*3 male quick connector (Cable length is 0.15 M)
- QC12 : M12*4 male quick connector (Cable length is 0.15 M)

Special Mark

- None : Standard type
- A : 300mA current output
- B : Normally close type (N.C.)
- F : Solid state type, FET large current output
- H : High sensitivity
- L : Low sensitivity
- X : No indicator (Large current output)
- R : Reed switch 2 wire type
- N : Solid state type, Current sinking
- P : Solid state type, Current sourcing
- RD : Reed switch 3 wire type (current sinking & sourcing)

Sensor Type

Sensor Model

- 01
- 03
- ...
- 72

GENERAL TECHNICAL INFORMATION

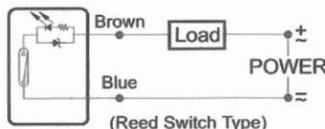


Particular attention must be paid not to exceed the limits list in the specification. Otherwise, permanent damage to sensor may occur.

- For reed switch type sensors, they must be connected to a load to use, or it will damage the sensors.
- Connect the brown wire in series with LOAD to positive(+) and the blue wire to negative(-) of power source.

If the polarity be inverted, reed switch remains functional but LED will remain in "OFF" state. Just exchange the brown and blue wires.

2 wire standard connection



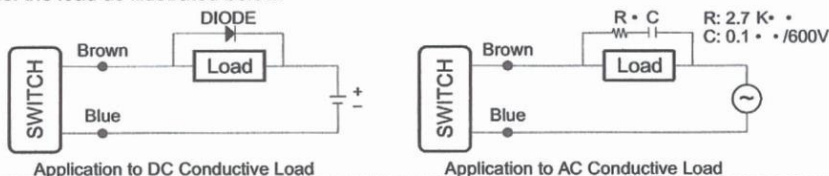
- For solid-state type sensors, it must be used with DC power source.
- Connect brown wire to positive(+) and the blue wire to negative(-) of DC power source. The black wire must be connected to the LOAD only.
- If the black wire is connected to the power source directly, permanent damage to the sensor may occur.

3 wire standard connection



- The external protect element is required. If the sensor is used to switch conductive load, such as relay or solenoid valve.
- For DC conductive load, attach an external diode parallel to the load as illustrated below.
- For AC conductive load, use R-C circuit to parallel the load as illustrated below.

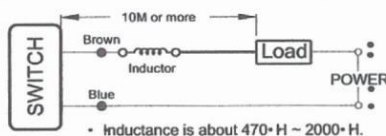
Inductive load protection



If the sensor is used to switch capacitive load or the cable length exceed 10M.

Please series a inductor(470 μ H ~ 2000 μ H) as close to the sensor to prevent damage (sticking effect).

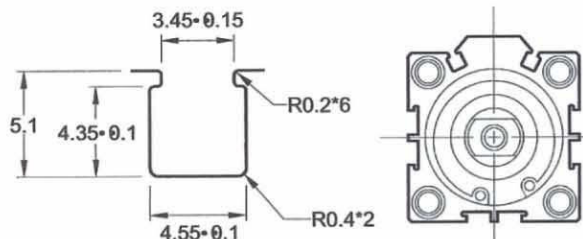
Capacitive load protection



- 5. Keep sensor out of the strong magnetic field to get rid of interference. •



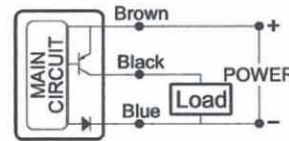
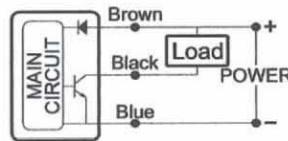
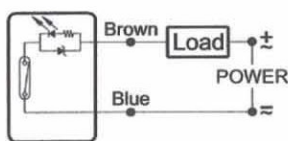
GROOVE DIMENSION (AirTAC)



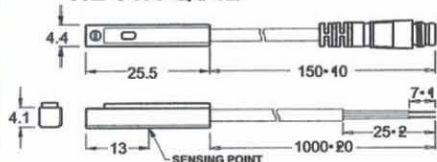
SPECIFICATION

TYPE CHARACTERISTIC	HL - 01R	HL - 01N	HL - 01P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8* ; 2C, OIL RESISTANT PVC	2.8* ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	60 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 °		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

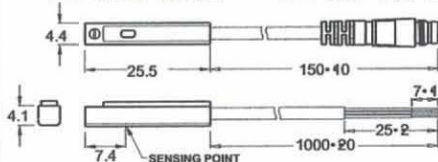
Connect Diagram



HL-01R
HL-01R-QC8
HL-01R-QC12



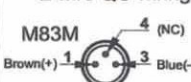
HL-01N
HL-01N-QC8
HL-01N-QC12



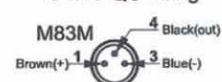
HL-01P
HL-01P-QC8
HL-01P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-01R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

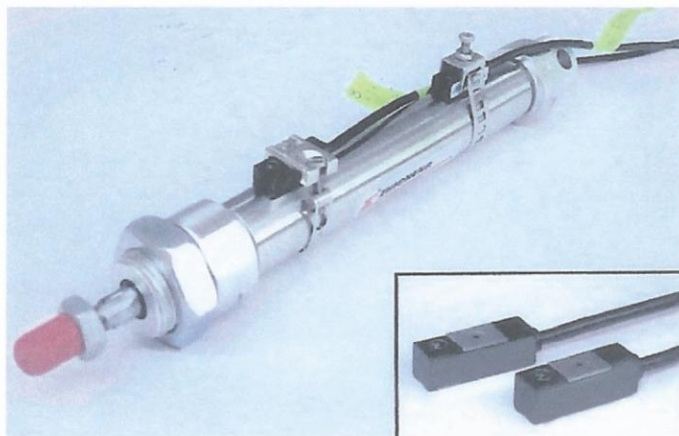
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X * Y * Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X * Y * Z

3 Directions / 1Hour Each Time.





MOUNTING CLAMP & BRACKET

PBK CLAMP

PBO CLAMP

PC BRACKET

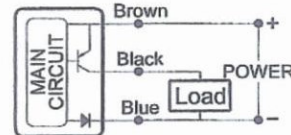
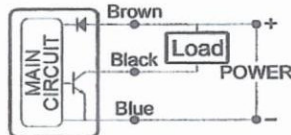
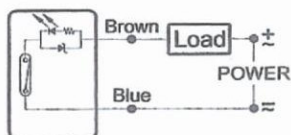


Apply to: 6" to 63" round cylinder

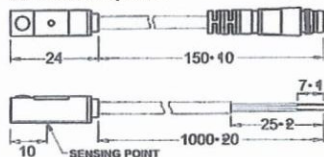
SPECIFICATION

CHARACTERISTIC	TYPE	HL-03R	HL-03N	HL-03P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~240V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 40mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8" ± 2C, OIL RESISTANT PVC	2.8" ± 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		—	60 G	
MAX. SWITCHING FREQUENCY		200 Hz	1000 Hz	
TEMPERATURE RANGE		—	-10 ~ 70 °C	
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		—	9 G	
ENCLOSURE CLASSIFICATION		—	IP 67 (NEMA 6)	
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127433		

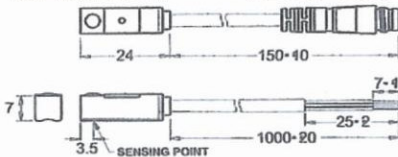
Connect Diagram



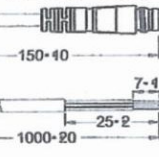
HL-03R
HL-03R0QC8
HL-03R-QC12



HL-03N
HL-03N-QC8
HL-03N-QC12

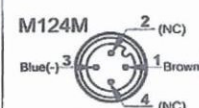
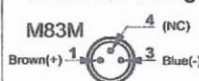


HL-03P
HL-03P-QC8
HL-03P-QC12

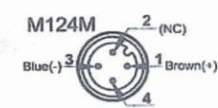


M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



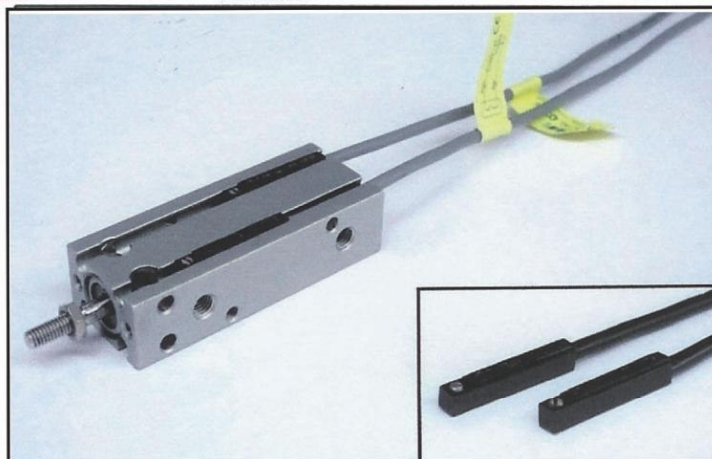
NOTE: 1. The max. operating voltage of HL-03R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).

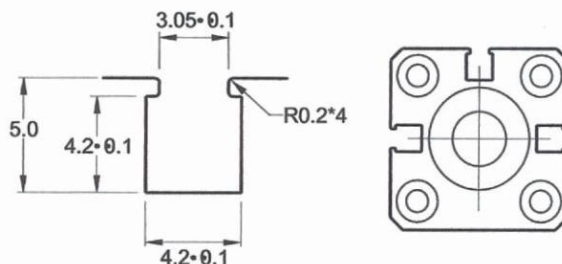
3. Sin Wave / X * -Y * -Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X * -Y * -Z 3 Directions / 1Hour Each Time.





