2 YEAR WARRANTY

OMEGA

User's Guide

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TX401
Head Mount RTD Input Transmitter RFID

Introduction / Introduzione

Thanks for choosing a Omega device.
*The **TX401** converts a signal obtained from temperature sensors PT100, PT1000 or NI100 (with a 2, 3 or 4 wires connection) into a current signal for 4..20mA loop (2 wires).*
Main features are:

- *High accuracy;*
- *16bit conversion;*
- *Programmable by RFid (NFC);*
- *4K Word non-volatile memory (circular buffer) for data-logging with sampling time selectable by the user;*
- *Possibility to rescale the output 4..20mA compared to temperature input value;*
- *Field calibration to compensate eventual errors (Gain and Offset);*
- *Compact dimensions;*
- *The software **RF Programmer** (available for download on www.omega .com) and the **TX400-RFID** allow:*
  - *complete configurability of the device;*
  - *download on PC of logged data;*
  - *visualization/printing of the temperature - time trend*

Grazie per aver scelto un prodotto Omega.
Lo strumento **TX401** converte un segnale di temperatura acquisito attraverso sonde PT100, PT1000 o Ni100 con collegamento a 2, 3 o 4 fili in un segnale normalizzato in corrente per loop 4..20 mA (tecnologia 2 fili).
Le caratteristiche dello strumento sono:

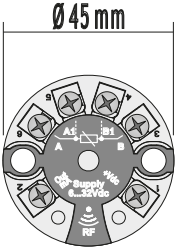
- Elevata precisione;
- Conversione della misura a 16 bit;
- Programmabilità via RFid (NFC);
- 4K Word di memoria non volatile (buffer circolare) per data-logging con tempo di campionamento impostabile dall'utente;
- Possibilità di riscalare l'uscita 4..20mA rispetto all'ingresso in temperatura;
- Taratura in campo per recuperare eventuali errori delle sonde (Gain e Offset);
- Ridotto ingombro;
- Tramite il software **RF Programmer** (scaricabile dal sito www.omega.com) e il programmatore **TX400-RFID**, è possibile fare:
  - configurabilità completa del convertitore;
  - download su pc del logging registrato;
  - visualizzazione e stampa della curva temperatura - tempo

1 Safety guide lines / Norme di sicurezza

Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device.
Only qualified personnel should be allowed to use the device and/or service it and in accordance to technical data and environmental conditions listed in this manual.
Do not dispose electric tools together with household waste material. In observance European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Prima di utilizzare il dispositivo, leggere con attenzione le istruzioni e le misure di sicurezza contenute in questo manuale.
L'utilizzo/manutenzione è riservato a personale qualificato ed è da intendersi esclusivamente nel rispetto dei dati tecnici e delle condizioni ambientali dichiarate.
Non gettare le apparecchiature elettriche tra i rifiuti domestici.
Secondo la Direttiva Europea 2002/96/CE, le apparecchiature elettriche esauste devono essere raccolte separatamente al fine di essere reimpiegate o riciclate in modo eco-compatibile.

2 *Dimensions and installation* / Dimensioni e installazione



1 *Technical Data* / Dati tecnici
1.1 *General data* / Caratteristiche generali

1	*Operating range* Range funzionamento	*6-32 Vdc*
2	*Current output* Uscita in corrente	4..20 mA (2 wires) 4..20 mA (*2 fili)*
3	*Output resolution* Risoluzione in uscita	*1 µA*
4	*Upper Linearity Limit* Limite linearità superiore	*f.s. + 5°C*
5	*Lower Linearity Limit* Limite linearità inferiore	*f.s. - 5°C*
6	*Failure output* Uscita guasto	*selectable 21,5mA or 3,8mA* *selezionabile tra 21,5mA o 3,8mA*
7	*Current output protection* Protezione uscita in corrente	*30 mA approx.* 30 mA circa
8	*Rejection* Reiezione	*50-60 Hz*
9	*Max transmission error* Max errore di trasmissione	*greater between 0,1% f.s. or 0,2°C* maggiore tra 0,1% f.s. o 0,2°C
10	EMI	*< 0,5%*
11	*Cable resistance* Resistenza cavi	*Max 20Ω*
12	*Temperature coefficient* Coefficiente di temperatura	*< 100 ppm*
13	*Sampling time* Tempo di campionamento	*300 ms*
14	*Response time (10..90%)* Tempo di risposta (10..90%)	*Approx. 600 ms*
15	*Sealing* Grado di protezione	*IP 20*
16	*Conformity* Normative	*CE, EN 61000-6-4, EN 61000-6-2*

1.2 *Thermo-mechanic features* / Caratteristiche termomeccaniche

1	*Operating temperature* Temp. di funzionamento	*-40..+85 °C*
2	*Humidity* Umidità	30-90% @ 40°C (*non condensing* / non condensante)
3	*Storage temperature* Temperatura magazzinaggio	*-40..+105°C*
4	*Connections* Connessioni	*Screw pins* Morsetti a vite
5	*Conductors section* Sezione conduttori	*1 mm²*
6	*Wires strip* Spelatura conduttori	*8 mm*
7	*Enclosure* Custodia	*Nylon (PA66)*
8	*Dimensions* Dimensioni	*23 mm, Ø 45 mm*

