McLaren ELECTRONIC SYSTEMS

TRUE POSITION/ZERO SPEED

The True Position/Zero Speed sensor incorporates a DHE (Differential Hall Effect) sensor. The Hall effect gives an output when subjected to a changing magnetic field. The field is set up by a magnet inside the sensor body and changes when ferromagnetic teeth are passed beneath the sensor (no magnets are required in the target). The sensor responds to changes in magnetic field strength by corresponding to tooth frequencies down to 0Hz.

Electrical

- Supply voltage 9.5V to 12.5V unregulated
- Supply current <20mA
- Open collector output
- Output current 35mA maximum
- Frequency response 0Hz to 12kHz
- Reverse polarity protection
- Output polarity (referring to the target wheel direction and sensor orientation shown on the outline drawing) - the output of the sensor will fall when the sensor is over the centre of a gap and rise when the sensor is over the centre of a tooth
- Positive duty cycle 35 to 65%
- Duty cycle optimised for wheel direction shown on drawing (but sensor will operate in both directions)

Cable and Connection Definition

- 26AWG un-screened cable
- Cable length is shown on the order details but any length is available on request
- Various automotive and military standard connectors are available
- Connection

Red wire	Pin A	Pin 1	Supply
Green wire	Pin B	Pin 2	Ground
White wire	Pin C	Pin 3	Signal

Note: The sensor will have two additional 26AWG wires within the cable. These are for manufacturing use only and should not be connected.

Application

- Dog position when car is stationary

Mechanical

- Air gap 0.4mm ±0.05mm
- Body diameter 10mm minimum
- Weight less than 50g (including cable)
- Aluminium alloy body, hard anodised and dyed black
- Polyester cable boss for strain relief to the sensor body
- Trigger wheel geometry (wheel to be supplied by customer)

Pitch	5mm ±0.05mm
Tooth width	3mm min
Tooth depth	5mm (or 3mm if through slot)
Gaps to have parallel sides (not teeth)	

Design and manufacture is in-house, so if our existing designs do not suit your application, we can provide cost effective customised parts to suit even the most demanding application. No engineering charges are made for simple modifications such as customer specific connectors, cable protection and cable lengths. Please contact our technical consultancy service who will be pleased to help.

Environmental

- Vibration 50 to 2500Hz @ 40g 8hrs per axis
- Resistant to standard motorsport fluids
- Maximum humidity 100%
- Operating temperature 20 to 150°C
- Aluminium alloy body, hard anodised and dyed black
- Sensor will be calibrated and tested using MESL standard test wheel unless otherwise specified
- Viton jacketed cable

McLAREN TECHNOLOGY CENTRE
CHERTSEY ROAD, WOKING
SURREY GU21 4YH, UNITED KINGDOM

T: +44 (0) 1483 261400
F: +44 (0) 1483 261402
W: www.mclarenelectronics.com

USA: McLAREN ELECTRONICS INCORPORATED
T: +1 (704) 660 3181
Email: sales@mclarenelectronics.com

ASIA: TOKYO R&D CO. LTD
T: +81 (0) 46 224 6729
Email: mes@r-d.co.jp

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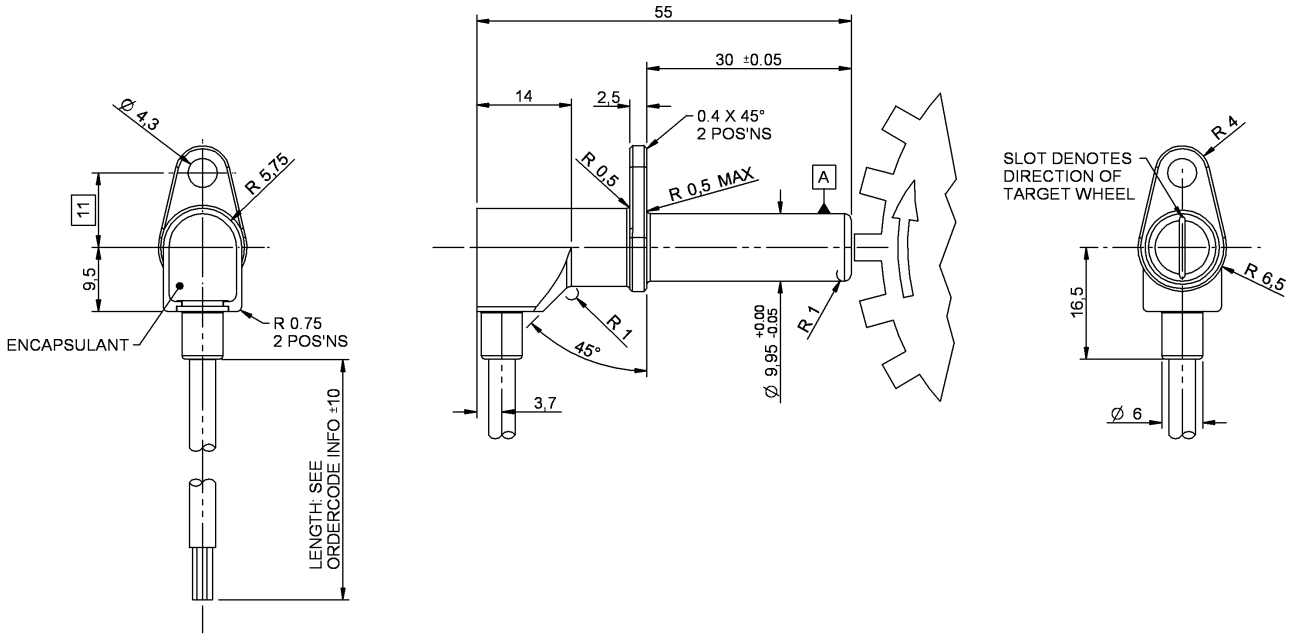
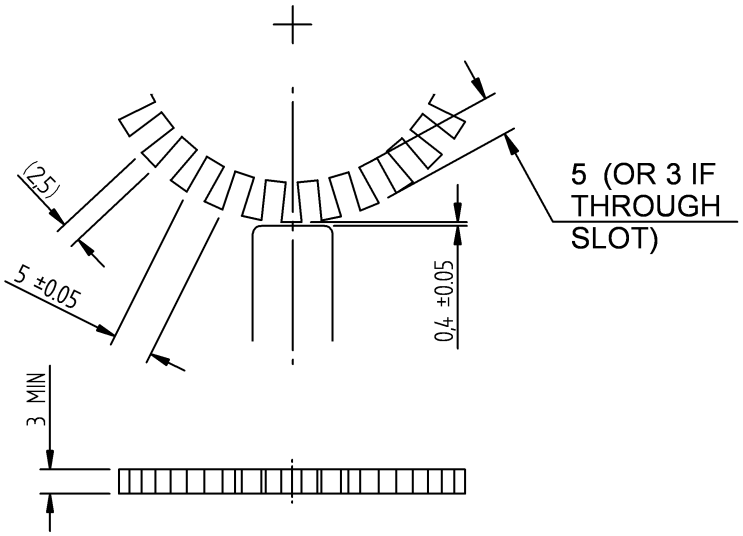


REQUIRED TRIGGER WHEEL GEOMETRY
(GAPS TO HAVE PARALLEL SIDES)



Cable Length	Order Code
1000mm	O 030 350 010 000

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W: www.mclarenelectronics.com
USA: McLAREN ELECTRONICS INCORPORATED
T: +1 (704) 660 3181
Email: sales@mclarenelectronics.com
ASIA: TOKYO R&D CO. LTD
T: +81 (0) 46 224 6729
Email: mes@r-d.co.jp