

Trasmettitori di temperatura, umidità e CO<sub>2</sub>  
 Temperature, humidity and CO<sub>2</sub> transmitters  
 Temperatur, Feuchtigkeit und CO<sub>2</sub> Messumformer  
 Transmetteurs de température, d'humidité et CO<sub>2</sub>



# TTA, TUA, TTUA, TCO2A, TCO2AU

## IT ⚠ AVVERTENZE

Le operazioni di installazione e manutenzione devono essere eseguite da personale qualificato e in assenza di alimentazione dell'apparecchio e dei carichi esterni. AB Industrietechnik non risponderà di eventuali danni causati da inadeguata installazione e/o dalla manomissione o rimozione dei dispositivi di sicurezza.

### Applicazione:

I trasmettitori della serie TTA, TUA, TTUA, TCO2A e TCO2AU consentono di rilevare la temperatura e/o l'umidità e/o il CO<sub>2</sub> in ambiente non industriale. Sono ideali per sistemi di riscaldamento, raffreddamento e trattamento d'aria in aree domestiche e commerciali. Sono disponibili modelli con uscite in tensione, resistenza e su protocollo Modbus RTU.

### Caratteristiche tecniche:

Alimentazione: 24 V~ ± 10% / 15...35 V~  
 Uscite: CO<sub>2</sub>: 0...10 V~ rif. 0...2000 ppm  
 Temp.: 0...10 V~ rif. 0...50°C (32...122°F)  
 uscita resistiva  
 Umidità: 0...10 V~ rif. 0...100 % u.r.  
 Modbus RTU  
 Sensore temperatura: vds tabella  
 Sensore umidità: precisione ± 3% u.r. (20°C)  
 Sensore NDIR  
 Sensore CO<sub>2</sub>: precisione (25°C) ±(50ppm +2% della misura)  
 campionamento CO<sub>2</sub> 15 s  
 Temperatura ambiente: 0..50°C (32...122°F)  
 Umidità ambiente: 10..90%u.r. senza condensa  
 Limiti di tensione: min. 0 V~ , max. 11.5 V~  
 Display: 4 digit con visualizzazione unità di misura a seconda dei modelli (°C, °F, ppm, %r.h.)  
 Potenza media: < 1 W  
 Potenza trasformatore: 2 VA (5 VA per versione CO<sub>2</sub>)  
 Contenitore: 85 x 100 x 30.5 mm  
 Classe di protezione: IP30  
 Norme conformità CE: EN 60730-1/A16:2007, EN 61000-6-1:2007, EN 61000-6-3:2007

## EN ⚠ WARNING

Each single operation done on the unit, either installation or maintenance, must be done without main supply on the unit and external loads. Such operations are permitted only by skilled workers. AB Industrietechnik is not responsible for possible damages caused by an inadequate installation and/or by removed or exchanged security devices.

### Application:

The transmitters TTA, TUA, TTUA, TCO2A and TCO2AU can measure a value of temperature and/or humidity and/or CO<sub>2</sub> in not industrial places. They are designed for heating, cooling and air handling in domestic areas and commercial buildings. Units with voltage output, resistive output or with Modbus RTU output are available.

### Technical features:

Power supply: 24 V~ ± 10% / 15...35 V~  
 Outputs: CO<sub>2</sub>: 0...10 V~ ref. to 0...2000 ppm  
 Temp.: 0...10 V~ ref. to 0...50°C (32...122°F),  
 resistive output  
 Humidity: 0...10 V~ ref. to 0...100 % r.h.  
 Modbus RTU  
 Temp. sensor: see schedule  
 Humidity sensor: precision ± 3% r.h. (20°C)  
 CO<sub>2</sub> sensor: sensor NDIR  
 precision (25°C) ±(50ppm +2% of measure)  
 sampling CO<sub>2</sub> 15 s  
 Room temperature: 0..50°C (32...122°F)  
 Room humidity: 10..90%r.h. with no condense  
 Voltage limit: min. 0 V~ , max. 11.5 V~  
 Display: 4 digit with unit based on model  
 (°C, °F, ppm, %r.h.)  
 Average power: < 1 W  
 Transformer power: 2 VA (5 VA for CO<sub>2</sub> version)  
 Casing: 85 x 100 x 30.5 mm  
 Protection class: IP30  
 CE standards: EN 60730-1/A16:2007, EN 61000-6-1:2007, EN 61000-6-3:2007

## DE ⚠ ACHTUNG

Die Installation darf nur von qualifizierten Fachleuten durchgeführt werden. AB Industrietechnik übernimmt keine Haftung für Schäden, die durch unsachgemäße Verwendung, falsche Installation oder durch Entfernung von Sicherheitsvorrichtungen verursachten werden.

### Anwendung:

Die Übertragungsgeräte der Serie TTA, TUA, TTUA, TCO2A und TCO2AU ermöglichen das Messen von Temperatur und/oder Feuchtigkeit und/oder CO<sub>2</sub> in nichtbetrieblichen Räumen. Sie sind ideal für Heiz-, Kühl- und Luftaufbereitungssystemen im Wohn- und Geschäftsbereichen. Es sind Modelle mit Spannung, Widerstand sowie Modbus Ausgänge verfügbar.

### Technische Eigenschaften:

Einspeisung: 24 V~ ± 10% / 15...35 V~  
 Ausgänge: CO<sub>2</sub>: 0...10 V~ ent. 0...2000 ppm  
 Temp.: 0...10 V~ ent. 0...50°C (32...122°F),  
 Widerstands Ausgang  
 Feuchtigkeit: 0...10 V~ ent. 0...100 % r.F.  
 Modbus RTU  
 Temperatur Sensor: siehe Tabelle  
 Feuchtigkeit Sensor: Genauigkeit ± 3% r.F. (20°C)  
 CO<sub>2</sub> Sensor: NDIR Sensor  
 Genauigkeit (25°C) ±(50ppm +2% vom Messwert)  
 Messintervall CO<sub>2</sub> 15 s  
 Raumtemperatur: 0..50°C (32...122°F)  
 Feuchtigkeit: 10..90%r.F. ohne Kondensat  
 Spannungsgrenzen: min. 0 V~ , max. 11.5 V~  
 Display: 4 digit mit Messeinheit abhängig vom Modell  
 (°C, °F, ppm, %r.h.)  
 Entnommene Leistung: < 1 W  
 Trafoleistung: 2 VA (5 VA für CO<sub>2</sub> Version)  
 Gehäuse: 85 x 100 x 30.5 mm  
 Schutzklasse: IP30  
 EG Konformitätsnormen: EN 60730-1/A16:2007, EN 61000-6-1:2007, EN 61000-6-3:2007

## FR ⚠ ATTENTION

Pendant les opérations de montage et de maintenance mettre l'appareil ainsi que les charges connectées à celui-ci hors tension. Toutes ces opérations doivent être effectuées par un technicien qualifié. AB Industrietechnik ne pourra être tenu pour responsable des dommages causés suite à une mauvaise installation et/ou une maintenance manipulant ou enlevant les dispositifs de sécurité.