GROOVE DIMENSION (• 4x4)

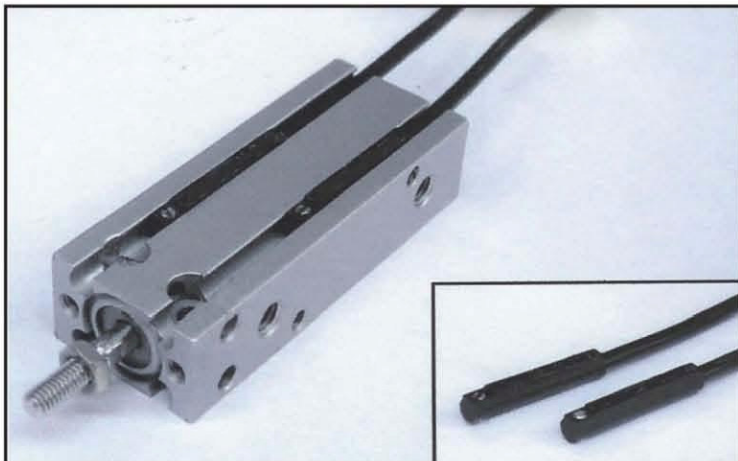


SPECIFICATION

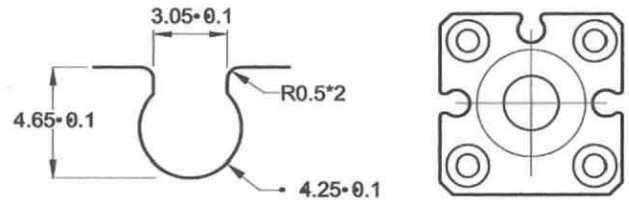
CHARACTERISTIC	TYPE	HL - 06R	HL - 06N	HL - 06P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~120V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 40mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8* ; 2C, OIL RESISTANT PVC	2.8* ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		60 G	40 G	
MAX. SWITCHING FREQUENCY		1000 Hz		
TEMPERATURE RANGE		-10 ~ 70 • •		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127432		
Connect Diagram				
HL-06R HL-06R-QC8 HL-06R-QC12 		HL-06N HL-06N-QC8 HL-06N-QC12 		HL-06P HL-06P-QC8 HL-06P-QC12
M8 & M12 QUICK CONNECTOR (IEC61076-2-101) 2 wire QC wiring M83M: 1 Brown(+), 3 Blue(-), 4 (NC) M124M: 1 Brown(+), 3 Blue(-), 2 (NC), 4 (NC) 3 wire QC wiring M83M: 1 Brown(+), 3 Blue(-), 4 Black(out) M124M: 1 Brown(+), 3 Blue(-), 2 (NC), 4 (NC)				

NOTE: 1. The max. operating voltage of HL-06R-QC8 60V AC/DC (Based on IEC61076-2-101).
 2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).
 3. Sin Wave / X • •Y • •Z 3 Directions / 3 Times Each Direction / 11mS Each Time.
 4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • •Y • •Z 3 Directions / 1Hour Each Time.





GROOVE DIMENSION (4• SMC)



SPECIFICATION

CHARACTERISTIC	TYPE	HL - 07R	HL - 07N	HL - 07P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~120V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 40mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8ϕ ; 2C, OIL RESISTANT PVC	2.8ϕ ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		60 G	40 G	
MAX. SWITCHING FREQUENCY		1000 Hz		
TEMPERATURE RANGE		-10 ~ 70 °C		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.		No. E8 04 07 53334 001	No. E8 04 07 53334 003	No. E8 04 07 53334 002
3C Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
Connect Diagram				
HL-07R HL-07R-QC8 HL-07R-QC12		HL-07R HL-07R-QC8 HL-07R-QC12		M8 & M12 QUICK CONNECTOR (IEC61076-2-101) 2 wire QC wiring M83M Brown(+) 1, 4 (NC) 2, 3 Blue(-) M124M Blue(-) 3, 4 (NC) 2, 1 Brown(+)
				3 wire QC wiring M83M Brown(+) 1, 4 Black(out) 2, 3 Blue(-) M124M Blue(-) 3, 4 Black(out) 2, 1 Brown(+)

NOTE: 1. The max. operating voltage of HL-07R-QD8 is 60V AC/DC (Based on IEC61076-2-101).

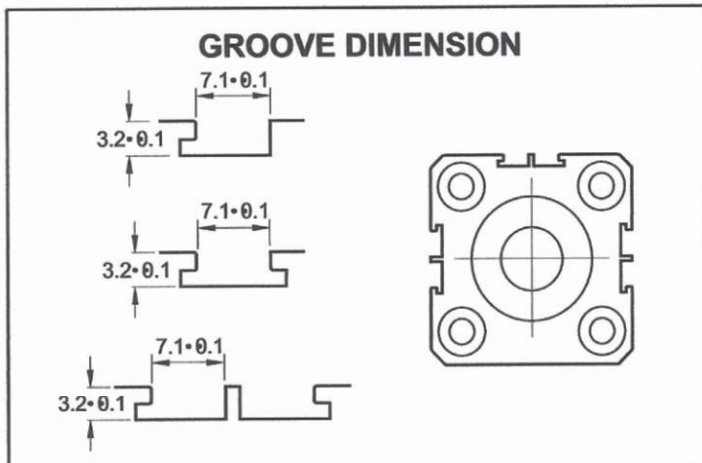
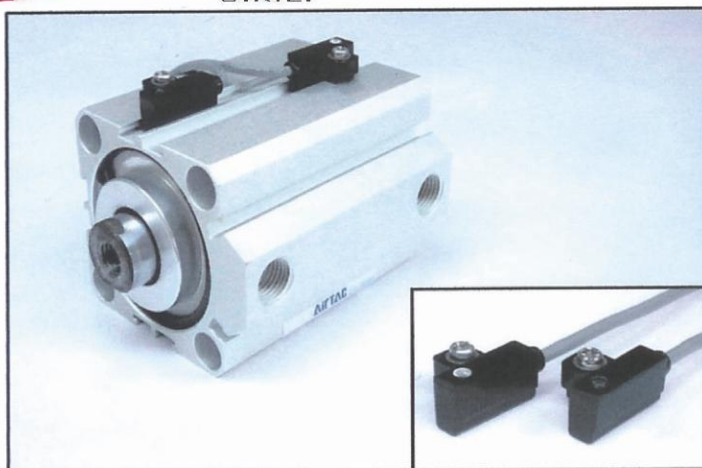
2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).

3. Sin Wave / X • •Y • •Z 3 Directions / 10 times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz (Sweep 1min) / X • •Y • •Z 3 Directions / 1Hour Each Time.

5. All trademarks used in this catalog are the property of their respective owners.

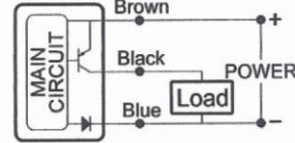
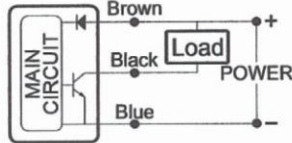
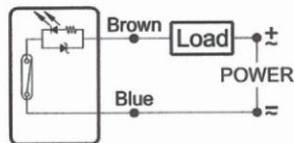




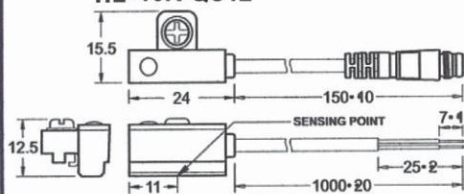
SPECIFICATION

TYPE CHARACTERISTIC	HL - 10R	HL - 10N	HL - 10P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	3.3• ; 2C, OIL RESISTANT PVC	3.3• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

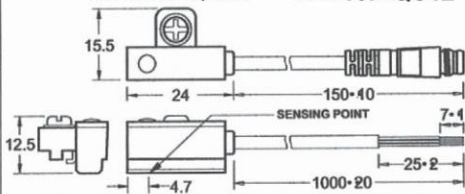
Connect Diagram



HL-10R
HL-10R-QC8
HL-10R-QC12



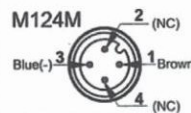
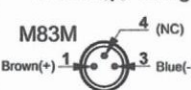
HL-10N
HL-10N-QC8
HL-10N-QC12



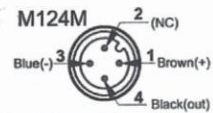
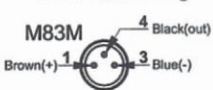
HL-10P
HL-10P-QC8
HL-10P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



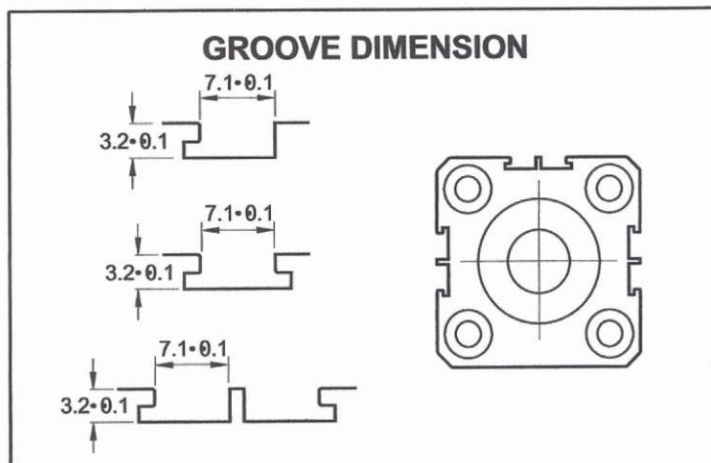
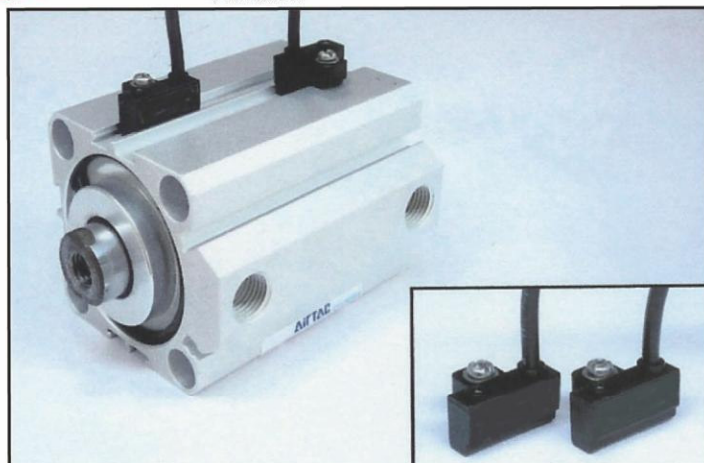
NOTE: 1. The max. operating voltage of HL-10R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • •Y • •Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • •Y • •Z 3 Directions / 1Hour Each Time.

