McLaren ELECTRONIC SYSTEMS

PRESSURE MODULE
PITOT SENSOR 16 CHANNEL

This multi channel pressure module is typically used for aerodynamic development, whereby pressure tappings can be made across surfaces of wings and aero features over the vehicle.

Analogue and CAN output variants are available. Scaled pressure results are either transmitted over CAN to the host controller and/or data logger, or are single ended analogue outputs which can be connected directly to most control units and data loggers.

Electrical

- Supply voltage 8 to 16V unregulated[1]
- Supply current 90mA max @ 12V[1]
- Output at -150mbar = 4.5V ±0.10V @ 25°C
- Output at 0mbar = 0.5V ±0.10V @ 25°C
- Output voltage represented by a 11-bit integer
- Resolution (11-bit ADC) 2.44mV 0.092mbar
- Combined accuracy <±1.5% FSO over compensated temperature range (<±3% FSO for remainder of operating temperature)
- -3dB at 159Hz

For each channel, the output changes when the pressure at the port for that channel is lower than the pressure at the REF port.

Mechanical

- Rated pressure -150mbar
- Measurement range 0 to -150mbar differential
- Maximum differential pressure 2 x rated pressure
- Weight less than 95g (CAN version), 110g (Analogue version)
- Aluminium alloy body, anodised and dyed black
- Titanium pressure ports
- Other pressure connections and orientations are available upon request

[1] If an operating temperature above 115°C is required, refer to table below:

Operating Temp (°C)	Max Supply Voltage (V)	Max Current Consumption (mA)
115 - 120	14	80
120 - 125	10	100

Application

Aero-dynamic development

CAN Messaging

- ISO11898 1Mbit/s CAN communications link for configuration and results data
- CAN sampling rate configured by host ECU up to 1kHz
- CAN message identifiers configured by host ECU allowing multiple modules sharing a common bus (a fixed CAN identifier will be required for configuration messages)
- CAN bus link must be terminated using 120Ω resistor
- 4 CAN messages are required to transmit 16 x 11 bit pressure outputs

Environmental

- Body resistant to standard motorsport fluids
- Exposure of non-corrosive gas to ports 1-16 only. Reference port is vented to case and should therefore be exposed to dry gasses only. REF port should be sealed when not in use.
- Maximum humidity 100%
- Operating temperature 0 to +115°C[1]
- Compensated temperature 30 to +70°C
- Vibration (24hrs per axis)
  100Hz, 0.00797g^2/Hz
  200Hz, 0.17157g^2/Hz
  300Hz, 0.54279g^2/Hz
  650Hz, 0.00965g^2/Hz
  1000Hz, 0.02080g^2/Hz

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Connection Definition – Analogue Variant

- Connectors 2x ASDD0-06-09-PN
- Connector A

Pin 1	Channel 1
Pin 2	Channel 2
Pin 3	Channel 3
Pin 4	Channel 4
Pin 5	Channel 5
Pin 6	Channel 6
Pin 7	Channel 7
Pin 8	Channel 8
Pin 9	Channel 9