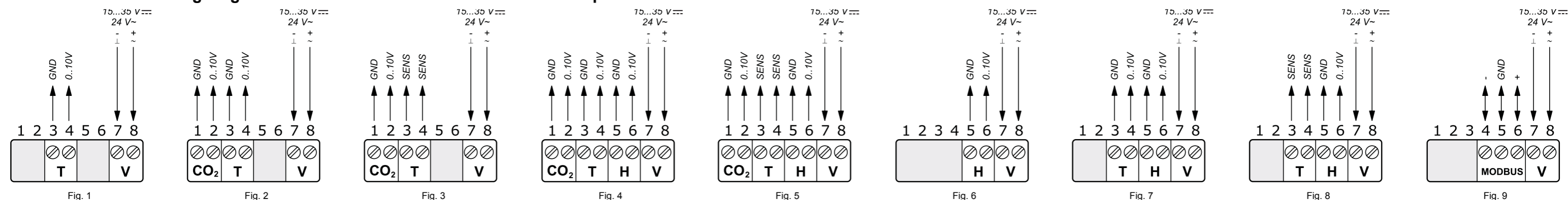
### Applications:

Les transmetteurs de la série TTA, TUA, TTUA, TCO2A ou TCO2AU permettent de relever la température et/ou l'humidité et/ou CO<sub>2</sub> en ambiance non industrielle. Ils sont idéals pour les applications de chauffage, de refroidissement, de traitement d'air dans les endroits résidentiels et commerciaux. Les modèles avec sortie en tension, sortie résistive ou Modbus RTU sont disponibles.

### Caractéristiques techniques:

Alimentation: 24 V~ ± 10% / 15...35 V~  
 Sorties: CO<sub>2</sub>: 0...10 V~ rapporté à 0...2000 ppm  
 Temp.: 0...10 V~ rapporté à 0...50°C  
 (32...122°F), sorties résistives  
 Humidité: 0...10 V~ rapporté à 0...100 % h.r.  
 Modbus RTU  
 Senseur de temp.: voir tableau  
 Senseur d'humidité: précision ± 3% h.r. (20°C)  
 Senseur CO<sub>2</sub>: senseur NDIR  
 précision (25°C) ±(50ppm +2% de la mesure)  
 échantillonnage CO<sub>2</sub> 15 s  
 Temp. d'ambiance: 0..50°C (32...122°F)  
 Humidité d'ambiance: 10..90%h.r. sans condensation  
 Limites de tension: min. 0 V~ , max. 11.5 V~  
 Display: 4 digit avec visualisation de l'unité de mesure selon les modèles (°C, °F, ppm, %r.h.)  
 Puissance moyenne: < 1 W  
 Puissance du transformateur: 2 VA (5 VA pour la version de CO<sub>2</sub>)  
 Boîtier: 85 x 100 x 30.5 mm  
 Classe de protection: IP30  
 Normes CE: EN 60730-1/A16:2007, EN 61000-6-1:2007, EN 61000-6-3:2007

## Schema elettrico / Wiring diagram / Elektrische Schaltbilder / Schema électrique:



IT Fig 1..9: Schemi di collegamento riferiti ai vari modelli, vedasi tabella pagina seguente (colonna "schema elet.").  
 SENS = sensore passivo (vedi tabella)  
 Per i modelli con uscite 0..10 V (Fig. da 1 a 8):  
 RL > 10000 ohm con RL resistenza di carico applicata in uscita

EN Fig 1..9: Wiring diagrams corresponding to the different models, see schedule on the following page (column called "Elect. wirings").  
 SENS = passive sensor (see schedule)  
 For versions with 0..10 V outputs (Fig. from 1 to 8):  
 RL > 10000 ohm with RL: load resistance applied on output

DE Abb. 1..9: Auf die verschiedenen Modelle bezogene Schaltpläne, siehe Tabelle auf der nächsten Seite (siehe Spalte "Anschlussbild").  
 SENS = Widerstand Fühler (siehe Tabelle)  
 Für modelle mit ausgänge 0..10 V (Fig. von 1 bis 8):  
 RL > 10000 ohm mit RL Ausgangswiderstand verbinden

FR Fig 1..9: Schémas de raccordement correspondants aux différents modèles, voir tableau page suivante (colonne intitulée "Schémas élec.").  
 SENS = senseur passif (voir tableau)  
 Pour les modèles avec sorties 0..10 V (Fig. de 1 à 8):  
 RL > 10000 ohm avec RL résistance de charge appliquée en sortie

| Tipo<br>Type<br>Typ<br>Type | Descrizione<br>Description<br>Beschreibung<br>Description | Display | Uscite<br>Outputs<br>Ausgänge<br>Sorties | Precisione<br>Accuracy<br>Genauigkeit<br>Précision | Schema elet.<br>Elect. wirings<br>Anschlussbild<br>Schémas élec. |
|-----------------------------|---|---------|--|--|--|
| TTA                         | T   | -       | 0...10 V                                 | ± 0,4  | Fig.1  |
| TTA-D                       | T   | ✓       | 0...10 V                                 | ± 0,4  | Fig.1  |
| TTA-M                       | T   | -       | Modbus                                   | ± 0,2  | Fig.9  |
| TTA-D-M                     | T   | ✓       | Modbus                                   | ± 0,2  | Fig.9  |
| TCO2A                       | CO <sub>2</sub> + T                                       | -       | 0...10 V + 0...10 V                      | ± 0,4  | Fig.2  |
| TCO2A-PT100                 | CO <sub>2</sub> + PT100, 100 Ohm/0°C                      | -       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-PT1000                | CO <sub>2</sub> + PT1000, 1000 Ohm/0°C                    | -       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-NTC1.8                | CO <sub>2</sub> + NTC 1.8, 1800 Ohm/25°C                  | -       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-NTC2.2                | CO <sub>2</sub> + NTC 2.2k3A1, 2252 Ohm/25°C              | -       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-NTC10-01              | CO <sub>2</sub> + NTC 10k3A1, 10kOhm/25°C                 | -       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-NTC10-02              | CO <sub>2</sub> + NTC 10k, 10kOhm/25°C                    | -       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-NTC10-03              | CO <sub>2</sub> + NTC 10k4A1, 10kOhm/25°C                 | -       | 0...10 V + ohm                           | ± 0,25   | Fig.3  |
| TCO2A-NTC20                 | CO <sub>2</sub> + NTC 20k6A1, 20kOhm/25°C                 | -       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-NI1000-01             | CO <sub>2</sub> + Ni1000, 1000 Ohm/0°C                    | -       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-NI1000-02             | CO <sub>2</sub> + Ni1000, 1000 Ohm/0°C                    | -       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-D                     | CO <sub>2</sub> + T                                       | ✓       | 0...10 V + 0...10 V                      | ± 0,4  | Fig.2  |
| TCO2A-D-PT100               | CO <sub>2</sub> + PT100, 100 Ohm/0°C                      | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-D-PT1000              | CO <sub>2</sub> + PT1000, 1000 Ohm/0°C                    | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-D-NTC1.8              | CO <sub>2</sub> + NTC 1.8, 1800 Ohm/25°C                  | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-D-NTC2.2              | CO <sub>2</sub> + NTC 2.2k3A1, 2252 Ohm/25°C              | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-D-NTC10-01            | CO <sub>2</sub> + NTC 10k3A1, 10kOhm/25°C                 | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-D-NTC10-02            | CO <sub>2</sub> + NTC 10k, 10kOhm/25°C                    | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.3  |
| TCO2A-D-NTC10-03            | CO <sub>2</sub> + NTC 10k4A1, 10kOhm/25°C                 | ✓       | 0...10 V + ohm                           | ± 0,25   | Fig.3  |
| TCO2A-D-NTC20               | CO <sub>2</sub> + NTC 20k6A1, 20kOhm/25°C                 | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.3  |
| TCO2A-D-NI1000-01           | CO <sub>2</sub> + Ni1000, 1000 Ohm/0°C                    | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-D-NI1000-02           | CO <sub>2</sub> + Ni1000, 1000 Ohm/0°C                    | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.3  |
| TCO2A-M                     | CO <sub>2</sub> + T                                       | -       | Modbus                                   | ± 0,2  | Fig.9  |
| TCO2A-D-M                   | CO <sub>2</sub> + T                                       | ✓       | Modbus                                   | ± 0,2  | Fig.9  |
| TCO2AU                      | CO <sub>2</sub> , + H + T                                 | -       | 0...10 V + 0...10 V + 0...10 V           | ± 0,4  | Fig.4  |
| TCO2AU-PT100                | CO <sub>2</sub> , + H + PT100, 100 Ohm/0°C                | -       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |
| TCO2AU-PT1000               | CO <sub>2</sub> , + H + PT1000, 1000 Ohm/0°C              | -       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |
| TCO2AU-NTC1.8               | CO <sub>2</sub> , + H + NTC 1.8, 1800 Ohm/25°C            | -       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-NTC2.2               | CO <sub>2</sub> , + H + NTC 2.2k3A1, 2252 Ohm/25°C        | -       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-NTC10-01             | CO <sub>2</sub> , + H + NTC 10k3A1, 10kOhm/25°C           | -       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-NTC10-02             | CO <sub>2</sub> , + H + NTC 10k, 10kOhm/25°C              | -       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |
| TCO2AU-NTC10-03             | CO <sub>2</sub> , + H + NTC 10k4A1, 10kOhm/25°C           | -       | 0...10 V + 0...10 V + ohm                | ± 0,25   | Fig.5  |
| TCO2AU-NTC20                | CO <sub>2</sub> , + H + NTC 20k6A1, 20kOhm/25°C           | -       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-NI1000-01            | CO <sub>2</sub> , + H + Ni1000, 1000 Ohm/0°C              | -       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-NI1000-02            | CO <sub>2</sub> , + H + Ni1000, 1000 Ohm/0°C              | -       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-D                    | CO <sub>2</sub> , + H + T                                 | ✓       | 0...10 V + 0...10 V + 0...10 V           | ± 0,4  | Fig.4  |
| TCO2AU-D-PT100              | CO <sub>2</sub> , + H + PT100, 100 Ohm/0°C                | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |
| TCO2AU-D-PT1000             | CO <sub>2</sub> , + H + PT1000, 1000 Ohm/0°C              | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |

