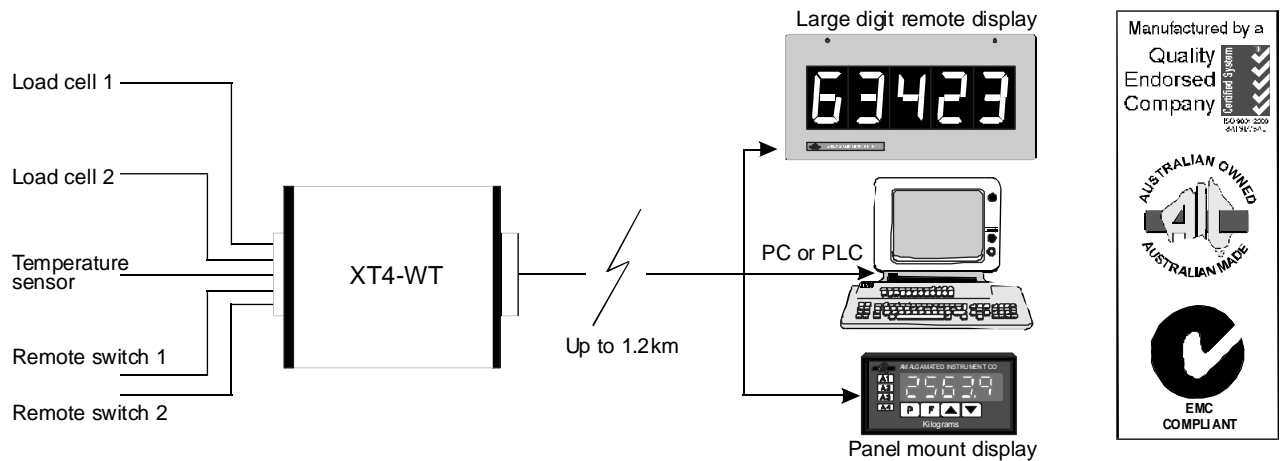


XT4-WT Intelligent Load Cell Interface



Features

- Stores sensor calibration in non volatile memory
- Accepts 2 load cell channels and 1 temp. sensor
- RS485 serial communication allows multiple XT4 interfaces to be connected on same RS485 bus. ASCII or Modbus RTU protocol can be selected.
- Eliminates inaccuracies and noise attributed to transducer cable in conventional analog systems
- RS485 serial communications allows cable length of up to 1.2km
- 3 way isolation between sensor inputs, RS485 output and power supply eliminates problems due to electrical leakage
- Allows sensor(s) to be digitally linearised and temperature compensated
- Temperature reading can also be useful when ambient temperature at the time of measurement is required
- Powered by wide range 12 to 48VDC or 12 to 32 AC(RMS)
- Programmable sample rate, up to 100 per second (single channel) or 25 per second (dual channel)
- High resolution 24 bit analog to digital converter

- 2 remote inputs accept volt free contact for external tare or zero or to clear the peak and valley memory when Modbus protocol is used.

Applications

- Weight/pressure/level/torque etc. measurement from 4 wire mV/V type sensor inputs
- Load cell interface to computer or PLC
- Weighbridge, load platforms, silos, hoppers etc with 1 x XT4 per each 2 load cells provides system diagnosis for faults and load distribution
- Display via computer, remote meters and large digit displays
- Batching systems from multiple sources
- Checkweighing and parts counting
- Weighing systems controlled or monitored by radio modem
- Rail scales for meat processing
- Torque monitoring and control from PC/PLC
- Production management and control
- Conveyer belt tension monitoring
- Vehicle weighing systems
- Liquid level from load cells or submersible depth transducer with SG temperature correction

The XT4 intelligent load cell interface is a revolutionary product designed for applications where load, pressure or liquid level etc. is to be monitored and remote viewing or analysis is required. The XT4 is also ideal for direct connection to individual load cells (2 per XT4). The strain bridge sensors are monitored by the XT4 using a precision 24 bit analog to digital converter. The intelligent interface allows the system calibration to be stored in the non volatile memory. This allows the external equipment to readily address and monitor a number of sensors connected to the same RS485 bus. Unlike analog retransmission systems there is no loss of accuracy due to errors in the D/A and A/D in the transmitter and receiver or the associated cable. The RS485 serial communications permits up to 1km of low cost twisted pair cable (shielded). In many installations there is a considerable saving in cabling costs.

