3 YEAR WARRANTY

CE

User's Guide

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MADE IN UNITED KINGDOM

TXDIN1610
Universal DIN Rail Transmitter
TXDIN1620
Universal DIN Rail Transmitter With 3-Wire Insulated Wire Output
TXDIN1630
Universal DIN Rail Trip Amplifier

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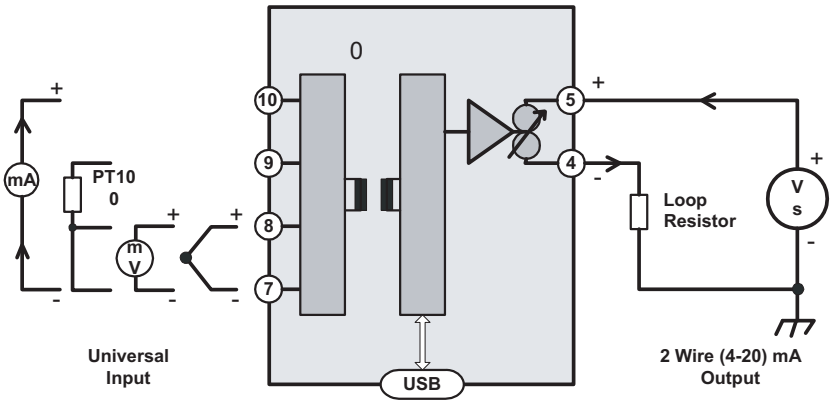
OMEGA ENGINEERING, INC.

TXDIN1610 USER GUIDE

DIN RAIL MOUNTED TRANSMITTER
UNIVERSAL INPUT
TWO WIRE (4 to 20) mA OUTPUT



Important - Please read this document before any installing.

IMPORTANT - CE & SAFETY REQUIREMENTS

Product must be DIN rail mounted, inside a suitable enclosure providing environmental protection to IP65 or greater.

To maintain CE EMC requirements, input wires must be less than 30 metres.

The product contains no serviceable parts , or internal adjustments. no attempt must be made to repair this product. Faulty units must be returned to supplier for repair.

This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation.

Before attempting any electrical connection work, please ensure all supplies are switched off.

ABSOLUTE MAXIMUM OPERATING CONDITIONS:-

Supply Voltage	± 30 V dc (Protected for over voltage and reverse connection)
Current with over voltage	± 200 mA
Input Voltage	± 5 V between any terminals
Input Current	± 100 mA between terminals 7 & 10
Ambient	Temperature (-30 to 75) °C Humidity (10 to 95) % RH (Non condensing)

PRODUCT SPECIFICATION

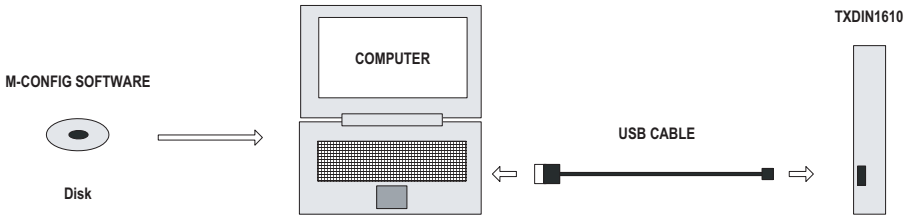
Please refer to the product data sheet for full specification, available to down load at www.omegamanual.info.

RECEIVE AND UNPACKING

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

CONFIGURATION

IMPORTANT The TXDIN1610 can be configured whilst connected and powered, but a portable battery powered computer must be used to avoid the effects of ground loops.