| Tipo<br>Type<br>Typ<br>Type | Descrizione<br>Description<br>Beschreibung<br>Description | Display | Uscite<br>Outputs<br>Ausgänge<br>Sorties | Precisione<br>Accuracy<br>Genauigkeit<br>Précision | Schema elet.<br>Elect. wirings<br>Anschlussbild<br>Schémas élec. |
|-----------------------------|---|---------|--|--|--|
| TCO2AU-D-NTC1.8             | CO <sub>2</sub> , + H + NTC 1.8, 1800 Ohm/25°C            | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-D-NTC2.2             | CO <sub>2</sub> , + H + NTC 2.2k3A1, 2252 Ohm/25°C        | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-D-NTC10-01           | CO <sub>2</sub> , + H + NTC 10k3A1, 10kOhm/25°C           | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-D-NTC10-02           | CO <sub>2</sub> , + H + NTC 10k, 10kOhm/25°C              | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,3  | Fig.5  |
| TCO2AU-D-NTC10-03           | CO <sub>2</sub> , + H + NTC 10k4A1, 10kOhm/25°C           | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,25   | Fig.5  |
| TCO2AU-D-NTC20              | CO <sub>2</sub> , + H + NTC 20k6A1, 20kOhm/25°C           | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,2  | Fig.5  |
| TCO2AU-D-NI1000-01          | CO <sub>2</sub> , + H + Ni1000, 1000 Ohm/0°C              | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-D-NI1000-02          | CO <sub>2</sub> , + H + Ni1000, 1000 Ohm/0°C              | ✓       | 0...10 V + 0...10 V + ohm                | ± 0,5  | Fig.5  |
| TCO2AU-M                    | CO <sub>2</sub> , + H + T                                 | -       | Modbus                                   | ± 0,2  | Fig.9  |
| TCO2AU-D-M                  | CO <sub>2</sub> , + H + T                                 | ✓       | Modbus                                   | ± 0,2  | Fig.9  |
| TUA                         | H   | -       | 0...10 V                                 | -  | Fig.6  |
| TUA-D                       | H   | ✓       | 0...10 V                                 | -  | Fig.6  |
| TUA-M                       | H   | -       | Modbus                                   | -  | Fig.9  |
| TUA-D-M                     | H   | ✓       | Modbus                                   | -  | Fig.9  |
| TTUA                        | H + T   | -       | 0...10 V + 0...10 V                      | ± 0,4  | Fig.7  |
| TTUA-PT100                  | H + PT100, 100 Ohm/0°C                                    | -       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-PT1000                 | H + PT1000, 1000 Ohm/0°C                                  | -       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-NTC1.8                 | H + NTC 1.8, 1800 Ohm/25°C                                | -       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-NTC2.2                 | H + NTC 2.2k3A1, 2252 Ohm/25°C                            | -       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-NTC10-01               | H + NTC 10k3A1, 10kOhm/25°C                               | -       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-NTC10-02               | H + NTC 10k, 10kOhm/25°C                                  | -       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-NTC10-03               | H + NTC 10k4A1, 10kOhm/25°C                               | -       | 0...10 V + ohm                           | ± 0,25   | Fig.8  |
| TTUA-NTC20                  | H + NTC 20k6A1, 20kOhm/25°C                               | -       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-NI1000-01              | H + Ni1000, 1000 Ohm/0°C                                  | -       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-NI1000-02              | H + Ni1000, 1000 Ohm/0°C                                  | -       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-D                      | H + T   | ✓       | 0...10 V + 0...10 V                      | ± 0,4  | Fig.7  |
| TTUA-D-PT100                | H + PT100, 100 Ohm/0°C                                    | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-D-PT1000               | H + PT1000, 1000 Ohm/0°C                                  | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-D-NTC1.8               | H + NTC 1.8, 1800 Ohm/25°C                                | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-D-NTC2.2               | H + NTC 2.2k3A1, 2252 Ohm/25°C                            | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-D-NTC10-01             | H + NTC 10k3A1, 10kOhm/25°C                               | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-D-NTC10-02             | H + NTC 10k, 10kOhm/25°C                                  | ✓       | 0...10 V + ohm                           | ± 0,3  | Fig.8  |
| TTUA-D-NTC10-03             | H + NTC 10k4A1, 10kOhm/25°C                               | ✓       | 0...10 V + ohm                           | ± 0,25   | Fig.8  |
| TTUA-D-NTC20                | H + NTC 20k6A1, 20kOhm/25°C                               | ✓       | 0...10 V + ohm                           | ± 0,2  | Fig.8  |
| TTUA-D-NI1000-01            | H + Ni1000, 1000 Ohm/0°C                                  | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-D-NI1000-02            | H + Ni1000, 1000 Ohm/0°C                                  | ✓       | 0...10 V + ohm                           | ± 0,5  | Fig.8  |
| TTUA-M                      | H + T   | -       | Modbus                                   | ± 0,2  | Fig.9  |
| TTUA-D-M                    | H + T   | ✓       | Modbus                                   | ± 0,2  | Fig.9  |

## IT

### Versioni con uscita Modbus

Il trasmettitore implementa un protocollo di comunicazione di tipo Modbus Slave e può comunicare a distanza con un'unità Modbus Master.

