



Product Characteristics

Technology
Lifetime at Full Stroke
Mounting
Other Specification
Options
Operating Temperature
Ingress Protection
Max Allowable Cable Pull Force

Non-Contact Hall Switch (Low Side Output - NO)
Up to 2 Million Cycles
M12x1 Thread with Locking Nut
Blue Night Illumination and Red Function Illumination, Sealed Housing (No LEDs for H1W)
Customized Color Options, Customized Symbol Options
-40°C ... +85°C
IP6K9K Electronic / IP54 Mechanical
50 N

Electrical Data

Supply Voltage
Supply Current (No Load)
Output Current
Overvoltage
Reverse Battery Voltage

H10: 5VDC ($\pm 0.5V$), H11: 12VDC ($\pm 3V$), H12: 24VDC ($\pm 4V$), H1W: 5-24VDC
5 mA (typ.) / 10 mA (max.)
10 mA (max.)
H10: 14V, H11: 22V, H12: 30V, H1W: 30V during 1 hour
-10V max. during 1 hour

Environment

Chemical Load
Damp Heat Steady
Damp Heat, Cyclic
Cold
Dry Heat
Change of Temperature
Mechanical Shock
Vibration Sinusoidal
Vibration Random
Free Fall
Water Jet
Dust
Immersion
Salt Spray

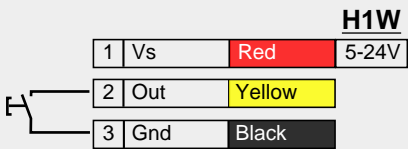
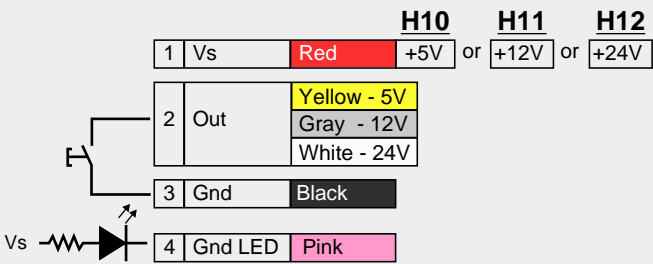
ISO 16750-5 : Diesel, engine oil, hydraulic fluid, grease, brake fluid, antifreeze fluid, urea, windscreen washer fluid, vehicle washing chemicals, cola, coffee, NPK fertilizer.
DIN EN 60068-2-78 : 40°C, 85% RH, 96h
DIN EN 60068-2-30 : Between 25 / 55°C, 95% RH, 24h/cyc, 6cyc
DIN EN 60068-2-1 : -40°C, 48h
DIN EN 60068-2-2 : +85°C, 48h
DIN EN 60068-2-14 : Between -40 / 85°C, 8h/cyc, 30cyc
DIN EN 60068-2-27 : 40g, 6ms, 1000 times per plane x, y, z
DIN EN 60068-2-6 : 40g, 0,32m/s, 8h per plane x, y, z
DIN EN 60068-2-64 : 5,8g, 10-2000Hz, 8h per plane x, y, z
DIN IEC 60068-2-32 : 1m free fall to concrete ground, 2 times per plane x, y, z
DIN 40050 Part 9 : Electronic IP 6K9K, Mechanical IP 54
DIN 40050 Part 9 : Electronic IP 6K9K, Mechanical IP 54
DIN 40050 Part 9 : Electronic IP 67
DIN EN 60068-2-11 : 504 hours