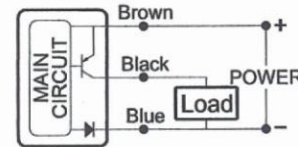
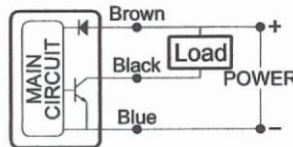
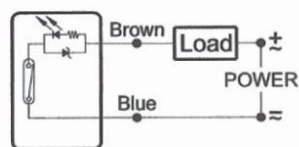




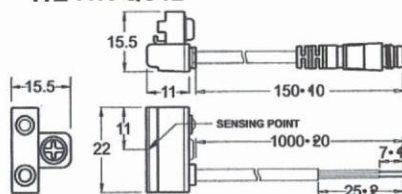
SPECIFICATION

CHARACTERISTIC	TYPE	HL - 11R	HL - 11N	HL - 11P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~240V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		3.3• ; 2C, OIL RESISTANT PVC	3.3• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		40 G		
MAX. SWITCHING FREQUENCY		200 Hz	1000 Hz	
TEMPERATURE RANGE		-10 ~ 70 • •		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127433		

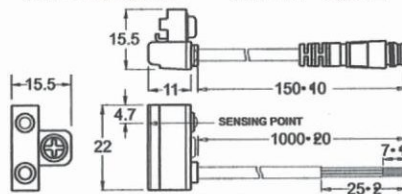
Connect Diagram



HL-11R
HL-11R-QC8
HL-11R-QC12

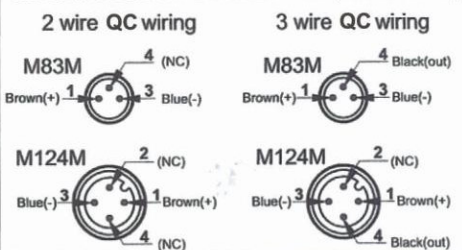


HL-11N
HL-11N-QC8
HL-11N-QC12



HL-11P
HL-11P-QC8
HL-11P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)



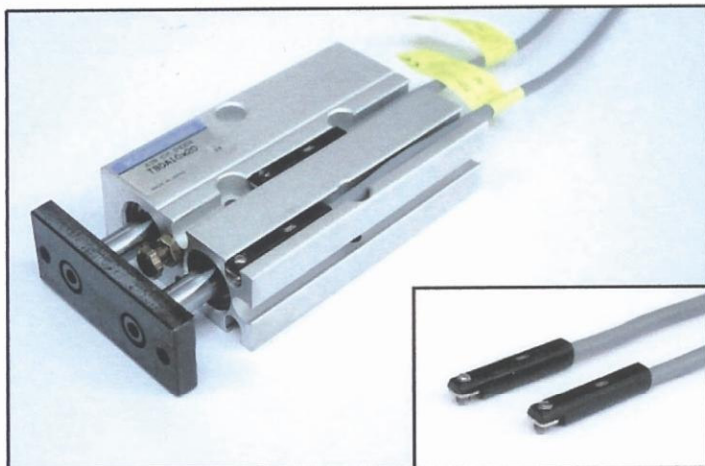
NOTE: 1. The max. operating voltage of HL-11R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).

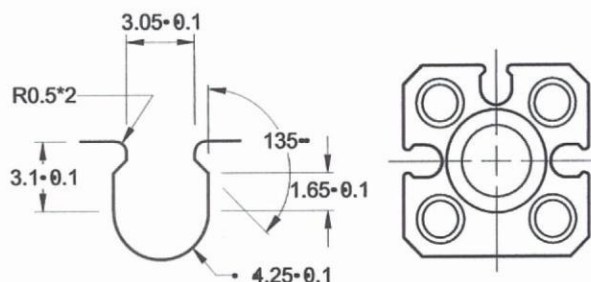
3. Sin Wave / X • -Y • -Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz (Sweep 1min) / X • -Y • -Z 3 Directions / 1Hour Each Time.





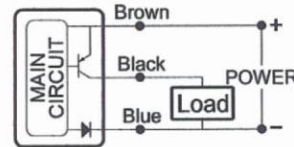
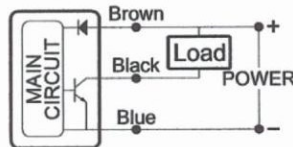
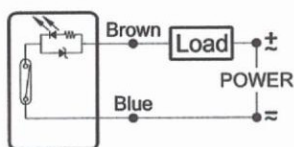
GROOVE DIMENSION·
(KOGANEI ; MINDMAN)



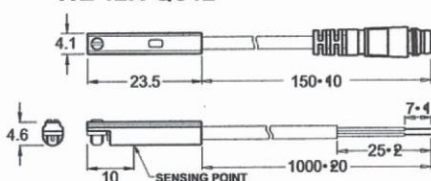
SPECIFICATION

TYPE CHARACTERISTIC	HL - 12R	HL - 12N	HL - 12P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~120V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8* ; 2C, OIL RESISTANT PVC	2.8* ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	1000 Hz		
TEMPERATURE RANGE	-10 ~ 70 °		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

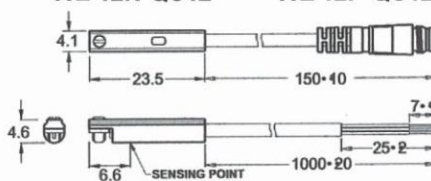
Connect Diagram



HL-12R
HL-12R-QC8
HL-12R-QC12

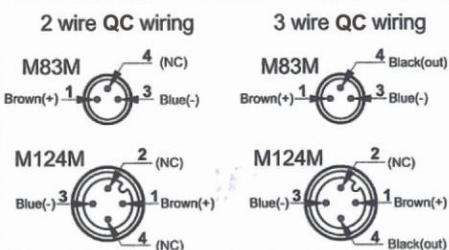


HL-12N
HL-12N-QC8
HL-12N-QC12



HL-12P
HL-12P-QC8
HL-12P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)



- NOTE: 1. The max. operating voltage of HL-12R-QC8 is 60V AC/DC (Based on IEC61076-2-101).
 2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).
 3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.
 4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • Y • Z 3 Directions / 1Hour Each Time.





MOUNTING CLAMP & BRACKET

PBK CLAMP

PBO CLAMP

PC BRACKET

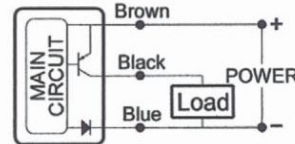
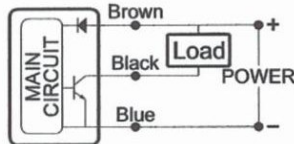
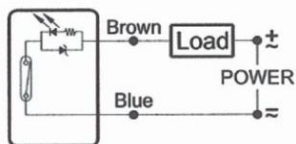


Apply to: 6" to 63" round cylinder

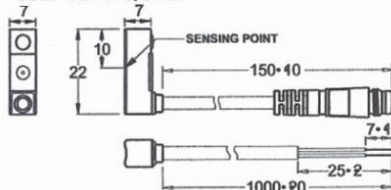
SPECIFICATION

TYPE CHARACTERISTIC	HL - 15R	HL - 15N	HL - 15P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 40mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	60 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

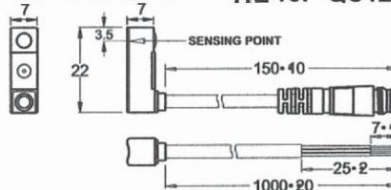
Connect Diagram



HL-15R
HL-15R-QC8
HL-15R-QC12



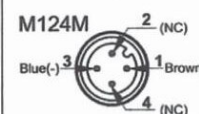
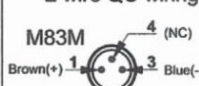
HL-15N
HL-15N-QC8
HL-15N-QC12



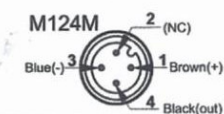
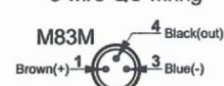
HL-15P
HL-15P-QC8
HL-15P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-15R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

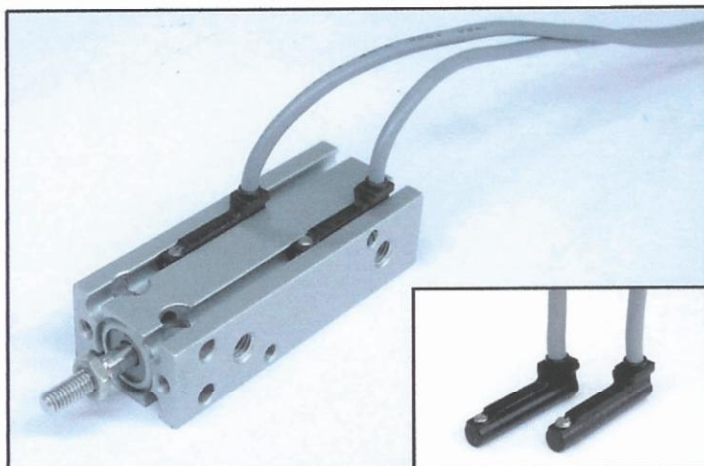
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • • Y • • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

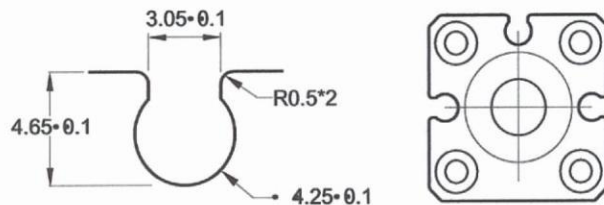
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • • Y • • Z

3 Directions / 1Hour Each Time.





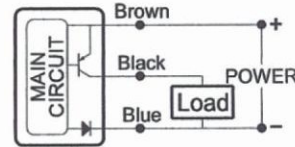
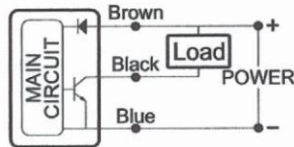
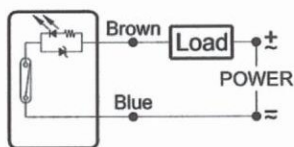
GROOVE DIMENSION (4- SMC)