Tutti i parametri e variabili sono accessibili come holding register e le operazioni di lettura e scrittura devono essere fatte con opportuni function code (FC=03, 06, 16). Scegliere opportunamente il timeout tra una lettura e l'altra, considerando la baudrate.

Il timeout minimo di un secondo è sufficiente per le baudrate 38400, 19200 e 9600. Per le altre baudrate aumentare il timeout (2 s per baudrate 4800).

Impostazioni da fabbrica:  
Baud rate = 19200 bit/s;  
Parità = pari,  
Indirizzo apparecchio = 1.

Per modificare questi valori, vedere tabelle Baud rate, Parità e Indirizzo. La linea RS485-MODBUS ha un bus principale lungo il quale sono connessi direttamente gli apparecchi (max 32 apparecchi).

Usare cavi con una coppia intrecciata + 1 filo per la massa + schermo. Usare la coppia intrecciata per collegare A+ e B- ed il filo singolo per il GND che deve essere collegato ad ogni apparecchio.

Collegare lo schermo alla terra su un punto unico del cavo possibilmente vicino al Master.

Il tipo di cavo deve rispettare le caratteristiche previste per la trasmissione di dati su protocollo MODBUS RS485.

Le due estremità del bus devono essere collegate con una resistenza di terminazione da 120 ohm.

Per inserire la resistenza da 120 ohm sul trasmettitore (JP3), vedere Fig. 10.

La lunghezza massima del bus dipende dalla baud rate e dal cavo.

Per una baud rate di 9600, la lunghezza massima del cavo può raggiungere 1000 m con un cavo AVG26.

Le derivazioni qual'ora dovessero essere utilizzate devono essere corte, non devono oltrepassare 20 m. Con un multi-port tap usato per n derivazioni, ogni derivazione deve avere una lunghezza massima di 40 m diviso per n.

Per aumentare il numero di apparecchi collegati alla linea o per aumentare la lunghezza dei cavi, è necessario collegare un ripetitore di segnale. Aggiungere un ripetitore di segnale per ogni gruppo di 32 apparecchi collegati.

## EN

### Versions with Modbus output

The regulator implements the Modbus Slave protocol and can communicate remotely with a Modbus Master unit.

All parameters and variables are accessible as holding registers and R/W operations are implemented with function codes (FC=03, 06, 16). Select a suitable timeout between readings, in relation to the baudrate. A minimum timeout of one second is suitable for 19200 and 9600 baud. For other baudrates, increase the timeout value (2 s for 4800 baud).

Factory settings:  
Baud rate = 19200 bit/s;  
Parity = even,  
Address of unit = 1.

To modify these values, see schedules Baud rate, Parity and Address. The RS485-MODBUS line has a principal bus to which the various devices are connected (max 32 devices).

Use cables with a braided pair + 1 ground wire + shield.

Use the braided pair to connect A+ and B- and the single wire for GND which must be connected to each device.

Connect the shield to ground at a single point, preferably near the master.

The cable must be of the MODBUS RS485 data transmission type.

The ends of the cable must be connected with a 120 ohm termination resistance.

To fit the 120 ohm to the transmitter (JP3), see Fig. 10.

The maximum length of the bus depends on the baudrate and the cable itself.

For a baudrate of 9600, the cable (AVG26 type) can be up to 1000 m long.

Any branch lines must be short, not more than 20 m long. If you use a multi-port tap for n branches, each branch can be up to 40 m divided by n.

To increase the number of devices on the line or increase the length of the cables, you must install a signal repeater.

Add a signal repeater for every group of 32 connected devices.

## DE

### Versionen mit Modbus Ausgang

Der Regler umfasst ein Kommunikationsprotokoll vom Typ Slave-Modbus und kann auf Distanz mit einer Master-Modbus-Einheit kommunizieren.

Alle Parameter und Variablen sind als Holding-Register zugänglich und die Lese- und Schreibvorgänge müssen mit passenden function codes (FC=03, 06, 16) ausgeführt werden.

Die Zeitüberschreitung zwischen einem Lesevorgang und dem nächsten günstig wählen und die Baudrate beachten.

Die Mindest-Baudrate von einer Sekunde ist ausreichend für die Baudraten 19200 und 9600. Für die anderen Baudraten die Zeitüberschreitung erhöhen (2 Sek. für Baudrate 4800).

Werkseinstellungen:  
Baud rate = 19200 bit/s;  
Parität = gerade,  
Geräteadresse = 1.

Um diese Werte zu ändern, siehe Tabellen Baudrate, Parität und Adresse.

Die Linie RS485-MODBUS hat einen Hauptbus, an den die Geräte (max. 32 Apparate) direkt angeschlossen sind.

Twisted-Pair-Kabel verwenden, um A+ und B- anzuschließen und ein einzelnes Kabel für GND, die mit jedem Gerät verbunden werden muss.

Den Bildschirm an der Erdung an einem einzigen Punkt des Kabels, möglichst nah am Master, anschließen.

Der Kabeltyp muss die von der Datenübertragung über MODBUS-RS485-Protokoll vorgesehenen Anforderungen erfüllen.

Die beiden Busenden müssen an einen Abschlusswiderstand von 120 Ohm angeschlossen werden.

Um den Widerstand von 120 Ohm auf dem Messumformer (JP3) einzufügen, siehe Fig. 10.

Die maximale Länge des Bus hängt von der Baudrate und vom Kabel ab. Für eine Baudrate von 9600, kann die maximale Länge des Kabels 1000 m mit einem AVG26-Kabel betragen.

Die eventuell verwendeten Abzweigungen müssen kurz sein und dürfen 20 m nicht überschreiten. Mit einem Multi-Port-Tap für n Abzweigungen, darf jede Abzweigung eine maximale Länge von 40 m mal n haben.

Um die Anzahl der an die Leitung angeschlossenen Apparate zu erhöhen oder um die Länge der Kabel zu erhöhen, muss ein Signalverstärker angeschlossen werden.

Fügen Sie einen Signalverstärker für jede Gruppe von 32 angeschlossene Apparate.

## FR

### Versions avec sortie Modbus

Le régulateur est doté d'un protocole de communication de type Modbus Esclave et peut communiquer à distance avec une unité Modbus Master.

Tous les paramètres et toutes les variables sont accessibles comme holding register et les opérations de lecture (R) et d'écriture (W) doivent être réalisées à l'aide de codes de fonction adéquats (FC=03, 06, 16).

Choisir opportunément le délai entre une lecture et l'autre, en tenant compte du taux de transfert.

Le délai minimal d'une seconde est suffisant pour les taux de transfert de 19200 et 9600. Pour les autres taux de transfert, il faut augmenter le délai (2 s pour un taux de transfert de 4800).

Réglage d'usine:  
Baud rate = 19200 bit/s;  
Parité = paire,  
Adresse transmetteur = 1.

Pour modifier ces valeurs, voir tableaux Baud rate, Parité et Adresse. La ligne RS485-MODBUS a un bus principal le long duquel sont connectés directement les appareils (maxi 32 appareils).

Utiliser des câbles avec une paire tressée + 1 fil pour la masse + blindage.

Utiliser la paire tressée pour connecter A+ et B- et le fil seul pour la masse (GND) qui doit être connectée à chaque appareil.

Connecter le blindage à la terre sur un point unique du câble si possible près du Master.

Le type de câble doit respecter les caractéristiques prévues pour la transmission de données sur protocole MODBUS RS485.

Les deux extrémités du bus doivent être connectées sur une résistance de terminaison de 120 ohms.

Pour insérer la résistance de 120 ohms sur le transmetteur (JP3), voir Fig. 10.