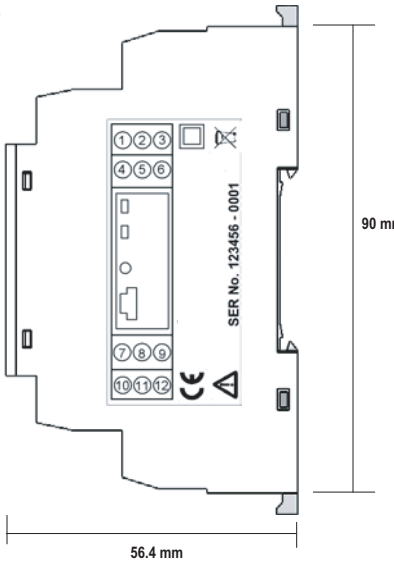
The following parameter can be configured by simply entering as prompted by the software package.

- **Input type (K, J, E, N,T, R, S, mV, PT100, mA)**
- **Low range**
- **High range**
- **Units (°C, °F, mV, mA)**
- **Burnout (direction of output current on sensor burnout)**
- **User Trim (option to lock out front panel trim function)**

Factory default:

Input type	**= P**
Units	**= °C**
High Range	**= 100**
Low Range	**= 0**
Burnout	**= UPSCALE**
User Trim	**= ON**

MECHANICAL INSTALLATION

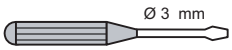


17.5 mm

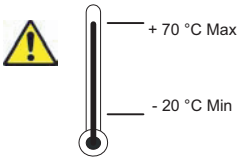
56.4 mm

MOUNTING

1. Screw driver

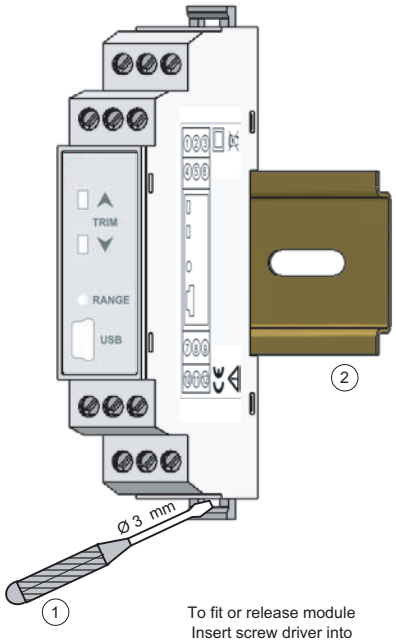


2. EN50022 DIN RAIL



TXDIN1620 Enclosure

Style	DIN 43880 (1 module width)
Material	Polyamide 6.6 self extinguishing
Terminals	Screw terminal
Cable	2.5 mm Max
Colour	Grey



To fit or release module
Insert screw driver into
slot and lever latch
away from body

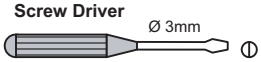
ELECTRICAL INSTALLATION

Screened Cable

Twisted Pair Cable

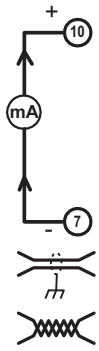
TC Compensation Cable Screened

Screw Driver

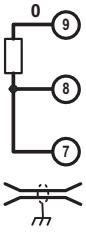


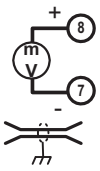
TURN OFF SUPPLY BEFORE WORKING ON ANY ELECTRICAL CONNECTION

UNIVERSAL INPUT CONNECTION
For cable length < 3 Metres no screen or twist pair required.
Thermocouple inputs must use correct compensation cable.
PT100 inputs all three wire must be equal length (resistance).
Use recommended types for cable length (3 to 30) metres.