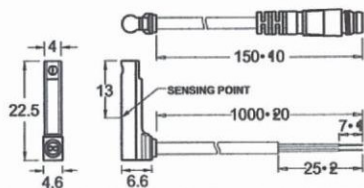
SPECIFICATION

TYPE CHARACTERISTIC	HL - 16R	HL - 16N	HL - 16P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~120V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 40mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ϕ 2C, OIL RESISTANT PVC	2.8• ϕ 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	60G	40G	
MAX. SWITCHING FREQUENCY	1000 Hz		
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127432		

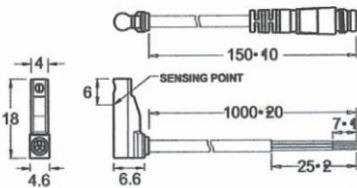
Connect Diagram



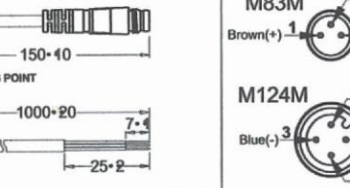
HL-16R
HL-16R-QC8
HL-16R-QC12



HL-16N
HL-16N-QC8
HL-16N-QC12

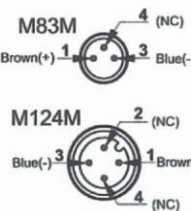


HL-16P
HL-16P-QC8
HL-16P-QC12

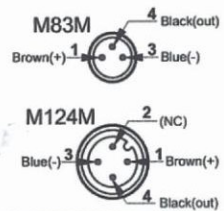


M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



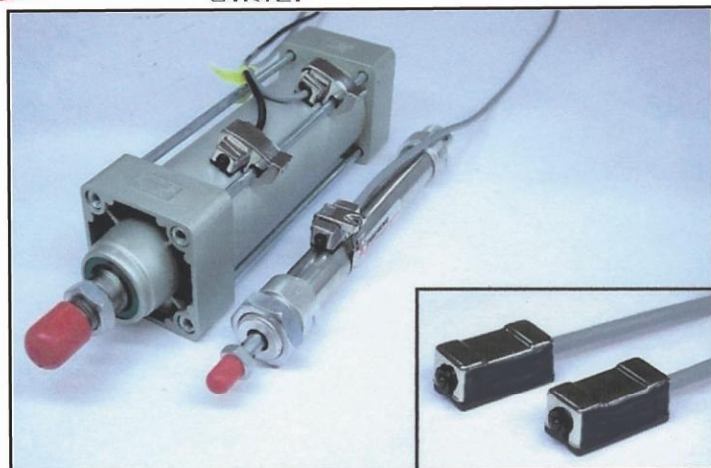
NOTE: 1. The max. operating voltage of HL-16R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • Y • Z 3 Directions / 1Hour Each Time.





PAB CLAMP



PAC BRACKET



PM BRACKET



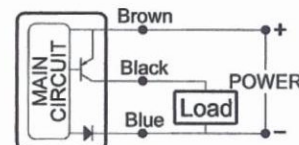
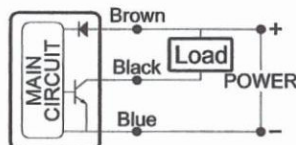
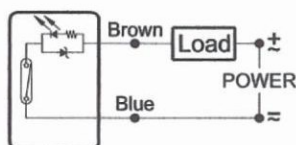
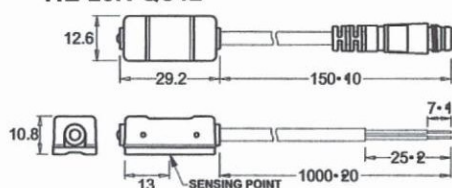
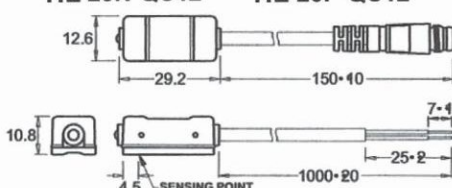
PI BRACKET



SPECIFICATION

TYPE CHARACTERISTIC	HL - 20R	HL - 20N	HL - 20P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	15 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	4.0• ; 2C, OIL RESISTANT PVC	4.0• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	60 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

Connect Diagram

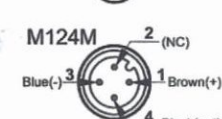
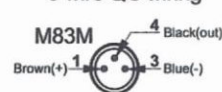

HL-20R
HL-20R-QC8
HL-20R-QC12

HL-20N
HL-20N-QC8
HL-20N-QC12

HL-20P
HL-20P-QC8
HL-20P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-20R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

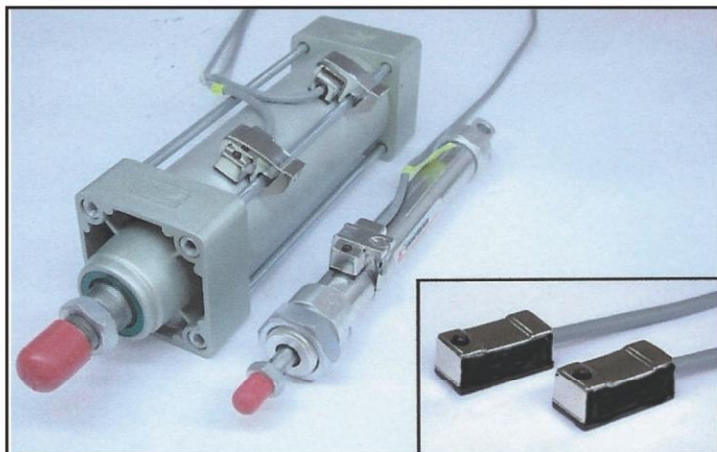
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • •Y • •Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • •Y • •Z

3 Directions / 1Hour Each Time.





PAB CLAMP



PAC BRACKET



PM BRACKET



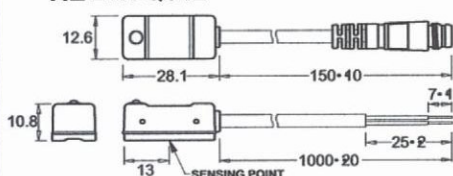
PI BRACKET



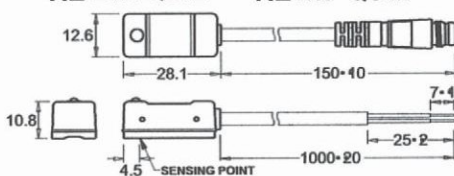
SPECIFICATION

TYPE	HL - 21R	HL - 21N	HL - 21P
CHARACTERISTIC			
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	15 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	4.0• ± 2C, OIL RESISTANT PVC	4.0• ± 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	60 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		
Connect Diagram			

HL-21R
HL-21R-QC8
HL-21R-QC12



HL-21N
HL-21N-QC8
HL-21N-QC12



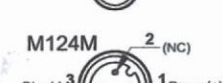
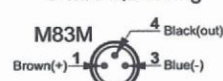
HL-21P
HL-21P-QC8
HL-21P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-21R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

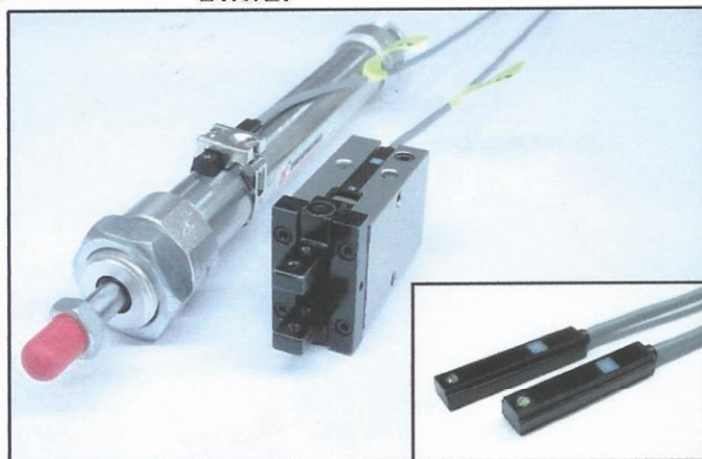
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • •Y • •Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

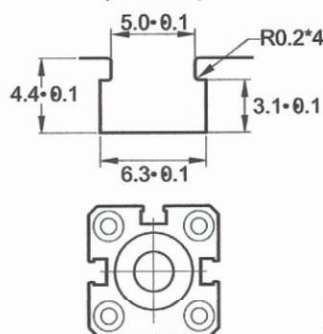
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • •Y • •Z

3 Directions / 1Hour Each Time.





GROOVE DIMENSION (FESTO)



PBT CLAMP

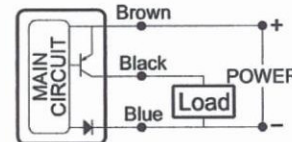
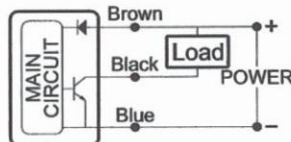
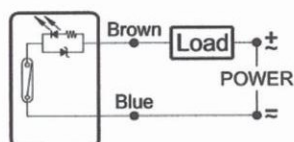


Apply to 6• to 63• Round Cylinder

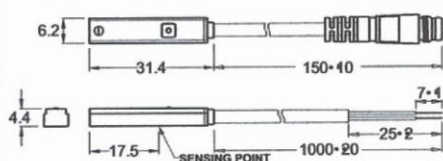
SPECIFICATION

TYPE CHARACTERISTIC	HL - 30R	HL - 30N	HL - 30P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ρ 2C, OIL RESISTANT PVC	2.8• ρ 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

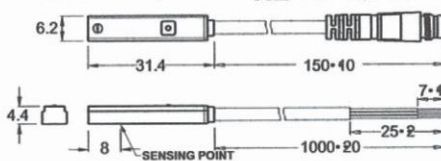
Connect Diagram



HL-30R HL-30R-QC8 HL-30R-QC12



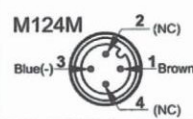
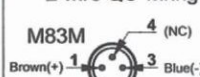
HL-30N HL-30N-QC8 HL-30N-QC12



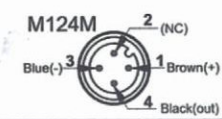
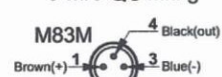
HL-30P HL-30P-QC8 HL-30P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-30R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

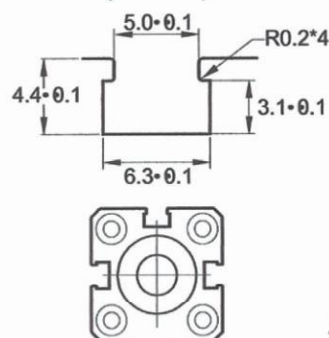
3. Sin Wave / X • •Y • •Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • •Y • •Z 3 Directions / 1Hour Each Time.