EMC/ESD

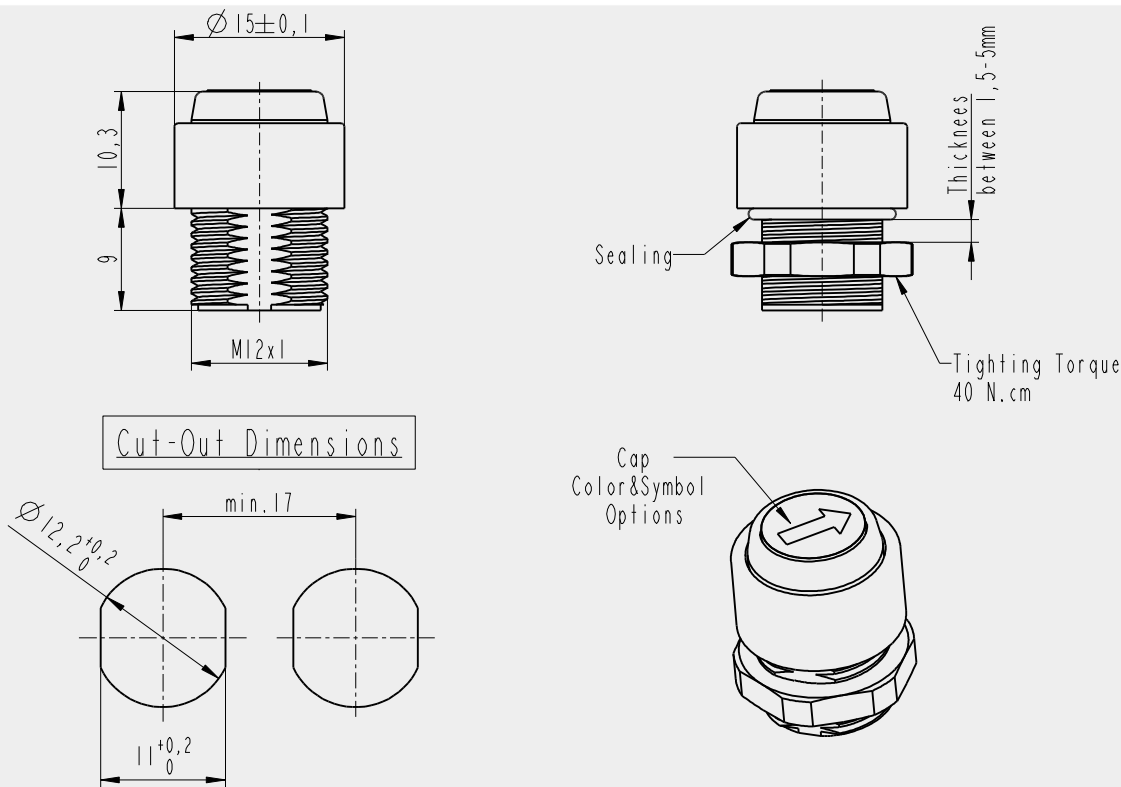
EMC
ESD
Load Dump

ECE-R10 Rev.5
ISO 10605
ISO 7637-2 Pulse 5b (H11, H12)

Electrical Connection

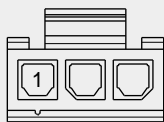


Technical Drawing



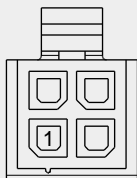
Connector Options

Molex - Micro Fit-3











Mating Connector:
43640-0300

Molex - Micro Fit-4



Mating Connector:
43020-0400

Symbol Options

Code	Symbol	Description
P001		RAL 9003 Signal white
P002		RAL 3001 Signal red
P003		RAL 5005 Signal blue
P004		RAL 6010 Grass green
P005		RAL 1023 Traffic yellow
P006		RAL 2010 Signal orange
P007		RAL 9005 Jet black
P008		RAL 7043 Traffic grey B

Code	Symbol	Description
P051		Background color: RAL 7043 Legend color: RAL 9003 Arrow
P501		Background color: RAL 7043 Legend color: RAL 9003 Arrow
P502		Background color: RAL 9005 Legend color: RAL 9003 Differential Lock
P503		Background color: RAL 9005 Legend color: RAL 9003 Horn
P504		Background color: RAL 9005 Legend color: RAL 9003

Ordering Code

MO 392 - H1X - PXXX - XX

Hardware Configurations
H10 - 5V
H11 - 12V
H12 - 24V
H1W - 5-24V (no LED)
*

Symbol Option
P001- RAL 9003
See symbol table for symbol codes.
**

Connection
00- 250mm Loose Cable (AWG 24)
01- Molex Micro-Fit Connector 250mm Cable

* 5V supply voltage and blue night / red function light is standard, other configs are available upon request with minimum order quantity.

** For other available symbols please see "Symbol Options".

*** 250mm loose cable is standard, other connections are available upon request with minimum order quantity.

Example: MO 392-H10-P001-00 is Push Button, 5V Supply Voltage and Blue Night / Red Function Light, RAL 9003 Cap and 250mm Loose Cable.

Safety Instructions

- *Do not use switch in hazardous and explosive environment.
- *Keep the switch away from radio equipment .
- *Do not place the switch to the direct air flow of vehicles heating cooling air duct due to the high temperature stress.
- *Screen with the vehicle's ground the electric cables connected to switch.Far away the switch cable from power-conducting lines.
- *Provide a clean power supply to the switch. Otherwise voltage transients may damage the switch.
- *Do not direct the pressure washing jet to switch.
- *Unplug connectors from the switch during electrical welding operations.
- *Damages which result from improper use, all warranty and liability claims with respect to the manufacturer void.
- *To perform a risk analysis of the system is customer's responsibility at use in safety-related functions of the switch.
- *These products are ESD (Electrostatic Discharge) sensitive devices. ESD may cause permanent damage. When handling these devices please observe standard ESD precautions.

Makersan reserves the right to make corrections, enhancements, improvements and other changes to its products at any time and without notice.