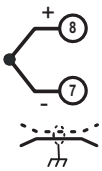


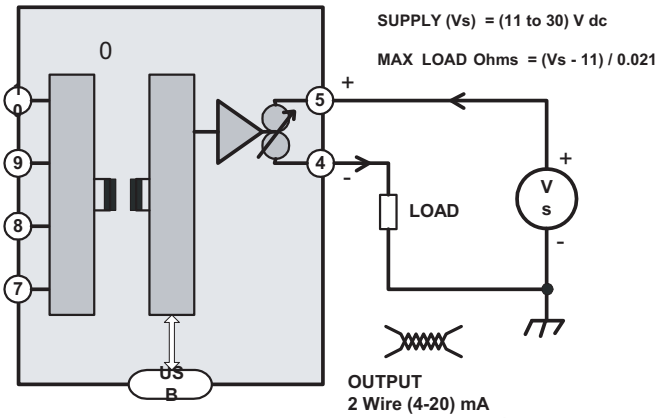
PT10





T/C





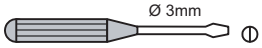
SUPPLY (Vs) = (11 to 30) V dc

MAX LOAD Ohms = (Vs - 11) / 0.021

OUTPUT
2 Wire (4-20) mA
Max cable length 1000 metres
Use twisted pair cable > 30 metres

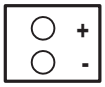
USER TRIM

Screw Driver

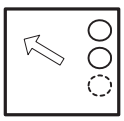


Digital mA meter

Power supply (24V dc)



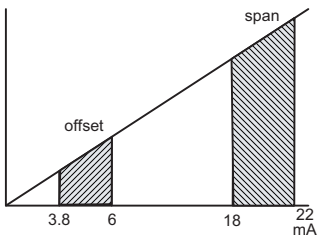
Input Simulator

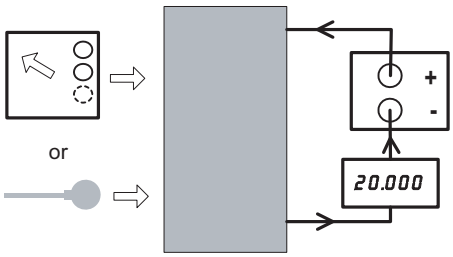


or sensor

User trim function allows manual adjustment of the output current, this is useful for minor calibration adjustment or trimming out any sensor error, ± 5% of range adjustment is available at both offset and span. Raise and lower buttons are provided on the front panel, of the transmitter, accessed using a 3 mm flat blade screw driver. Insert the screw driver into the appropriate slot to operate the button. The button has a click action.

The transmitter will automatically detect the correct trim point (offset or span) based on the output current drive. Offset will be trimmed when the current is between (3.8 to 6) mA, span when the current is between (18 to 22) mA. No trim action occurs at any other current.

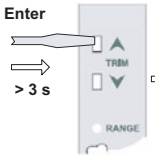




METHOD

1.0 Connect transmitter to a suitable input simulator or sensor. Connect output to a 24V dc supply, connecting a digital mA current meter in series with the output. Turn supply on, set input to either offset or span calibration point.

2.0 Enter trim menu by pressing "raise" button for > two seconds. When the trim menu is open the range LED will flash :-



Range LED will indicate Trim action

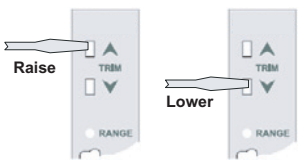
Offset slow toggle ● ● ● ○ ○ ○

Span fast toggle ● ○ ● ○ ● ○

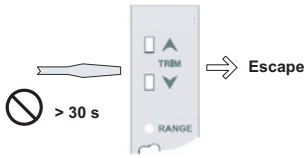
Out of trim range ○

Input out of range ●

3.0 Trim output current by pressing either the raise or lower button, single click to step advance , or press continuously to auto advance.



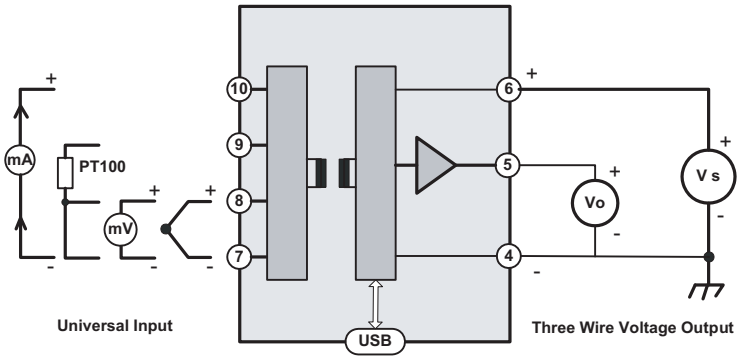
4.0 Once trim is complete allow 30 seconds with no button press, the transmitter will time out and return to normal operation.