GROOVE DIMENSION (FESTO)



PBT CLAMP

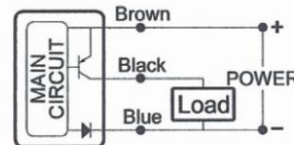
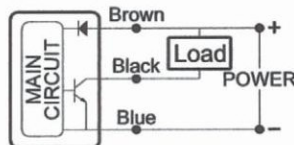
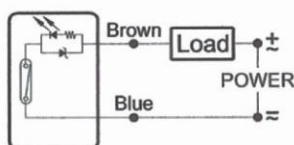


Apply to 6" to 63" Round Cylinder

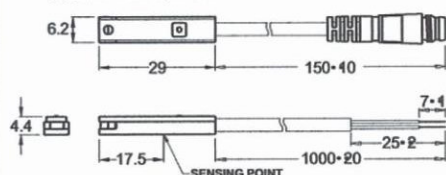
SPECIFICATION

CHARACTERISTIC	TYPE	HL - 31R	HL - 31N	HL - 31P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~240V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		40 G		
MAX. SWITCHING FREQUENCY		200 Hz	1000 Hz	
TEMPERATURE RANGE		-10 ~ 70 • •		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127433		

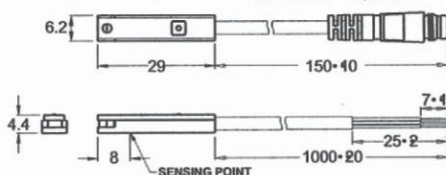
Connect Diagram



HL-31R
HL-31R-QC8
HL-31R-QC12



HL-31N
HL-31N-QC8
HL-31N-QC12



HL-31P
HL-31P-QC8
HL-31P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring

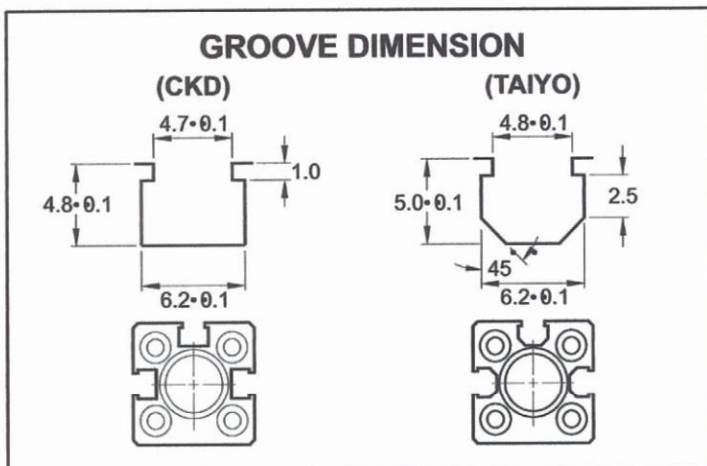
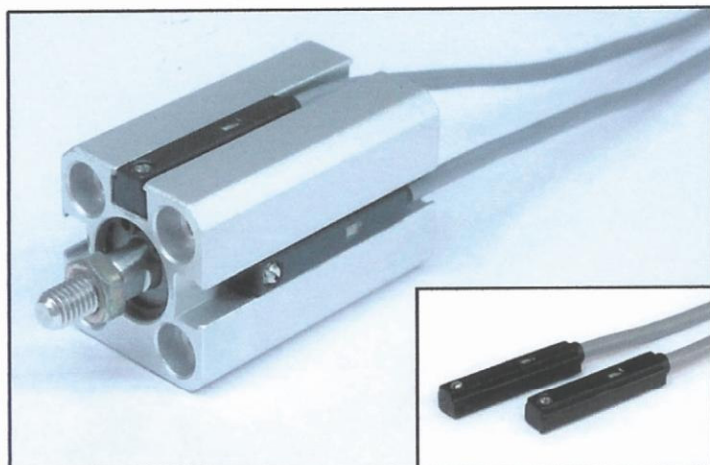


3 wire QC wiring



- NOTE: 1. The max. operating voltage of HL-31R-QC8 is 60V AC/DC (Based on IEC61076-2-101).
 2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).
 3. Sin Wave / X * Y * Z 3 Directions / 3 Times Each Direction / 11mS Each Time.
 4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X * Y * Z 3 Directions / 1Hour Each Time.

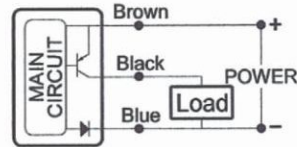
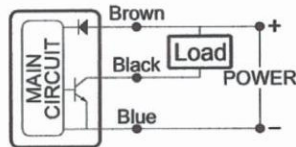
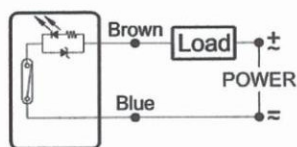




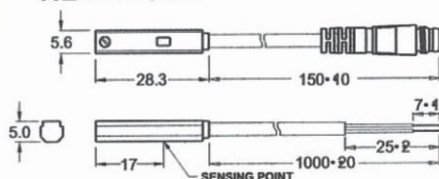
SPECIFICATION

TYPE CHARACTERISTIC	HL - 32R	HL - 32N	HL - 32P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

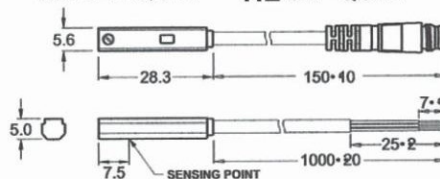
Connect Diagram



HL-32R
HL-32R-QC8
HL-32R-QC12

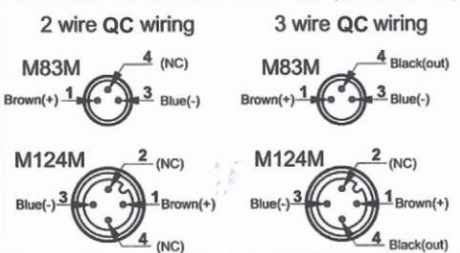


HL-32N
HL-32N-QC8
HL-32N-QC12



HL-32P
HL-32P-QC8
HL-32P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)



NOTE: 1. The max. operating voltage of HL-32R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

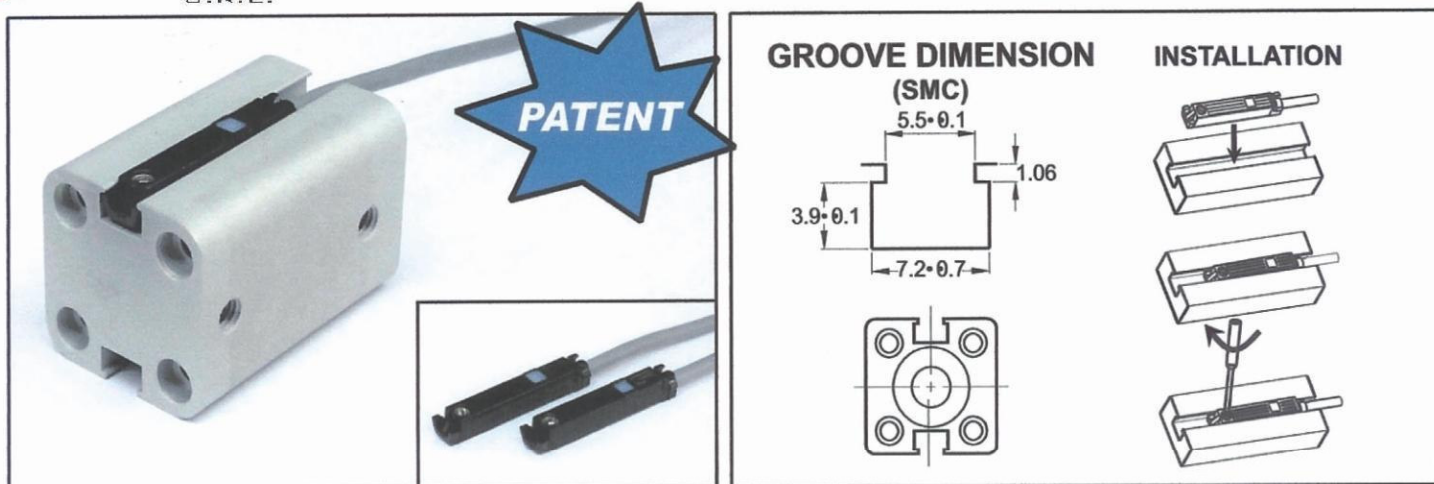
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X * Y * Z 3 Directions / 3 Times Each Direction / 11ms Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X * Y * Z

3 Directions / 1Hour Each Time.

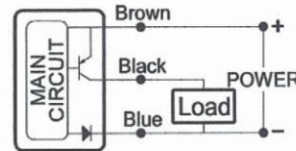
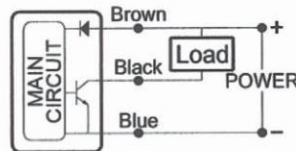
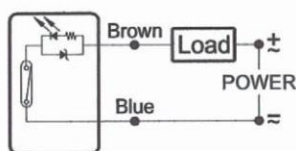




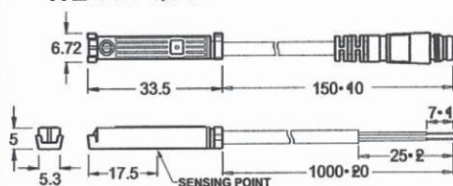
SPECIFICATION

CHARACTERISTIC	TYPE	HL - 34R	HL - 34N	HL - 34P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~240V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		40 G		
MAX. SWITCHING FREQUENCY		200 Hz	1000 Hz	
TEMPERATURE RANGE		-10 ~ 70 • •		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127433		

