

INTERFACE

TIU-32 Thermocouple Interface Unit



The TIU-32 is a 32 channel thermocouple interface unit. Two versions are available, the TIU-32 and the TIU-32C providing output as either 0-5V analogue or via CAN.

Cold junction is provided with the TIU-32 and TIU-32C. In the case of the standard TIU-32 the 32 compensated signals are then multiplexed (32:2) to provide two 0-5V scaled outputs. Channel selection is under the control of a host ECU via 4 channel select pins.

The TIU-32C CAN-linked version is fitted with a microcontroller that samples the analogue signals and scales them accordingly ready for transmission to a control unit via the CAN bus at speeds up to 1Mbps.

Electrical

- Supply Voltage 7V to 17.5V
- Supply Voltage must not exceed 17.5V continuous (the unit is protected against transients and reverse polarity)
- Current 95mA maximum (70mA, typ)

Mechanical

- Case material Magnesium alloy, finished with stippled black epoxy
- Weight less than 155g

Sensor Inputs

- 32 Analogue Type 'K' thermocouple inputs, -50°C to +1300°C nominal sensor range, cold-junction compensated, open circuit detection (1M pull-up to 160mV)
- 4 Digital channel select inputs (10k pull-downs), 5V clamp, can be driven from TTL or Moog output

Outputs

- 2 0-5V outputs (16 multiplexed outputs per channel)
- Nominal scale 60mV at -50°C, 230mV at 0°C, 3.944V at 1000°C
- Outputs can be scaled and transmitted via a CAN link at 1Mbps

Application

- Multiple channel temperature monitoring.

Connection Definition

- Integral, sealed, LEMO series F motorsport connectors

Connector 1	22 way	HEN3F322XLNP
Connector 2	19 way	HES2F319XLDP

- For pin numbers, please contact our Technical Consultancy Service

Electro Magnetic Compatibility

- Complies with the essential protection requirements of 89/336/EEC

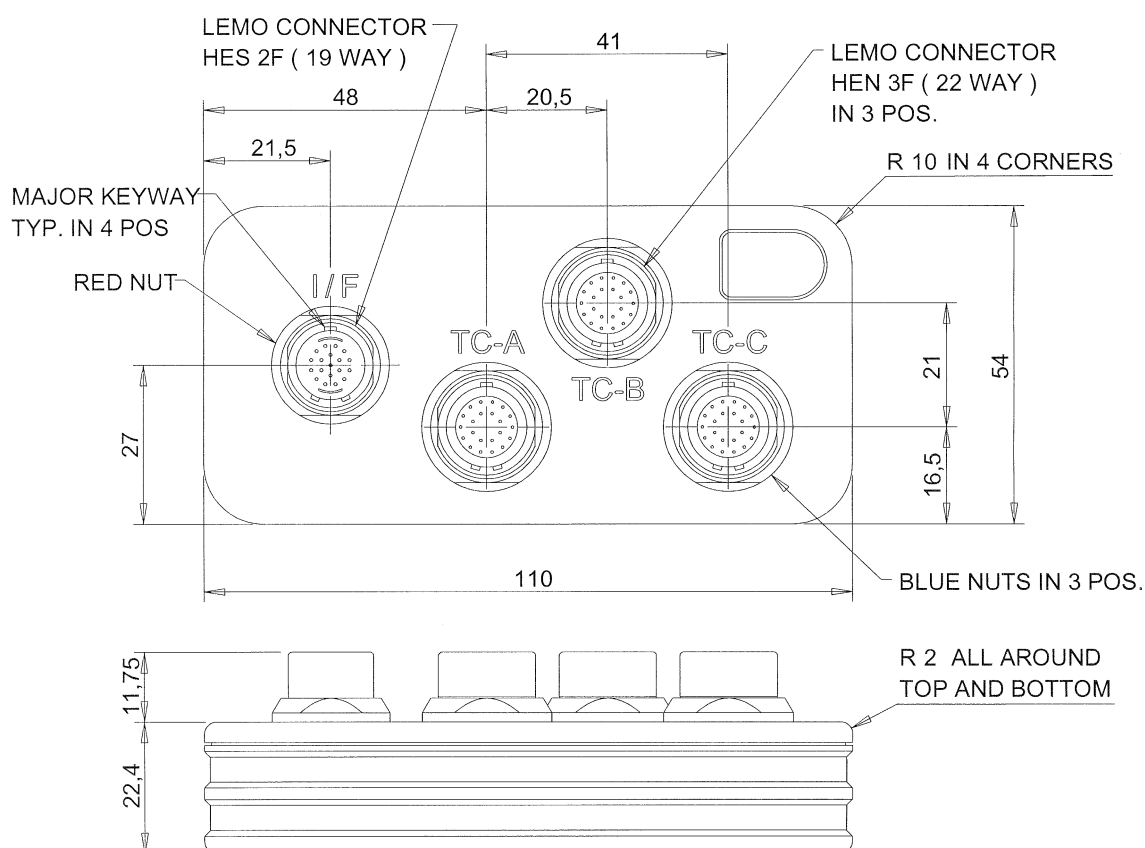
Environmental

- Splash resistant to standard motorsport fluids
- Lid and screws sealed with silicone sealant, lid 'O' ring sealed
- Maximum humidity 100%
- Operating temperature -50°C to +70°C
- Storage Temperature -50°C to +85°C
- Vibration 100 to 1000Hz, all axes, 24 hours
- Care must be taken to shield the TIU-32 from draughts and sources of direct heat, as uncompensated errors will occur if the unit is subjected to thermal gradients or operated in an unstable ambient temperature.

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Description	Order Code
TIU-32	O 030 095 008 001
TIU-32C (CAN linked)	O 030 095 008 002

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