OMEGA ENGINEERING, INC.

TXDIN1620 USER GUIDE

DIN RAIL MOUNTED CONDITIONER
UNIVERSAL INPUT
THREE WIRE VOLTAGE OUTPUT



Important - Please read this document before any installing.

IMPORTANT - CE & SAFETY REQUIREMENTS

Product must be DIN rail mounted, inside a suitable enclosure providing environmental protection to IP65 or greater.

To maintain CE EMC requirements , input and supply wires must be less than 30 metres.

Dc supply must be derived from a local supply and not a distribution system.

The product contains no serviceable parts , or internal adjustments. no attempt must be made to repair this product. Faulty units must be returned to supplier for repair.

This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation.

Before attempting any electrical connection work, please ensure all supplies are switched off.

ABSOLUTE MAXIMUM OPERATING CONDITIONS:-

Supply Voltage	± 30 V dc (Protected for over voltage and reverse connection)
Current with over voltage	± 200 mA
Input Voltage	± 5 V between any terminals
Input Current	± 100 mA between terminals 7 & 10
Ambient	Temperature (-30 to 75) °C Humidity (10 to 95) % RH (Non condensing)

PRODUCT SPECIFICATION

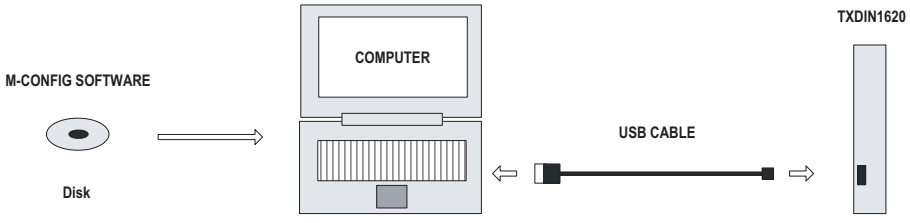
Please refer to the product data sheet for full specification, available to down load at www.omegamanual.info.

RECEIVE AND UNPACKING

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

CONFIGURATION

IMPORTANT The TXDIN1620 can be configured whilst connected and powered, but a portable battery powered computer must be used to avoid the effects of ground loops.



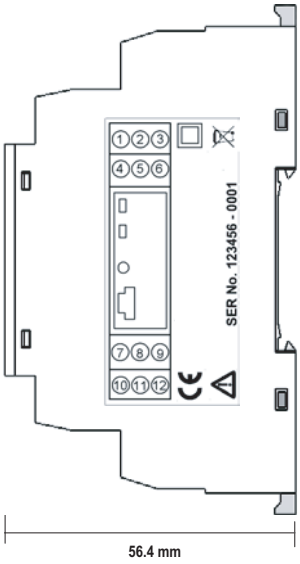
The following parameter can be configured by simply entering as prompted by the software package.

- **Input type (K, J, E, N, T, R, S, mV, PT100, mA)**
- **Low range**
- **High range**
- **Units (°C, °F, mV, mA)**
- **Burnout (direction of output current on sensor burnout)**
- **Output Range (0 to 10), (0 to 5), (0 to 1), (1 to 5), and (2 to 10) V**
- **User Trim (option to lock out front panel trim function)**

Factory default:

Input type	**= P**
Units	**= °C**
High Range	**= 100**
Low Range	**= 0**
Burnout	**= UPSCALE**
Output range	**= (0 to 10) V**
User Trim	**= ON**