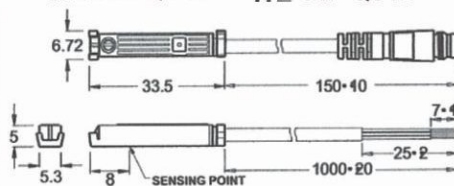
Connect Diagram



HL-34R
HL-34R-QC8
HL-34R-QC12

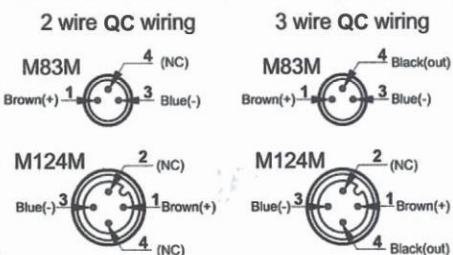


HL-34N
HL-34N-QC8
HL-34N-QC12



HL-34P
HL-34P-QC8
HL-34P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)



NOTE: 1. The max. operating voltage of HL-34R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

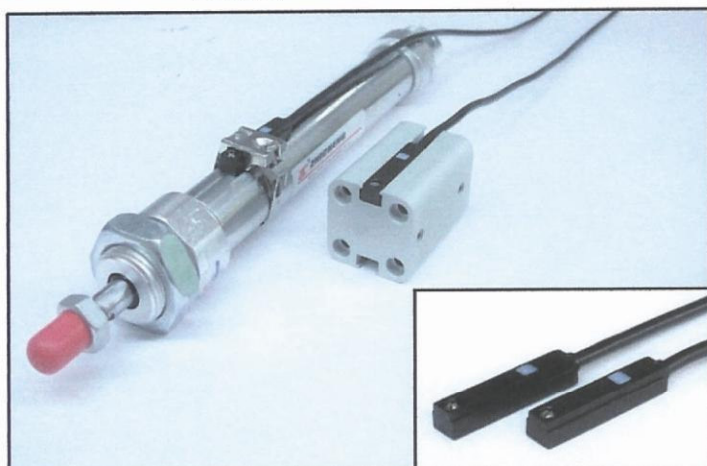
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

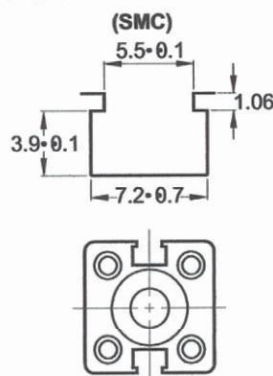
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • Y • Z

3 Directions / 1Hour Each Time.





GROOVE DIMENSION



PBS CLAMP

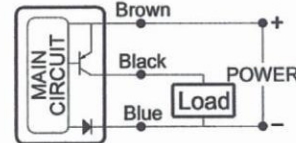
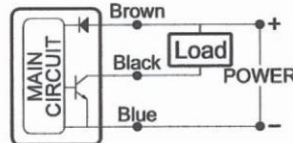
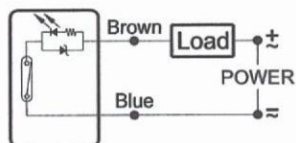


Apply to 6" to 63" Round Cylinder

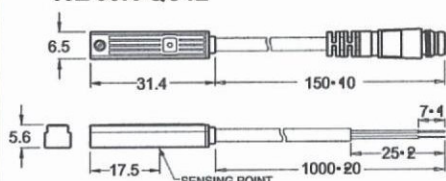
SPECIFICATION

CHARACTERISTIC	TYPE	HL - 33R	HL - 33N	HL - 33P
SWITCHING LOGIC		SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE		Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)		5~240V DC/AC	5~28V DC	
SWITCHING CURRENT		100 mA max.	200 mA max.	
SWITCHING RATING		10 W max.	6 W max.	
CURRENT CONSUMPTION		—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP		2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT		—	0.01 mA max.	
INDICATOR		Red LED	Red LED	Green LED
CABLE		2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)		40 G		
MAX. SWITCHING FREQUENCY		200 Hz	1000 Hz	
TEMPERATURE RANGE		-10 ~ 70 • •		
SHOCK (NOTE 3.)		30 G	50 G	
VIBRATION (NOTE 4.)		9 G		
ENCLOSURE CLASSIFICATION		IP 67 (NEMA 6)		
PROTECTION CIRCUIT		—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.		No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.		No. : 2004010305127433		

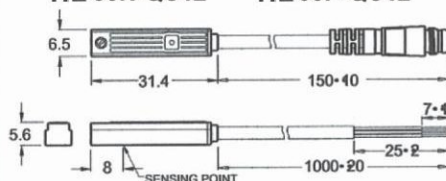
Connect Diagram



HL-33R
HL-33R-QC8
HL-33R-QC12



HL-33N
HL-33N-QC8
HL-33N-QC12



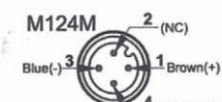
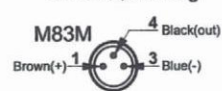
HL-33P
HL-33P-QC8
HL-33P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



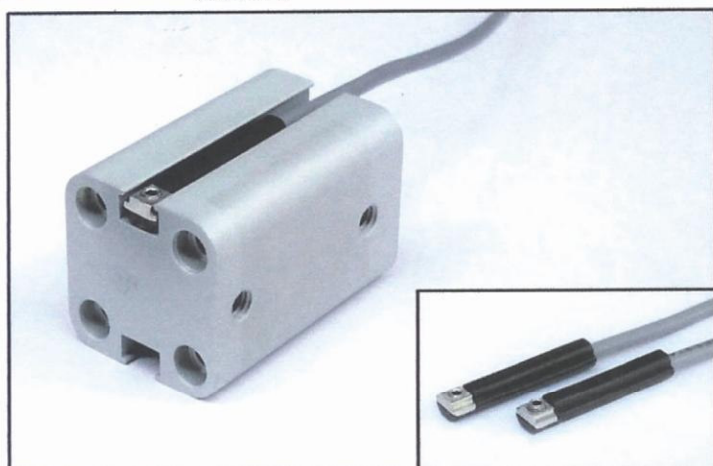
NOTE: 1. The max. operating voltage of HL-33R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).

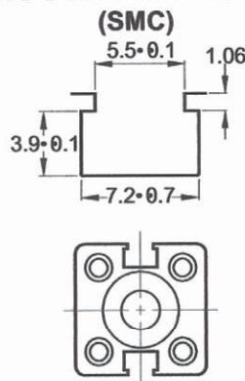
3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz (Sweep 1min) / X • Y • Z 3 Directions / 1Hour Each Time.

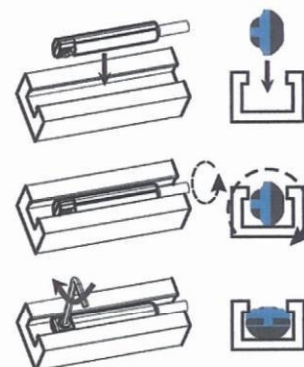




GROOVE DIMENSION



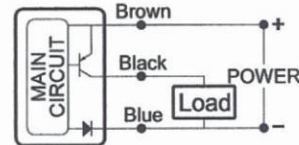
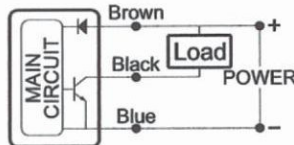
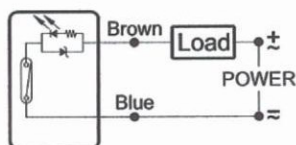
INSTALLATION



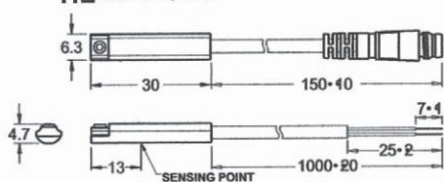
SPECIFICATION

TYPE	HL - 35R	HL - 35N	HL - 35P
CHARACTERISTIC			
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

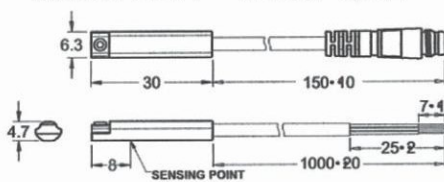
Connect Diagram



HL-35R
HL-35R-QC8
HL-35R-QC12



HL-35N
HL-35N-QC8
HL-35N-QC12



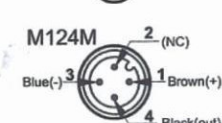
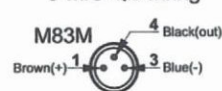
HL-35P
HL-35P-QC8
HL-35P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-35R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

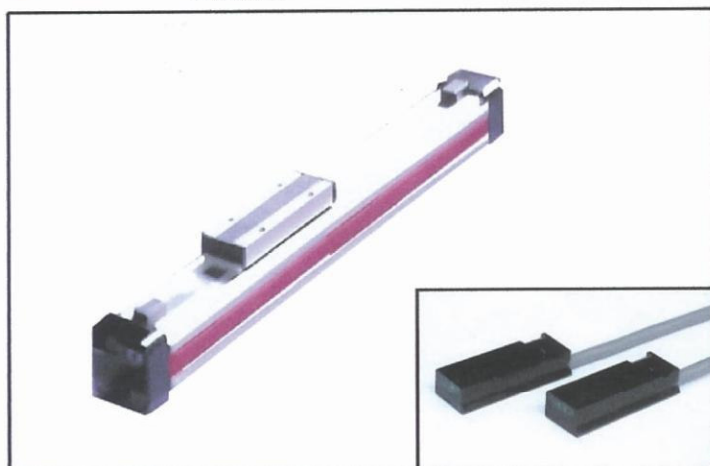
2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • • Y • • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

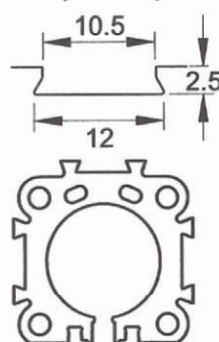
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • • Y • • Z

3 Directions / 1Hour Each Time.

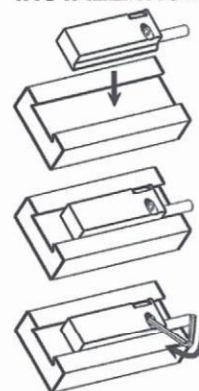




GROOVE DIMENSION (ORIGA)



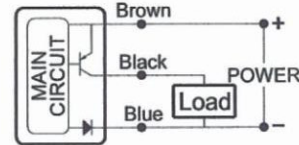
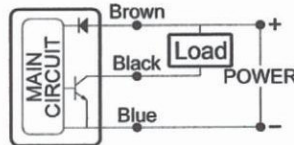
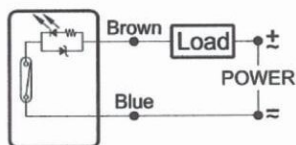
INSTALLATION