2 *Input* / Ingressi

Pt100	*Measuring range: -200..+800°C* / Range di misura: -200..+800°C *Connection: 2, 3, 4 wires* / Tecnica di collegamento: 2, 3, 4 fili
Ni100	*Measuring range: -50..+170°C* / Range di misura: -50..+170°C *Connection: 2, 3, 4 wires* / Tecnica di collegamento: 2, 3, 4 fili
Pt1000	*Measuring: -200..+800°C* / Range di misura: -200..+800°C *Connection: 2 wires* / Tecnica di collegamento: 2 fili

2.1 *Connections* / Connessioni

Cables colors according to IEC60751 / Colorazioni cavi come da IEC60751

Pt100
Ni100
Pt1000

Pt100
Ni100

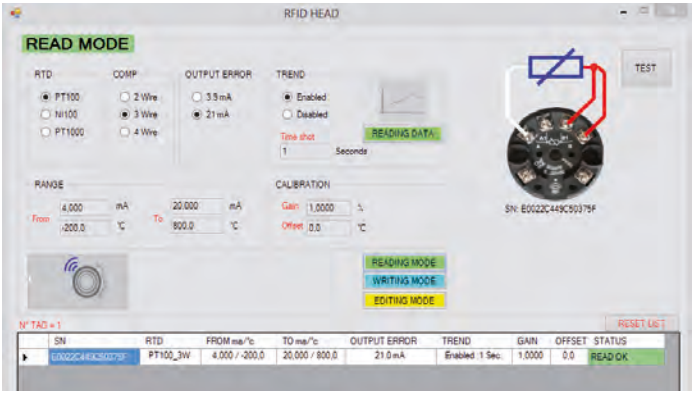
Pt100
Ni100

3 Configuration / Configurazione

*To configure this signal converter it is necessary to use a **TX400-RFID** and the configuration software **RF Programmer** available on www.omega.com. After connecting the TX400-RFID via USB and activating the software, it is possible in "EDIT" mode to configure the device selecting type of sensor, measuring range,*

output for error signal and sampling frequency for the registration. The keys "WRITE" and "READ" allow to write and read data on the devices quickly and easily.
On the lower side of the display a list of all programmed devices is showed; it can be printed to confirm that the programming has been completed successfully.

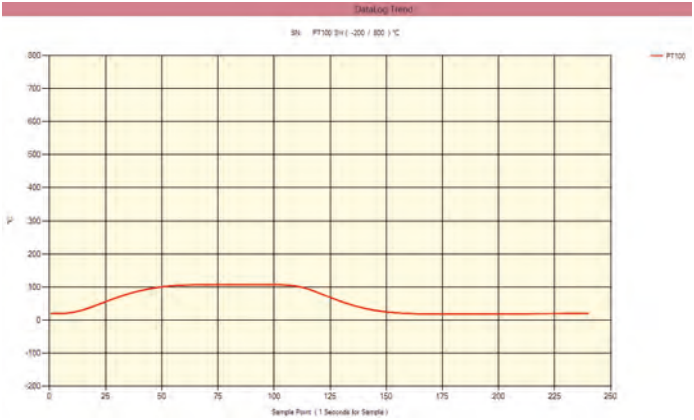
La configurazione di questo convertitore di segnale richiede l'utilizzo di un base programmatore (**TX400-RFID**) e del software di configurazione **RF Programmer**, scaricabile dal sito www.omega.com.
Dopo aver connesso tramite porta USB il TX400-RFID e attivato il software è possibile con la modalità "EDIT" parametrizzare il dispositivo selezionando il tipo di sensore, range di misura, uscita per segnalazione errore e la frequenza di campionamento per la registrazione. Con i tasti "WRITE" e "READ" è possibile scrivere e leggere i vari dispositivi velocemente e in modo agevole.
Nella parte bassa dello schermo appare la lista riassuntiva dei dispositivi programmati, che può essere stampata per certificare la buona riuscita delle operazioni.



4 Data Logger

This signal converter is provided with a datalogging function for the input signal. Fixing the sampling time (1..3600 seconds) each time the loop 4..20mA powers the device up, this will store the input value into a non-volatile memory. Through the TX400-RFID it is possible to download / display / print all data.

Questo convertitore di segnale è provvisto di una capacità di storicizzazione del segnale in ingresso. Fissando il tempo di campionamento (impostabile tra 1 e 3600 sec.) ogni volta che il loop 4..20mA alimenterà il dipositivo questo archivia il valore in ingresso su una memoria non volatile. Tramite il TX400-RFID è possibile scaricare tutti i dati e presentarli a video o stamparli.



Notes / Updates

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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.

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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.

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