MECHANICAL INSTALLATION

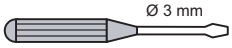


17.5 mm

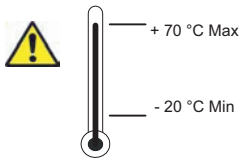
56.4 mm

MOUNTING

1. Screw driver

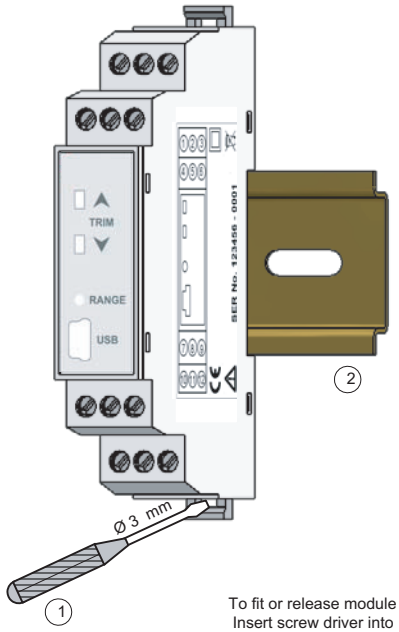


2. EN50022 DIN RAIL



TXDIN1620 Enclosure

Style	DIN 43880 (1 module width)
Material	Polyamide 6. self extinguishing
Terminals	Screw terminal
Cable	2.5 mm Max
Colour	Grey



To fit or release module
Insert screw driver into slot and lever latch away from body

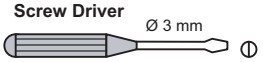
ELECTRICAL INSTALLATION

Screened Cable

Twisted Pair Cable

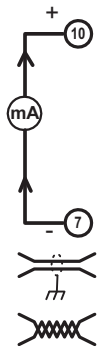
TC Compensation Cable Screened

Screw Driver

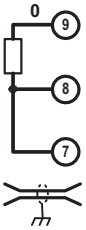


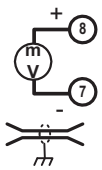
TURN OFF SUPPLY BEFORE WORKING ON ANY ELECTRICAL CONNECTION

UNIVERSAL INPUT CONNECTION
For cable length < 3 Metres no screen or twist pair required.
Thermocouple inputs must use correct compensation cable.
PT100 inputs all three wire must be equal length (resistance).
Use recommended types for cable length (3 to 30) metres.

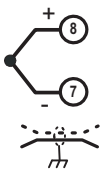


PT10



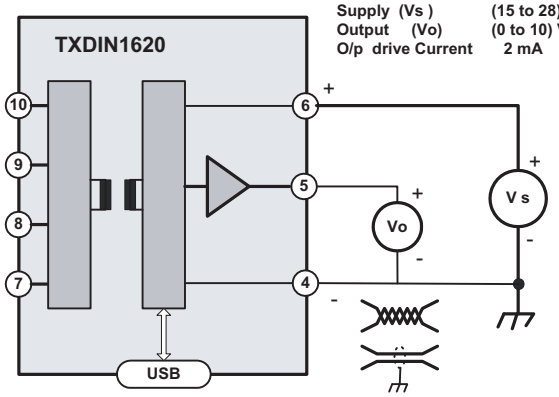


T/C



Three Wire Voltage Output

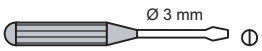
Supply (Vs)	(15 to 28) V dc
Output (Vo)	(0 to 10) V max
O/p drive Current	2 mA



OUTPUT
Three wire voltage
Max cable length 30 metres
Use twisted pair cable or screened > 3 metres

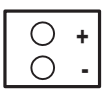
USER TRIM

Screw Driver

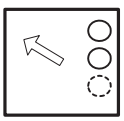


Digital Voltage meter

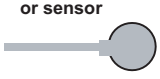
Power supply (24 V dc)