There are two strain bridge input channels which can share up to 4 x 350Ω load cells. There is also a temperature input which accepts an LM335 IC temperature sensor. The temperature reading can be used to provide temperature compensation for the sensor(s) or simply be included in the data stream as additional information. Calibration scaling of the strain bridge inputs can be performed either by two point (linear) or up to 5 point (linearised) live input calibration or simply by entering the specified mV/V output of the sensor together with the full scale capacity.

The RS485 serial output may be connected to a PC, PLC or many of AIC's products e.g. large digit remote display or panel mount monitor controller. Strain gauge and temperature calibration is achieved via the serial port. Connection to a PC or PLC expands the functionality of the system to incorporate, linearising, temperature compensation, system analysis, data logging, graphs etc. Special PC Windows based software is optionally available. Two remote inputs are also provided to allow remote switch contacts to operate an internal tare or zero or, if Modbus protocol is used, peak or valley memory reset can also be selected.

XT4WT-1.2-0

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SPECIFICATIONS

Specifications are subject to change without notice

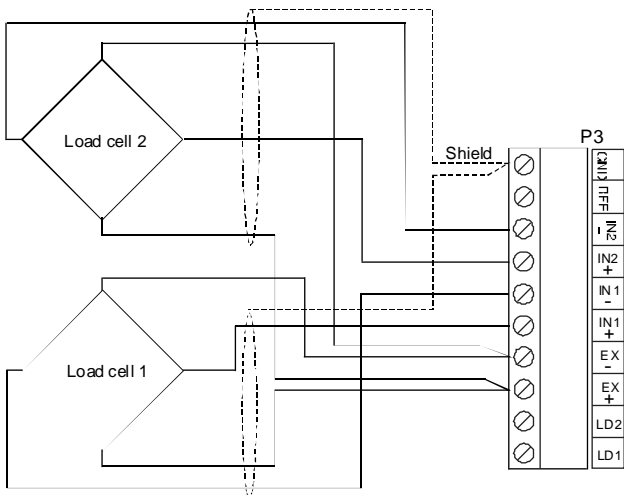
TECHNICAL SPECIFICATIONS

- Input types: One or two ratiometric 4 arm strain bridges
- Input Sensitivity: 2mV/V to 16mV/V selectable
- Excitation voltage: 5V
- Bridge resistance: 80Ω to >2000Ω total
- Accuracy: Up 0.005% of full scale depending on mV, filter and sample rate, calibrated using live input calibration
- Sample rate: Single input 1 to 100/sec. selectable
Dual input 1 to 25/sec. selectable
- ADC resolution: Up to 24 bits
- Microprocessor: MC68HC11
- Ambient temp: -10 to 60°C
- Humidity: 5 to 95% non condensing
- Power supply: AC 12 to 32VRMS or DC 12 to 48V
110VDC available to order
- Power usage: Typically 25mA @24V, 12mA @12V
- Output: RS485 communications configurable as ASCII or Modbus RTU protocol
- Baud rate: 300, 600, 1200, 2400, 4800, 9600, 19.2k or 38.4k baud, selectable
- Address range: Address of each unit can be set from 0 and 254 (1 to 254 for Modbus)