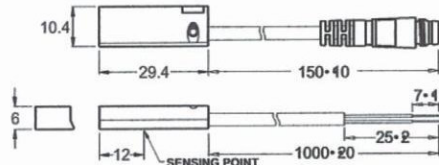
SPECIFICATION

CHARACTERISTIC \ TYPE	HL - 40R	HL - 40N	HL - 40P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	50 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

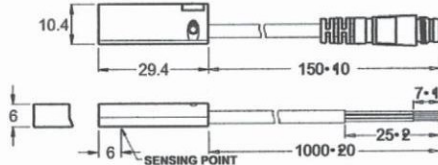
Connect Diagram



HL-40R HL-40R-QC8 HL-40R-QC12

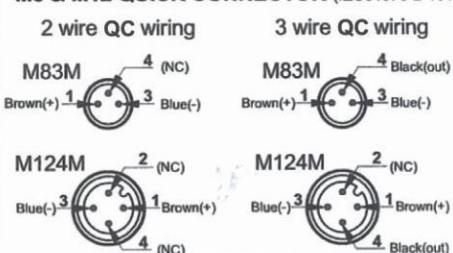


HL-40N HL-40N-QC8 HL-40N-QC12



HL-40P HL-40P-QC8 HL-40P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)



NOTE: 1. The max. operating voltage of HL-40R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

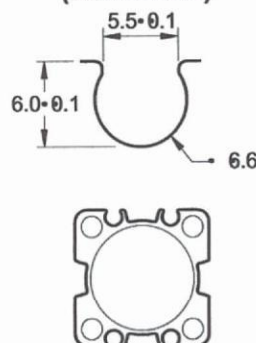
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • Y • Z

3 Directions / 1Hour Each Time.

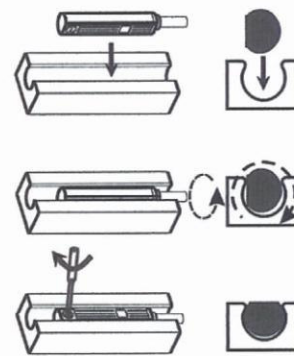




GROOVE DIMENSION (NORGREN)



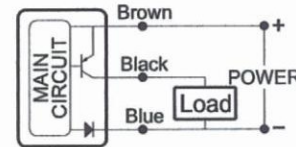
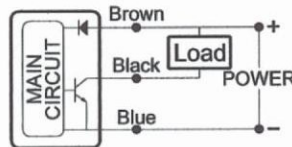
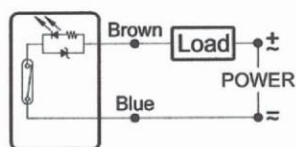
INSTALLATION



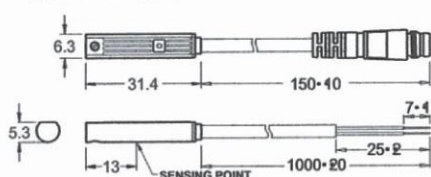
SPECIFICATION

TYPE CHARACTERISTIC	HL - 50R	HL - 50N	HL - 50P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	19 mA max. @ 24V (Switch Active)	16 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	1.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	2.8• ; 2C, OIL RESISTANT PVC	2.8• ; 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression; O/P Short Circuit Protect	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

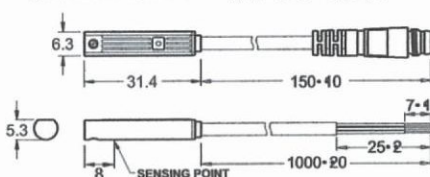
Connect Diagram



HL-50R HL-50R-QC8 HL-50R-QC12



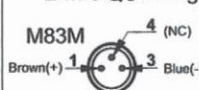
HL-50N HL-50N-QC8 HL-50N-QC12



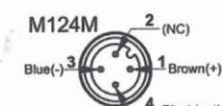
HL-50P HL-50P-QC8 HL-50P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



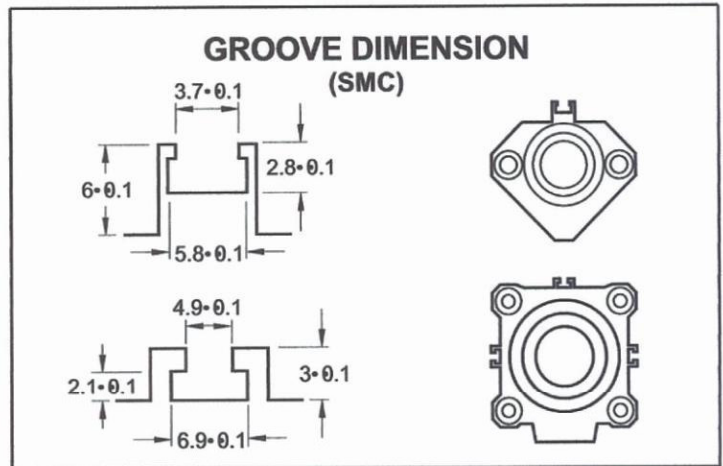
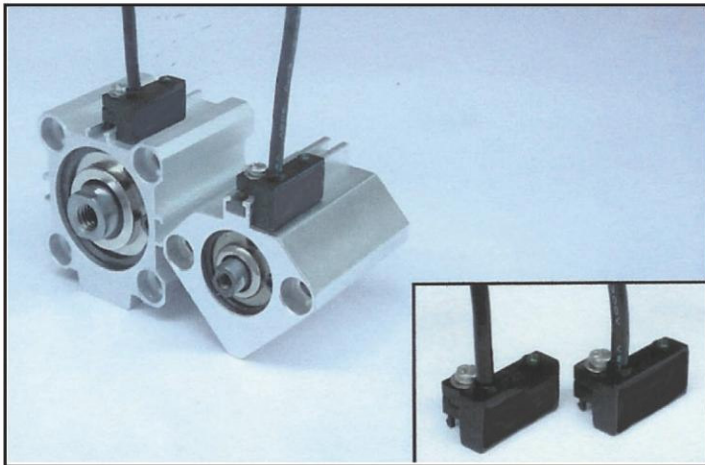
NOTE: 1. The max. operating voltage of HL-50R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t(Anisotropic Rubber Magnet).

3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz(Sweep 1min) / X • Y • Z 3 Directions / 1Hour Each Time.

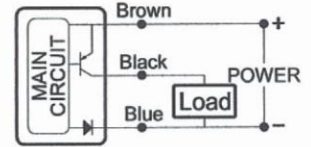
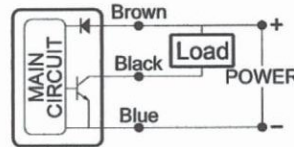
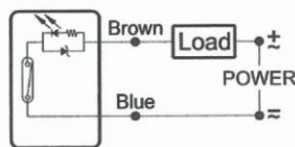




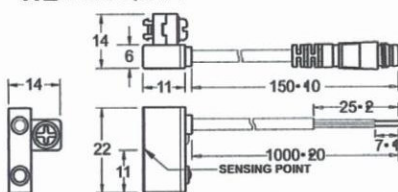
SPECIFICATION

TYPE CHARACTERISTIC	HL - 72R	HL - 72N	HL - 72P
SWITCHING LOGIC	SPST Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE (NOTE 1.)	5~240V DC/AC	5~28V DC	
SWITCHING CURRENT	100 mA max.	200 mA max.	
SWITCHING RATING	10 W max.	6 W max.	
CURRENT CONSUMPTION	—	20 mA max. @ 24V (Switch Active)	18 mA max. @ 24V (Switch Active)
VOLTAGE DROP	2.5 V max. @ 100mA DC	0.5 V max. @ 200 mA (Resistive Load)	
LEAKAGE CURRENT	—	0.01 mA max.	
INDICATOR	Red LED	Red LED	Green LED
CABLE	3.3• ꞑ 2C, OIL RESISTANT PVC	3.3• ꞑ 3C, OIL RESISTANT PVC	
SENSITIVITY (NOTE 2.)	40 G		
MAX. SWITCHING FREQUENCY	200 Hz	1000 Hz	
TEMPERATURE RANGE	-10 ~ 70 • •		
SHOCK (NOTE 3.)	30 G	50 G	
VIBRATION (NOTE 4.)	9 G		
ENCLOSURE CLASSIFICATION	IP 67 (NEMA 6)		
PROTECTION CIRCUIT	—	Power Source Reverse Polarity; Surge Suppression	
CE Certificate NO.	No. E8 04 08 53669 001	No. E8 04 08 53669 003	No. E8 04 08 53669 002
3C Certificate NO.	No. : 2004010305127433		

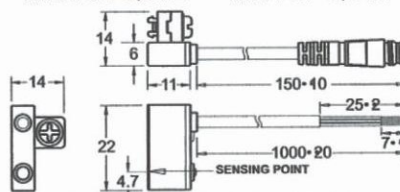
Connect Diagram



HL-72R
HL-72R-QC8
HL-75R-QC12



HL-72N
HL-72N-QC8
HL-75N-QC12



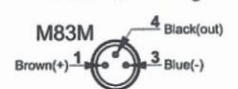
HL-72P
HL-72P-QC8
HL-75P-QC12

M8 & M12 QUICK CONNECTOR (IEC61076-2-101)

2 wire QC wiring



3 wire QC wiring



NOTE: 1. The max. operating voltage of HL-72R-QC8 is 60V AC/DC (Based on IEC61076-2-101).