Input Simulator

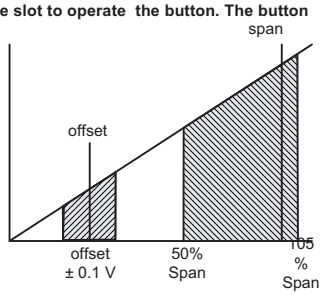


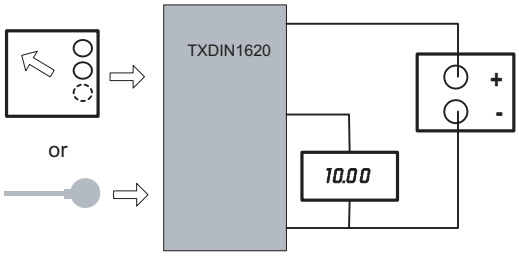
or sensor



User trim function allows manual adjustment of the output current, this is useful for minor calibration adjustment or trimming out any sensor error, ± 5% of range adjustment is available at both offset and span. Raise and lower buttons are provided on the front panel, of the conditioner, accessed using a 3 mm flat blade screw driver. Insert the screw driver into the appropriate slot to operate the button. The button has a click action.

The conditioner will automatically detect the correct trim point (offset or span) based on the output current drive. Offset will be trimmed when the output voltage is within ± 0.1 V of offset output, span when the output voltage is within (50 to 105) % of output range.

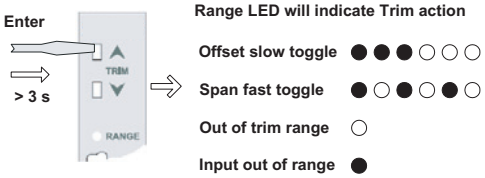




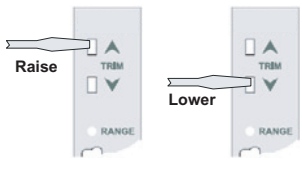
METHOD

1.0 Connect input simulator or sensor. Connect supply to a 24 V dc, connecting a digital volt current meter to output. Turn supply on, set input to either offset or span calibration point.

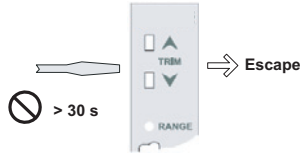
2.0 Enter trim menu by pressing "raise" button for > two seconds. When the trim menu is open the range LED will flash :-



3.0 Trim output voltage by pressing either the raise or lower button, single click to step advance , or press continuously to auto advance.



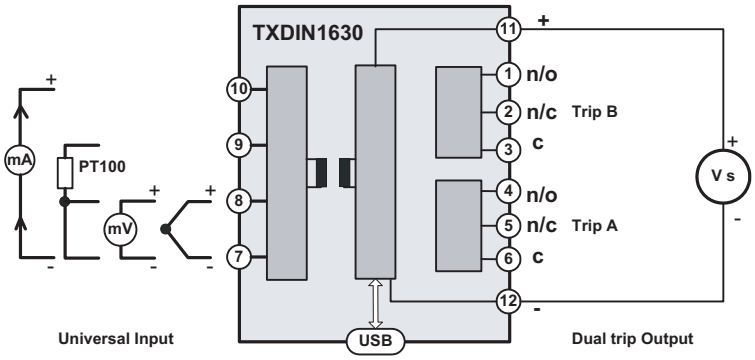
4.0 Once trim is complete allow 30 seconds with no button press, the cobnditioner will time out and return to normal operation.



OMEGA ENGINEERING, INC.

TXDIN1630 USER GUIDE

DIN RAIL MOUNTED TRIP
AMP
UNIVERSAL INPUT
DUAL Form C OUTPUT



Important - Potentially Hazardous situations. Persons responsible for the installation and operation of this equipment must be fully aware of all aspects of this guide. Failure to follow the instructions can cause severe injuries and damage.