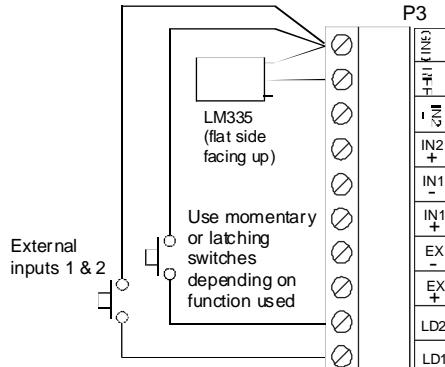
PHYSICAL CHARACTERISTICS

- Case size: 44mm x 91mm x 130mm, including connectors for standard aluminium enclosure.
- Connections: Plug in screw terminals (2.5mm² max wire for power supply and RS485, 1.5mm² for all other connections)
- Weight: approx. 400 gm in enclosure

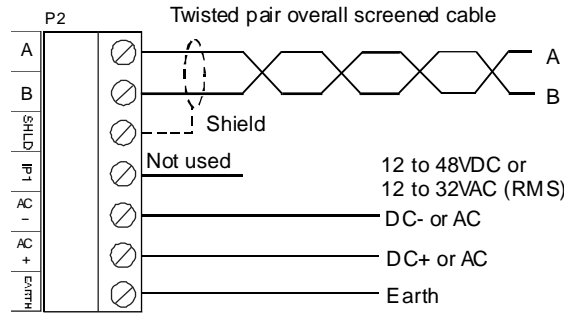
LOAD CELL CONNECTIONS



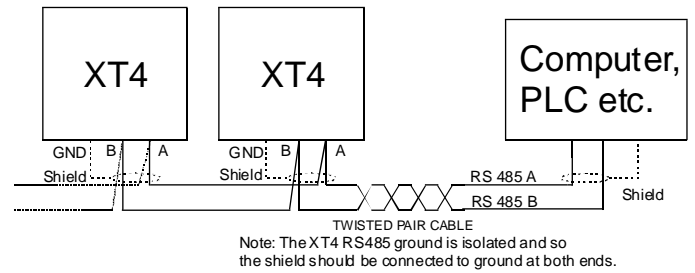
TEMPERATURE & EXTERNAL INPUT CONNECTIONS



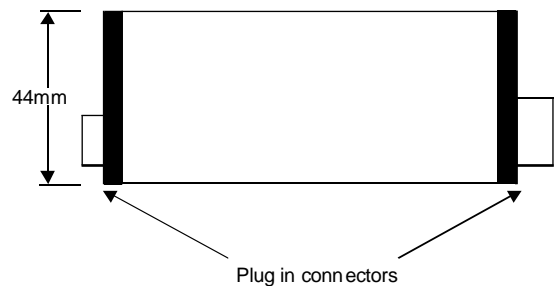
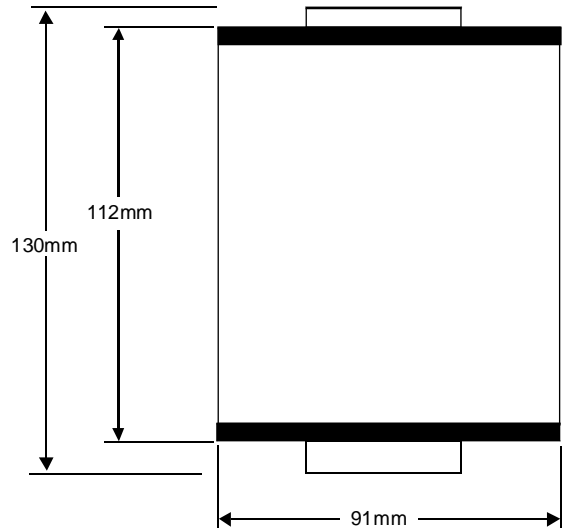
RS485 AND SUPPLY CONNECTIONS



RS485 MULTIDROP CONNECTIONS



INSTRUMENT DIMENSIONS - Standard enclosure



ORDER CODE

XT4-WT- -

POWER SUPPLY

XT4-WT- -

12-48 VDC or 12-32VAC (RMS)

HOUSING

XT4-WT- -

STANDARD ALUMINIUM ENCLOSURE

BARE PCB WITH HORIZONTAL TERMINALS

OUTPUT TYPE

XT4-WT- -

RS485 ISOLATED

RS485 NON ISOLATED