2. Measuring standard target: 15.5 * 8 * 5t (Anisotropic Rubber Magnet).

3. Sin Wave / X • Y • Z 3 Directions / 3 Times Each Direction / 11mS Each Time.

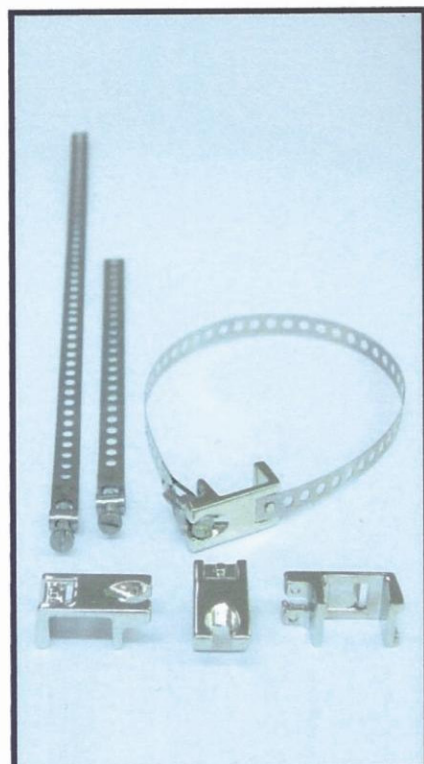
4. Double Amplitude 1.5mm / 10Hz~55Hz~10Hz (Sweep 1min) / X • Y • Z

3 Directions / 1Hour Each Time.



PAB CLAMP

Mounting HL-20 & HL-21 series on Round Cylinder



PAB	Step 1	Step 2	Step 3	Step 4
PAB-01 For 12• ~ 63• round cylinder use PAB-02 For 12• ~ 125• round cylinder use	Start by keeping screw 3 to 4 turns into barrel nut on the end of the band assembly.	1. Place the screw head into the clamp and wrap the band around the cylinder. 2. Position the pin with the nearest hole on the band and mark the hole with a permanent marker.	1. Remove clamp assembly. 2. Cut the band at next 2 adjacent hole from marked hole.	1. Insert cut end of the band into flat slot opposite from the clamp slot. 2. Place the chosen hole over the pin and bend the band firmly down with thumb pressure. 3. Wrap the band around cylinder barrel and re-insert screw Head into clamp. 4. Position the switch and tighten.
				! ATTENTION! Do not over tighten - • Damage to the switch and/or cylinder may occur.

PBS CLAMP

PBS Mounting HL-33 series on Round Cylinder

PBT CLAMP

PBT Mounting HL-30 & HL-31 series on Round Cylinder

⇒ PBS clamp and PBT clamp are similar, and they have the same instruction as below



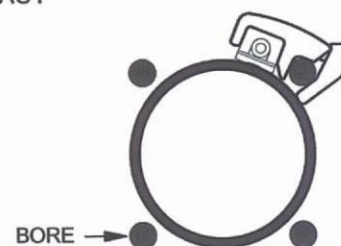
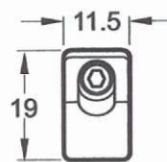
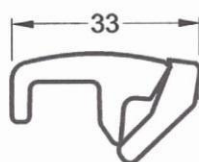
PBS-01 PBT-01 For 6• ~ 63• round cylinder use PBS-02 PBT-02 For 6• ~ 125• round cylinder use	Step 1	Step 2	Step 3	Step 4
	Start by keeping screw 3 to 4 turns into barrel nut on the end of the band assembly.	1. Place the screw head into the clamp and wrap the band around the cylinder. 2. Position the pin with the nearest hole on the band and mark the hole with a permanent marker.	1. Remove clamp assembly. 2. Cut the band at next 1 adjacent hole from marked hole.	1. Insert cut end of the band into flat slot opposite from the clamp slot. 2. Place the chosen hole over the pin and bend the band firmly down with thumb pressure. 3. Wrap the band around cylinder barrel and re-insert screw Head into clamp. 4. Position the switch and tighten.
				! ATTENTION! Do not over tighten - • Damage to the switch and/or cylinder may occur.

PAC BRACKET

Mounting HL-20 & HL-21 series on Tie-Rod Cylinder


PAC

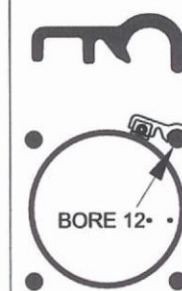
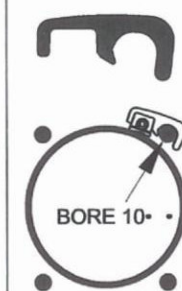
MATERIAL: ZINC DIE-CAST



APPLY TO 32• TO 125• TIE-ROD CYLINDER (BORE SIZE FROM 5• TO 12•)

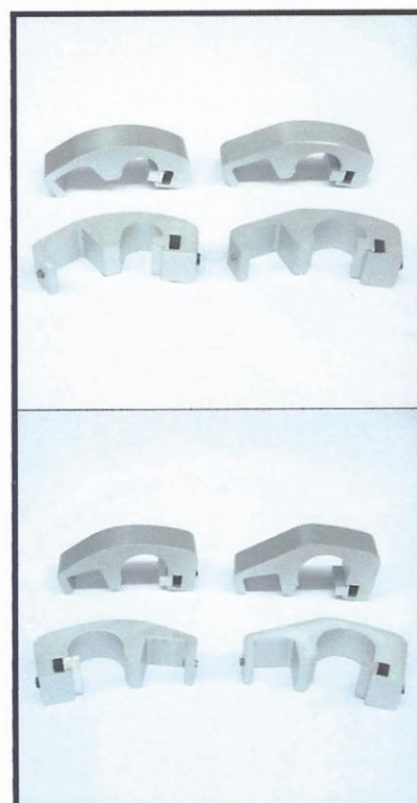
PM BRACKET

Mounting HL-20 & HL-21 series on Tie-Rod Cylinder

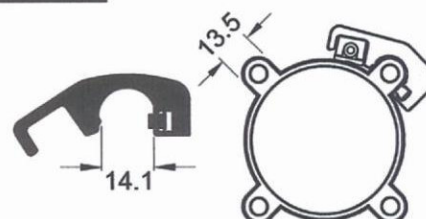

PM - 6
PM - 8
PM - 10
PM - 12
PM - 16


PI BRACKET

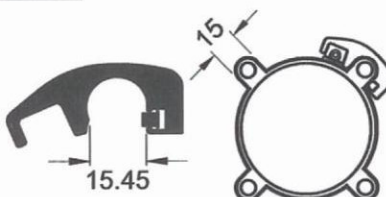
Mounting HL-20 & HL-21 series on ISO Profile Cylinder


PI-1

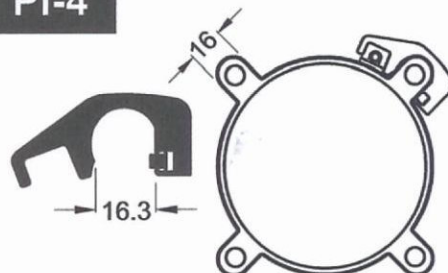

Apply to 32• to 40• ISO Profile Cylinder

PI-2


Apply to 50• to 63• ISO Profile Cylinder

PI-3


Apply to 80• ISO Profile Cylinder

PI-4


Apply to 100• ISO Profile Cylinder

PC BRACKET

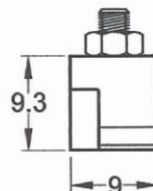
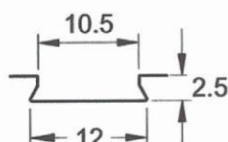
Mounting HL-03 & HL-15 series on Dovetail Groove Cylinder



PC

MATERIAL: STAINLESS STEEL

DOVETAIL GROOVE



PBO CLAMP

Mounting HL-03 & HL-15 series on Round Cylinder



PBO

PBO-01
For 6° ~ 63° round cylinder use

PBO-02
For 6° ~ 125° round cylinder use



Step 1

Start by keeping screw 3 to 4 turns into barrel nut on the end of the band assembly.

Step 2

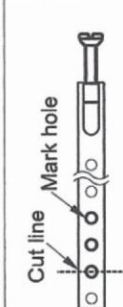
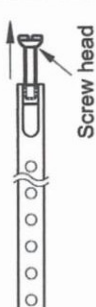
1. Place the screw head into the clamp and wrap the band around the cylinder.
2. Position the pin with the nearest hole on the band and mark the hole with a permanent marker.

Step 3

1. Remove clamp assembly.
2. Cut the band at next 2 adjacent hole from marked hole.

Step 4

1. Insert cut end of the band into flat slot opposite from the clamp slot.
2. Place the chosen hole over the pin and bend the band firmly down with thumb pressure.
3. Wrap the band around cylinder barrel and re-insert screw head into clamp.
4. Position the switch and tighten.

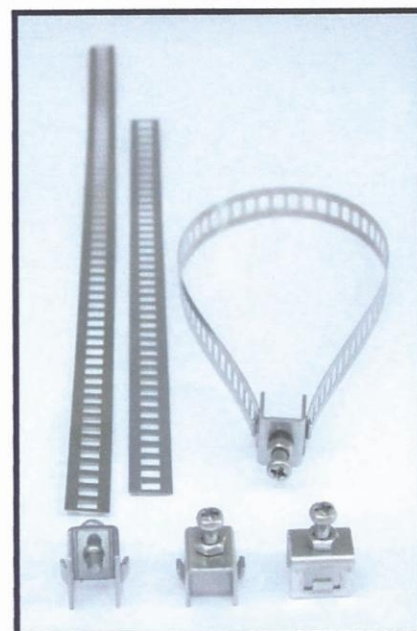


! ATTENTION!
Do not over tighten • •
Damage to the switch and/or cylinder may occur.



PBK CLAMP

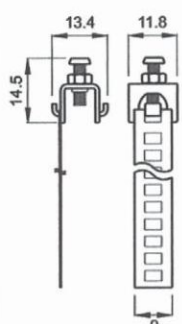
Mounting HL-03 & HL-15 series on Round Cylinder



PBK

PBK-01
For 6° ~ 40° round cylinder use

PBK-02
For 6° ~ 63° round cylinder use



Step 1

Loosen screw & nut.

Step 2

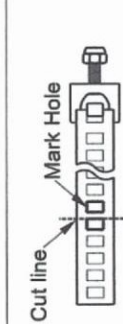
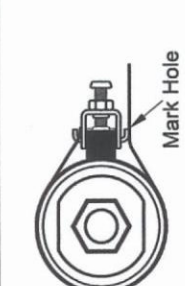
1. Place sensor & wrap the band around the cylinder.
2. Position the hook with the nearest hole on the band and mark the hole with a permanent marker.

Step 3

1. Remove mounting assembly.
2. Cut the band at the nearest edge of next hole.

Step 4

1. Re-place the sensor & mounting assembly.
2. Wrap the band & put the chosen hole on hook.
3. Position the switch and tighten.
4. Finally swivel nut for steady.



! ATTENTION!
Do not over tighten • •
Damage to the switch and/or cylinder may occur.