La longueur maximale du bus dépend du taux de transfert et du câble. Pour un taux de transfert de 9600, la longueur maximale du câble peut atteindre 1000 m avec un câble AVG26.

Au cas où des dérivations devraient être utilisées, elles devront être courtes et ne pas dépasser 20 m. Avec une prise multi-port utilisée pour n dérivation, chaque dérivation doit avoir une longueur maximale de 40 m divisée par n.

Pour augmenter le nombre d'appareils connectés à la ligne ou pour augmenter la longueur des câbles, il est nécessaire de connecter un répéteur de signal.

Ajouter un répéteur de signal pour chaque groupe de 32 appareils connectés.

| Indirizzo<br>Address<br>Adresse<br>Adresse | Descrizione<br>Description<br>Beschreibung<br>Description  | Nota<br>Note<br>Anmerkung<br>Note | Min         | Max            | R/W |
|--|--|-----------------------------------|-------------|----------------|-----|
| 4000                                       | Umidità / Humidity / Feuchtigkeit / Humidité   | *                                 | 0           | 1000           | R   |
| 4001                                       | Temperatura / Temperature / Temperatur / Température   | *                                 | 0°C [320°F] | 500°C [1220°F] | R   |
| 4002                                       | CO <sub>2</sub>  | *                                 | 0           | 2000           | R   |
| 4024                                       | Correzione Umidità / Humidity correction / Feuchtigkeit / Correction humidité                                    | **                                | -100        | +100           | R/W |
| 4025                                       | Correzione Temperatura / Temperature correction / Temperatur / Correction température                            | **                                | -90         | +90            | R/W |
| 4026                                       | Correzione CO <sub>2</sub> / CO <sub>2</sub> correction / CO <sub>2</sub> Korrektur / Correction CO <sub>2</sub> | **                                | -200        | +200           | R/W |

Nota \*: I valori di temperatura e umidità sono visualizzati moltiplicati per 10 (esempio: valore letto sul trasmettitore = 21.3°C → valore letto in Modbus = 213).

Note \*: the visualised value for temperature and humidity are multiplied per 10 (example: value read by transmitter = 21.3°C → value read by Modbus = 213)

Anmerkung \*: der Angezeigte Wert entspricht dem Voltwert multipliziert mit 10 (Beispiel: gelesene Wert des Trasmitters = 21.3°C → gelesene Wert im Modbus = 213)

Note \*: la valeur visualisée pour la température et l'humidité correspond à la valeur indiquée multipliée par 10 (exemple: valeur lue par le transmetteur = 21.3°C → valeur lue par le Modbus = 213)

Nota \*\*: Il parametro è sommato al valore rilevato dal sensore

Note \*\*: The parameter is added to the sensor value

Anmerkung \*\*: Der Parameter wird auf den aufnehmende Sensor Wert addiert

Note \*\*: Le paramètre est additionnée à la valeur du senseur

In caso di sonda guasta, la temperatura visualizzata corrisponde a quella indicata in tabella:

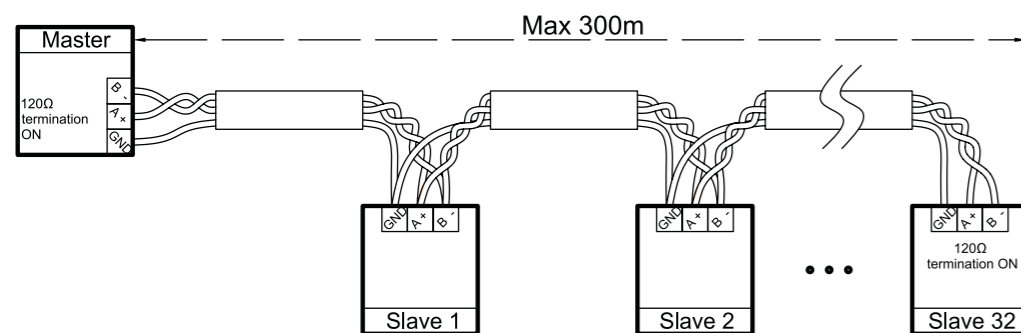
If sensor is broken, the temperature visualized corresponds to values indicated on the table below:

Im Falle das die Sonde defekt ist, entspricht die angezeigte Temperatur der nachstehenden Tabelle:

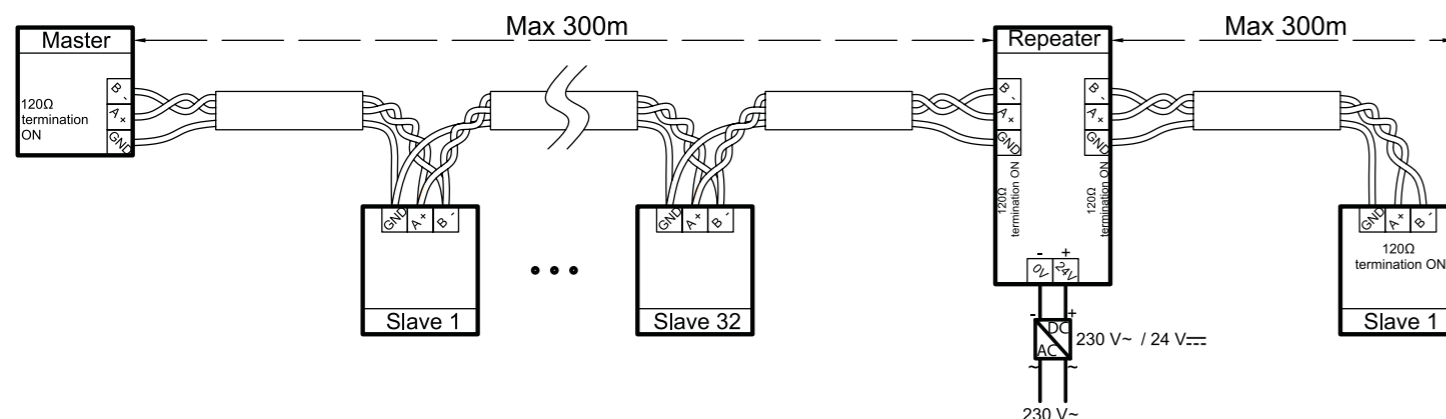
Au cas où la sonde est défectueuse, la température visualisée correspond à celle qui est indiquée dans le tableau ci-dessous:

| Sonda rotta<br>Broken sensor<br>Fehlerhafte Sonde<br>Sonde en erreur | Valore letto Modbus<br>Value read Modbus<br>Gelesener Wert Modbus<br>Valeur lue Modbus | Valore corrispondente<br>Correspondent value<br>Entsprechender Wert<br>Valeur correspondante |
|--|--|--|
| Umidità / Humidity / Feuchtigkeit / Humidité                         | 0  | 0  |
| Temperatura / Temperature / Temperatur / Température                 | -20 °C [284 °F]  | -2.0°C [28.4 °F]   |
| CO <sub>2</sub>  | 0  | 0  |