IMPORTANT - CE & SAFETY REQUIREMENTS

This product is suitable for enviroment Installation category II pollution degree.
The product is classed as "PERMANENTLY CONNECTED EQUIPMENT".
Product must be DIN rail mounted, inside a suitable enclosure providing environmental protection to IP65 or greater.
Dc supply must be derived from a local supply and not a distribution system.
Max relay contact rating 250 V AC @ 1 a (30 V DC @ 1A). Any circuit connected to a contact must be fused with a 2A (T) fuse.
To maintain CE EMC requirements , input and supply wires must be less than 30 metres.
The product contains no serviceable parts, or internal adjustments. no attempt must be made to repair this product. Faulty uni ts must be returned to supplier for repair.
This product must be installed by a qualified person. All electrical wiring must be carried out in accordance with the appropriate regulations for the place of installation.
Before attempting any electrical connection work, please ensure all supplies are switched off.

ABSOLUTE MAXIMUM OPERATING CONDITIONS:-

Supply Voltage	± 30 V dc (Protected for over voltage and reverse connection)
Current with over voltage	± 200 mA
Input Voltage	± 5 V between any terminals
Input Current	± 100 mA between terminals 7 & 10
Ambient	Temperature (-30 to 75) °C Humidity (10 to 95) % RH (Non condensing)

PRODUCT SPECIFICATION

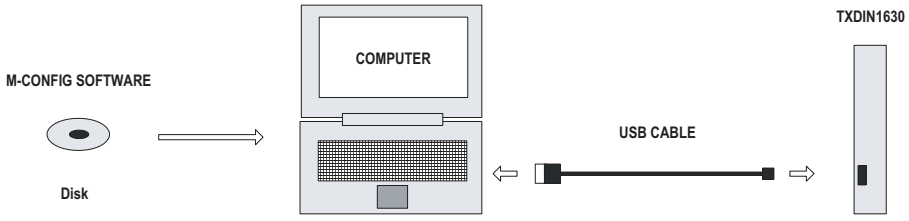
Please refer to the product data sheet for full specification, available to down load at www.omegamanual.info.

RECEIVE AND UNPACKING

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

CONFIGURATION

IMPORTANT The TXDIN1630 can be configured whilst connected and powered, but a portable battery powered computer must be used to avoid the effects of ground loops.



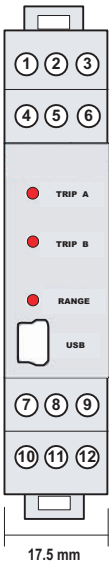
The following parameter can be configured by simply entering as prompted by the software package.

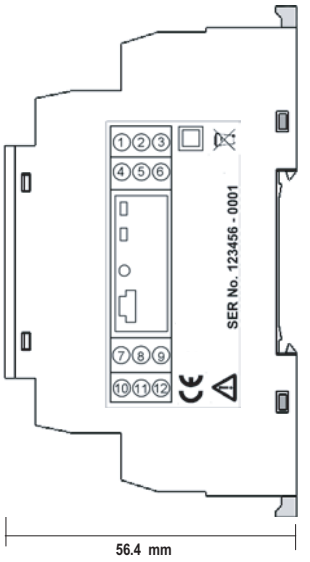
- **Input type (K, J, E, N, T, R, S, mV, PT100, mA)**
- **Setpoint Trip A & B**
- **Hysterisis Trip A & B**
- **Units (°C, °F, mV, mA)**
- **Trip A & B Level (High or Low)**

Factory default:

Input type	**= P**
Units	**= °C**
Trip A	**= H**
Setpoint Trip A	**= 50**
Hysterisis Trip A	**= 1**
Trip B	**= H**
Setpoint Trip B	**= 50**
Hysterisis Trip B	**= 1**