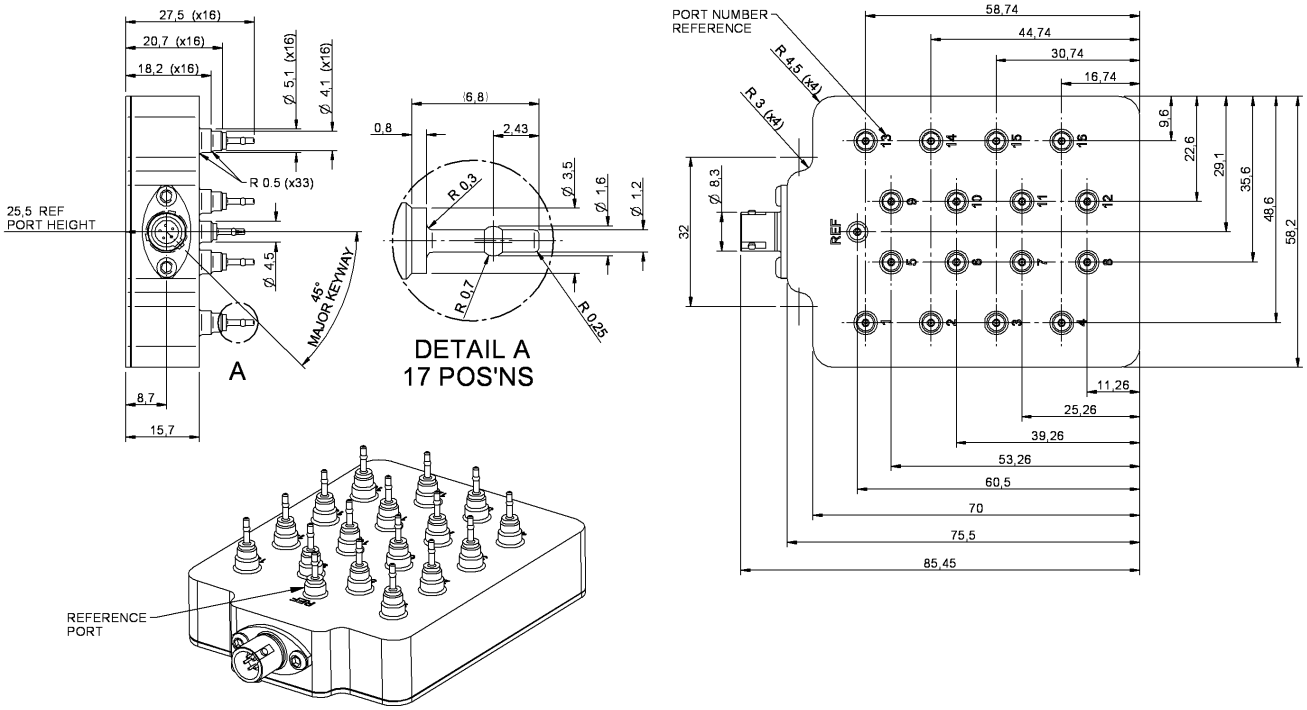
- Connector B

Pin 1	Channel 10
Pin 2	Channel 11
Pin 3	Channel 12
Pin 4	Channel 13
Pin 5	Channel 14
Pin 6	Channel 15
Pin 7	Channel 16
Pin 8	Supply
Pin 9	Ground

Connection Definition – CAN Variant

- Connector 8STA2-02-05PN Souriau connector
- Connection

Pin 1	Supply
Pin 2	Ground
Pin 3	CAN +
Pin 4	CAN –
Pin 5	Not connected



Order Code	Description
O 030 330 005 028	CAN Output PIN16 pitot sensor

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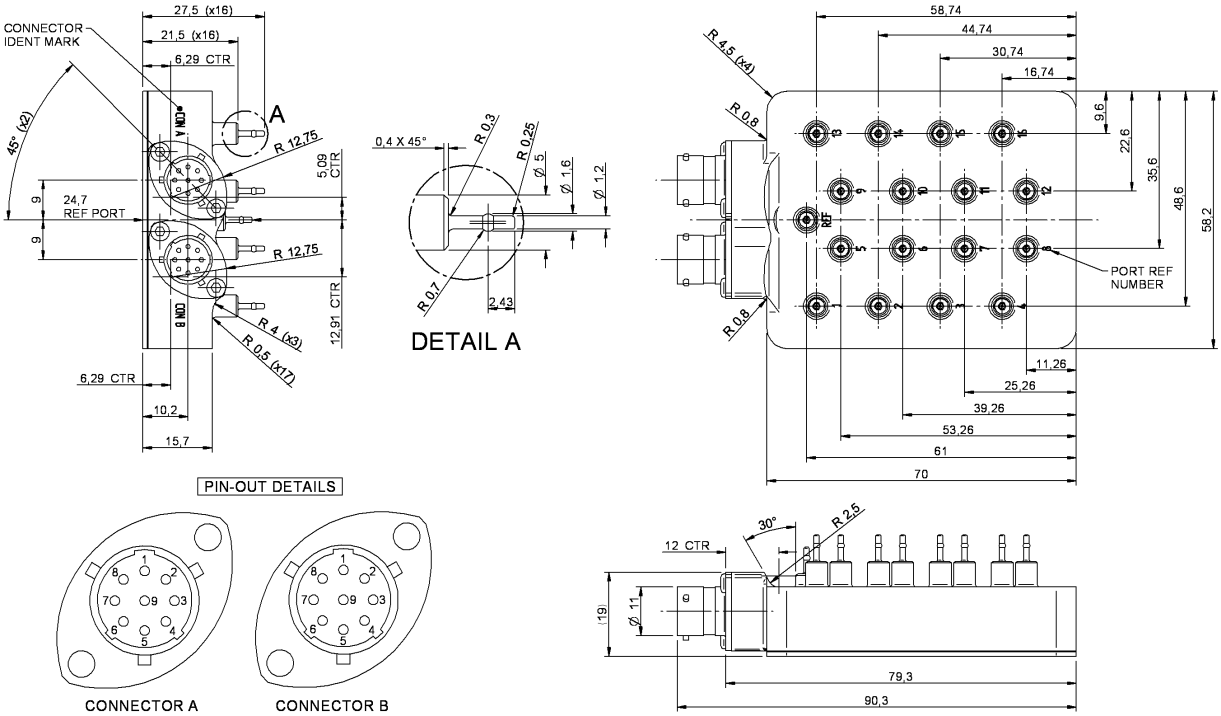

Order Code	Description
O 030 330 005 029	Analogue Output PIN16 pitot sensor

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