### Collegamento senza ripetitore / Connection without repeater / Anschluss ohne Verstärker / Connexion sans répéteur:



### Collegamento con ripetitore / Connection with repeater / Anschluss mit Verstärker / Connexion avec répéteur:



|                  |     |     |
|------------------|-----|-----|
| <b>Baud rate</b> |     |     |
|                  | 11  | 12  |
| 38400            | ON  | ON  |
| 19200            | OFF | OFF |
| 9600             | ON  | OFF |
| 4800             | OFF | ON  |

|   |     |     |
|---|-----|-----|
| <b>Parità<br/>Parity<br/>Parität<br/>Parité</b> |     |     |
|   | 9   | 10  |
| Pari / Even / Gerade / Paire (1 stop bit)       | OFF | OFF |
| Nessuna / None / Keine / Sans (2 stop bit)      | ON  | OFF |
| Dispari / Odd / Ungerade / Impaire (1 stop bit) | OFF | ON  |
| Nessuna / None / Keine / Sans (2 stop bit)      | ON  | ON  |

|  |     |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Indirizzo<br/>Address<br/>Adresse<br/>Adresse</b> |     |     |     |     |     |     |     |     |
|  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| 1  | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 1  | ON  | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 2  | OFF | ON  | OFF | OFF | OFF | OFF | OFF | OFF |
| 3  | ON  | ON  | OFF | OFF | OFF | OFF | OFF | OFF |
| 4  | OFF | OFF | ON  | OFF | OFF | OFF | OFF | OFF |
| 5  | ON  | OFF | ON  | OFF | OFF | OFF | OFF | OFF |
| 6  | OFF | ON  | ON  | OFF | OFF | OFF | OFF | OFF |
| 7  | ON  | ON  | ON  | OFF | OFF | OFF | OFF | OFF |
| 8  | OFF | OFF | OFF | ON  | OFF | OFF | OFF | OFF |
| 9  | ON  | OFF | OFF | ON  | OFF | OFF | OFF | OFF |
| 10   | OFF | ON  | OFF | ON  | OFF | OFF | OFF | OFF |
| 11   | ON  | ON  | OFF | ON  | OFF | OFF | OFF | OFF |
| 12   | OFF | OFF | ON  | ON  | OFF | OFF | OFF | OFF |
| 13   | ON  | OFF | ON  | ON  | OFF | OFF | OFF | OFF |
| 14   | OFF | ON  | ON  | ON  | OFF | OFF | OFF | OFF |
| 15   | ON  | ON  | ON  | ON  | OFF | OFF | OFF | OFF |
| 16   | OFF | OFF | OFF | OFF | ON  | OFF | OFF | OFF |
| 17   | ON  | OFF | OFF | OFF | ON  | OFF | OFF | OFF |
| 18   | OFF | ON  | OFF | OFF | ON  | OFF | OFF | OFF |
| 19   | ON  | ON  | OFF | OFF | ON  | OFF | OFF | OFF |
| 20   | OFF | OFF | ON  | OFF | ON  | OFF | OFF | OFF |
| 21   | ON  | OFF | ON  | OFF | ON  | OFF | OFF | OFF |
| 22   | OFF | ON  | ON  | OFF | ON  | OFF | OFF | OFF |
| 23   | ON  | ON  | ON  | OFF | ON  | OFF | OFF | OFF |
| 24   | OFF | OFF | OFF | ON  | ON  | OFF | OFF | OFF |
| 25   | ON  | OFF | OFF | ON  | ON  | OFF | OFF | OFF |
| 26   | OFF | ON  | OFF | ON  | ON  | OFF | OFF | OFF |
| 27   | ON  | ON  | OFF | ON  | ON  | OFF | OFF | OFF |
| 28   | OFF | OFF | ON  | ON  | ON  | OFF | OFF | OFF |
| 29   | ON  | OFF | ON  | ON  | ON  | OFF | OFF | OFF |
| 30   | OFF | ON  | ON  | ON  | ON  | OFF | OFF | OFF |
| 31   | ON  | ON  | ON  | ON  | ON  | OFF | OFF | OFF |
| 32   | OFF | OFF | OFF | OFF | OFF | ON  | OFF | OFF |
| 33   | ON  | OFF | OFF | OFF | OFF | ON  | OFF | OFF |
| 34   | OFF | ON  | OFF | OFF | OFF | ON  | OFF | OFF |
| 35   | ON  | ON  | OFF | OFF | OFF | ON  | OFF | OFF |
| 36   | OFF | OFF | ON  | OFF | OFF | ON  | OFF | OFF |
| 37   | ON  | OFF | ON  | OFF | OFF | ON  | OFF | OFF |
| 38   | OFF | ON  | ON  | OFF | OFF | ON  | OFF | OFF |

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| <b>Indirizzo<br/>Address<br/>Adresse<br/>Adresse</b> |     |     |     |     |     |     |     |     |
|  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| 39   | ON  | ON  | ON  | OFF | OFF | ON  | OFF | OFF |
| 40   | OFF | OFF | OFF | ON  | OFF | ON  | OFF | OFF |
| 41   | ON  | OFF | OFF | ON  | OFF | ON  | OFF | OFF |
| 42   | OFF | ON  | OFF | ON  | OFF | ON  | OFF | OFF |
| 43   | ON  | ON  | OFF | ON  | OFF | ON  | OFF | OFF |
| 44   | OFF | OFF | ON  | ON  | OFF | ON  | OFF | OFF |
| 45   | ON  | OFF | ON  | ON  | OFF | ON  | OFF | OFF |
| 46   | OFF | ON  | ON  | ON  | OFF | ON  | OFF | OFF |
| 47   | ON  | ON  | ON  | ON  | OFF | ON  | OFF | OFF |
| 48   | OFF | OFF | OFF | OFF | ON  | ON  | OFF | OFF |
| 49   | ON  | OFF | OFF | OFF | ON  | ON  | OFF | OFF |
| 50   | OFF | ON  | OFF | OFF | ON  | ON  | OFF | OFF |
| 51   | ON  | ON  | OFF | OFF | ON  | ON  | OFF | OFF |
| 52   | OFF | OFF | ON  | OFF | ON  | ON  | OFF | OFF |
| 53   | ON  | OFF | ON  | OFF | ON  | ON  | OFF | OFF |
| 54   | OFF | ON  | ON  | OFF | ON  | ON  | OFF | OFF |
| 55   | ON  | ON  | ON  | OFF | ON  | ON  | OFF | OFF |
| 56   | OFF | OFF | OFF | ON  | ON  | ON  | OFF | OFF |
| 57   | ON  | OFF | OFF | ON  | ON  | ON  | OFF | OFF |
| 58   | OFF | ON  | OFF | ON  | ON  | ON  | OFF | OFF |
| 59   | ON  | ON  | OFF | ON  | ON  | ON  | OFF | OFF |
| 60   | OFF | OFF | ON  | ON  | ON  | ON  | OFF | OFF |
| 61   | ON  | OFF | ON  | ON  | ON  | ON  | OFF | OFF |
| 62   | OFF | ON  | ON  | ON  | ON  | ON  | OFF | OFF |
| 63   | ON  | ON  | ON  | ON  | ON  | ON  | OFF | OFF |
| 64   | OFF | OFF | OFF | OFF | OFF | OFF | ON  | OFF |
| 65   | ON  | OFF | OFF | OFF | OFF | OFF | ON  | OFF |
| 66   | OFF | ON  | OFF | OFF | OFF | OFF | ON  | OFF |
| 67   | ON  | ON  | OFF | OFF | OFF | OFF | ON  | OFF |
| 68   | OFF | OFF | ON  | OFF | OFF | OFF | ON  | OFF |
| 69   | ON  | OFF | ON  | OFF | OFF | OFF | ON  | OFF |
| 70   | OFF | ON  | ON  | OFF | OFF | OFF | ON  | OFF |
| 71   | ON  | ON  | ON  | OFF | OFF | OFF | ON  | OFF |
| 72   | OFF | OFF | OFF | ON  | OFF | OFF | ON  | OFF |
| 73   | ON  | OFF | OFF | ON  | OFF | OFF | ON  | OFF |
| 74   | OFF | ON  | OFF | ON  | OFF | OFF | ON  | OFF |
| 75   | ON  | ON  | OFF | ON  | OFF | OFF | ON  | OFF |
| 76   | OFF | OFF | ON  | ON  | OFF | OFF | ON  | OFF |
| 77   | ON  | OFF | ON  | ON  | OFF | OFF | ON  | OFF |
| 78   | OFF | ON  | ON  | ON  | OFF | OFF | ON  | OFF |
| 79   | ON  | ON  | ON  | ON  | OFF | OFF | ON  | OFF |
| 80   | OFF | OFF | OFF | OFF | ON  | OFF | ON  | OFF |
| 81   | ON  | OFF | OFF | OFF | ON  | OFF | ON  | OFF |
| 82   | OFF | ON  | OFF | OFF | ON  | OFF | ON  | OFF |
| 83   | ON  | ON  | OFF | OFF | ON  | OFF | ON  | OFF |
| 84   | OFF | OFF | ON  | OFF | ON  | OFF | ON  | OFF |
| 85   | ON  | OFF | ON  | OFF | ON  | OFF | ON  | OFF |
| 86   | OFF | ON  | ON  | OFF | ON  | OFF | ON  | OFF |
| 87   | ON  | ON  | ON  | OFF | ON  | OFF | ON  | OFF |
| 88   | OFF | OFF | OFF | ON  | ON  | OFF | ON  | OFF |
| 89   | ON  | OFF | OFF | ON  | ON  | OFF | ON  | OFF |
| 90   | OFF | ON  | OFF | ON  | ON  | OFF | ON  | OFF |
| 91   | ON  | ON  | OFF | ON  | ON  | OFF | ON  | OFF |
| 92   | OFF | OFF | ON  | ON  | ON  | OFF | ON  | OFF |
| 93   | ON  | OFF | ON  | ON  | ON  | OFF | ON  | OFF |