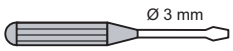
MECHANICAL INSTALLATION



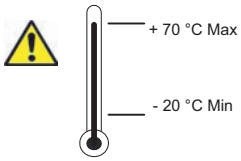


MOUNTING

1 Screw driver

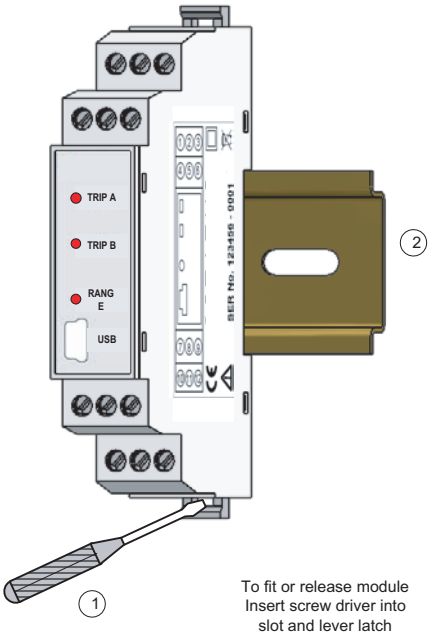


2 EN50022 DIN RAIL



SEM1630 Enclosure

Style	DIN 43880 (1 module width)
Material	Polyamide 6.6 self extinguishing
Terminals	Screw terminal
Cable	2.5 mm Max
Colour	Grey



To fit or release module
Insert screw driver into slot and lever latch away from body

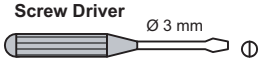
ELECTRICAL INSTALLATION

Screened Cable

Twisted Pair Cable

TC Compensation Cable Screened

Screw Driver

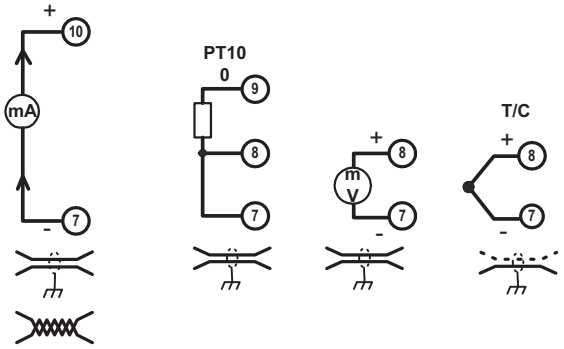


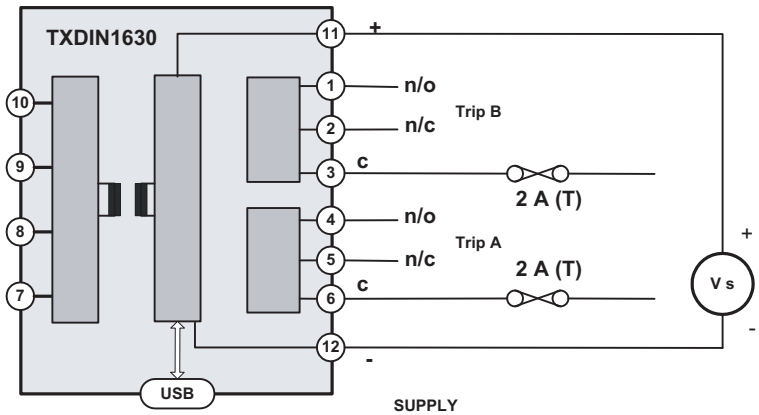
1.0 TURN OFF SUPPLY BEFORE WORKING ON ANY ELECTRICAL CONNECTION.

2.0 FUSE CONTACT CIRCUITS 2 A (T).

3.0 MAX CONTACT RATING 250 V ac (30 V dc) @ 1 A

UNIVERSAL INPUT CONNECTION
For cable length < 3 Metres no screen or twist pair required.
Thermocouple inputs must use correct compensation cable.
PT100 inputs all three wire must be equal length (resistance).
Use recommended types for cable length (3 to 30) metres.





SUPPLY
Max cable length 30 metres

FRONT PANEL INDICATION

Trip A alarm LED on in alarm state

Trip B alarm LED on in alarm state

Range LED on when input is out of range

USB configuration port

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **37 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **three (3) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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- Load Cells & Pressure Gages
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- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters

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- Metering & Control Instrumentation
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- Pumps & Tubing
- Air, Soil & Water Monitors
- Industrial Water & Wastewater Treatment
- pH, Conductivity & Dissolved Oxygen Instruments

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