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| <b>Indirizzo<br/>Address<br/>Adresse<br/>Adresse</b> |     |     |     |     |     |     |     |     |
|  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| 94   | OFF | ON  | ON  | ON  | ON  | OFF | ON  | OFF |
| 95   | ON  | ON  | ON  | ON  | ON  | OFF | ON  | OFF |
| 96   | OFF | OFF | OFF | OFF | OFF | ON  | ON  | OFF |
| 97   | ON  | OFF | OFF | OFF | OFF | ON  | ON  | OFF |
| 98   | OFF | ON  | OFF | OFF | OFF | ON  | ON  | OFF |
| 99   | ON  | ON  | OFF | OFF | OFF | ON  | ON  | OFF |
| 100  | OFF | OFF | ON  | OFF | OFF | ON  | ON  | OFF |
| 101  | ON  | OFF | ON  | OFF | OFF | ON  | ON  | OFF |
| 102  | OFF | ON  | ON  | OFF | OFF | ON  | ON  | OFF |
| 103  | ON  | ON  | ON  | OFF | OFF | ON  | ON  | OFF |
| 104  | OFF | OFF | OFF | ON  | OFF | ON  | ON  | OFF |
| 105  | ON  | OFF | OFF | ON  | OFF | ON  | ON  | OFF |
| 106  | OFF | ON  | OFF | ON  | OFF | ON  | ON  | OFF |
| 107  | ON  | ON  | OFF | ON  | OFF | ON  | ON  | OFF |
| 108  | OFF | OFF | ON  | ON  | OFF | ON  | ON  | OFF |
| 109  | ON  | OFF | ON  | ON  | OFF | ON  | ON  | OFF |
| 110  | OFF | ON  | ON  | ON  | OFF | ON  | ON  | OFF |
| 111  | ON  | ON  | ON  | ON  | OFF | ON  | ON  | OFF |
| 112  | OFF | OFF | OFF | OFF | ON  | ON  | ON  | OFF |
| 113  | ON  | OFF | OFF | OFF | ON  | ON  | ON  | OFF |
| 114  | OFF | ON  | OFF | OFF | ON  | ON  | ON  | OFF |
| 115  | ON  | ON  | OFF | OFF | ON  | ON  | ON  | OFF |
| 116  | OFF | OFF | ON  | OFF | ON  | ON  | ON  | OFF |
| 117  | ON  | OFF | ON  | OFF | ON  | ON  | ON  | OFF |
| 118  | OFF | ON  | ON  | OFF | ON  | ON  | ON  | OFF |
| 119  | ON  | ON  | ON  | OFF | ON  | ON  | ON  | OFF |
| 120  | OFF | OFF | OFF | ON  | ON  | ON  | ON  | OFF |
| 121  | ON  | OFF | OFF | ON  | ON  | ON  | ON  | OFF |
| 122  | OFF | ON  | OFF | ON  | ON  | ON  | ON  | OFF |
| 123  | ON  | ON  | OFF | ON  | ON  | ON  | ON  | OFF |
| 124  | OFF | OFF | ON  | ON  | ON  | ON  | ON  | OFF |
| 125  | ON  | OFF | ON  | ON  | ON  | ON  | ON  | OFF |
| 126  | OFF | ON  | ON  | ON  | ON  | ON  | ON  | OFF |
| 127  | ON  | ON  | ON  | ON  | ON  | ON  | ON  | OFF |
| 128  | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON  |
| 129  | ON  | OFF | OFF | OFF | OFF | OFF | OFF | ON  |
| 130  | OFF | ON  | OFF | OFF | OFF | OFF | OFF | ON  |
| 131  | ON  | ON  | OFF | OFF | OFF | OFF | OFF | ON  |
| 132  | OFF | OFF | ON  | OFF | OFF | OFF | OFF | ON  |
| 133  | ON  | OFF | ON  | OFF | OFF | OFF | OFF | ON  |
| 134  | OFF | ON  | ON  | OFF | OFF | OFF | OFF | ON  |
| 135  | ON  | ON  | ON  | OFF | OFF | OFF | OFF | ON  |
| 136  | OFF | OFF | OFF | ON  | OFF | OFF | OFF | ON  |
| 137  | ON  | OFF | OFF | ON  | OFF | OFF | OFF | ON  |
| 138  | OFF | ON  | OFF | ON  | OFF | OFF | OFF | ON  |
| 139  | ON  | ON  | OFF | ON  | OFF | OFF | OFF | ON  |
| 140  | OFF | OFF | ON  | ON  | OFF | OFF | OFF | ON  |
| 141  | ON  | OFF | ON  | ON  | OFF | OFF | OFF | ON  |
| 142  | OFF | ON  | ON  | ON  | OFF | OFF | OFF | ON  |
| 143  | ON  | ON  | ON  | ON  | OFF | OFF | OFF | ON  |
| 144  | OFF | OFF | OFF | OFF | ON  | OFF | OFF | ON  |
| 145  | ON  | OFF | OFF | OFF | ON  | OFF | OFF | ON  |
| 146  | OFF | ON  | OFF | OFF | ON  | OFF | OFF | ON  |
| 147  | ON  | ON  | OFF | OFF | ON  | OFF | OFF | ON  |
| 148  | OFF | OFF | ON  | OFF | ON  | OFF | OFF | ON  |

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|--|-----|-----|-----|-----|-----|-----|-----|----|
| <b>Indirizzo<br/>Address<br/>Adresse<br/>Adresse</b> |     |     |     |     |     |     |     |    |
|  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8  |
| 149  | ON  | OFF | ON  | OFF | ON  | OFF | OFF | ON |
| 150  | OFF | ON  | ON  | OFF | ON  | OFF | OFF | ON |
| 151  | ON  | ON  | ON  | OFF | ON  | OFF | OFF | ON |
| 152  | OFF | OFF | OFF | ON  | ON  | OFF | OFF | ON |
| 153  | ON  | OFF | OFF | ON  | ON  | OFF | OFF | ON |
| 154  | OFF | ON  | OFF | ON  | ON  | OFF | OFF | ON |
| 155  | ON  | ON  | OFF | ON  | ON  | OFF | OFF | ON |
| 156  | OFF | OFF | ON  | ON  | ON  | OFF | OFF | ON |
| 157  | ON  | OFF | ON  | ON  | ON  | OFF | OFF | ON |
| 158  | OFF | ON  | ON  | ON  | ON  | OFF | OFF | ON |
| 159  | ON  | ON  | ON  | ON  | ON  | OFF | OFF | ON |
| 160  | OFF | OFF | OFF | OFF | OFF | ON  | OFF | ON |
| 161  | ON  | OFF | OFF | OFF | OFF | ON  | OFF | ON |
| 162  | OFF | ON  | OFF | OFF | OFF | ON  | OFF | ON |
| 163  | ON  | ON  | OFF | OFF | OFF | ON  | OFF | ON |
| 164  | OFF | OFF | ON  | OFF | OFF | ON  | OFF | ON |
| 165  | ON  | OFF | ON  | OFF | OFF | ON  | OFF | ON |
| 166  | OFF | ON  | ON  | OFF | OFF | ON  | OFF | ON |
| 167  | ON  | ON  | ON  | OFF | OFF | ON  | OFF | ON |
| 168  | OFF | OFF | OFF | ON  | OFF | ON  | OFF | ON |
| 169  | ON  | OFF | OFF | ON  | OFF | ON  | OFF | ON |
| 170  | OFF | ON  | OFF | ON  | OFF | ON  | OFF | ON |
| 171  | ON  | ON  | OFF | ON  | OFF | ON  | OFF | ON |
| 172  | OFF | OFF | ON  | ON  | OFF | ON  | OFF | ON |
| 173  | ON  | OFF | ON  | ON  | OFF | ON  | OFF | ON |
| 174  | OFF | ON  | ON  | ON  | OFF | ON  | OFF | ON |
| 175  | ON  | ON  | ON  | ON  | OFF | ON  | OFF | ON |
| 176  | OFF | OFF | OFF | OFF | ON  | ON  | OFF | ON |
| 177  | ON  | OFF | OFF | OFF | ON  | ON  | OFF | ON |
| 178  | OFF | ON  | OFF | OFF | ON  | ON  | OFF | ON |
| 179  | ON  | ON  | OFF | OFF | ON  | ON  | OFF | ON |
| 180  | OFF | OFF | ON  | OFF | ON  | ON  | OFF | ON |
| 181  | ON  | OFF | ON  | OFF | ON  | ON  | OFF | ON |
| 182  | OFF | ON  | ON  | OFF | ON  | ON  | OFF | ON |
| 183  | ON  | ON  | ON  | OFF | ON  | ON  | OFF | ON |
| 184  | OFF | OFF | OFF | ON  | ON  | ON  | OFF | ON |
| 185  | ON  | OFF | OFF | ON  | ON  | ON  | OFF | ON |
| 186  | OFF |     |     |     |     |     |     |    |

## Display:

**IT** - All'accensione, il display indica per qualche secondo il messaggio "WRT" lampeggiante, poi i valori dei vari sensori in alternanza ogni 5 secondi. Se la temperatura va fuori scala, compare il messaggio "LOWT" ( $T < 2^{\circ}\text{C}$  [ $T < 28.4^{\circ}\text{F}$ ]) o "HGT" ( $T > 52^{\circ}\text{C}$  [ $T > 125.6^{\circ}\text{F}$ ]).

La temperatura può essere visualizzata in  $^{\circ}\text{C}$  o  $^{\circ}\text{F}$  tramite il Jumper JP6.

**EN** - At startup, the display indicates the flashing message "WRT", and then alternates the values of sensors every 5 seconds. If temperature is out of scale, message "LOWT" ( $T < 2^{\circ}\text{C}$  [ $T < 28.4^{\circ}\text{F}$ ]) or "HGT" ( $T > 52^{\circ}\text{C}$  [ $T > 125.6^{\circ}\text{F}$ ]) is indicated. Temperature can be visualized in  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  selecting position of jumper JP6.

**DE** - Beim Einschalten erscheint auf den Display für einige Sekunden die Nachricht "WRT" blinkend, dann wechseln sich die Werte abwechselnd alle 5 Sekunden ab. Sobald die Temperatur den Bereich überschreitet erscheint die Meldung LOWT ( $T < 2^{\circ}\text{C}$  [ $T < 28.4^{\circ}\text{F}$ ]) oder "HGT" ( $T > 52^{\circ}\text{C}$  [ $T > 125.6^{\circ}\text{F}$ ]). Die Temperatur kann durch den Jumper JP6 entweder in  $^{\circ}\text{C}$  oder in  $^{\circ}\text{F}$  angezeigt werden.

**FR** - A la mise sous tension, le display indique "WRT" clignotant, puis les valeurs des senseurs en alternance toutes les 5 secondes. Si la température va au-delà de l'échelle, il apparaît "LOWT" ( $T < 2^{\circ}\text{C}$  [ $T < 28.4^{\circ}\text{F}$ ]) ou "HGT" ( $T > 52^{\circ}\text{C}$  [ $T > 125.6^{\circ}\text{F}$ ]) sur le display.

La température peut être visualisée en  $^{\circ}\text{C}$  ou  $^{\circ}\text{F}$  en utilisant le cavalier JP6.

## Impostazione jumper / Jumper setting / Jumper Einstellung / Réglage des cavaliers:

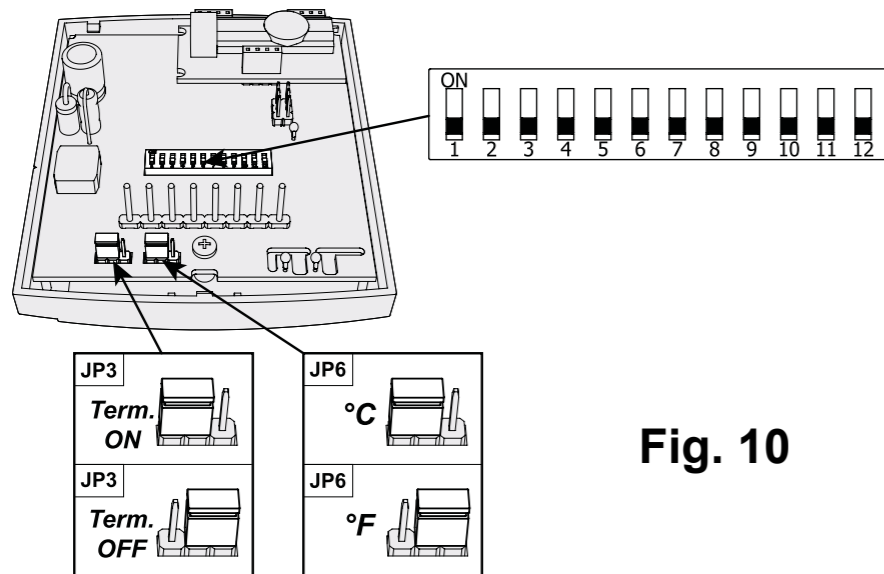
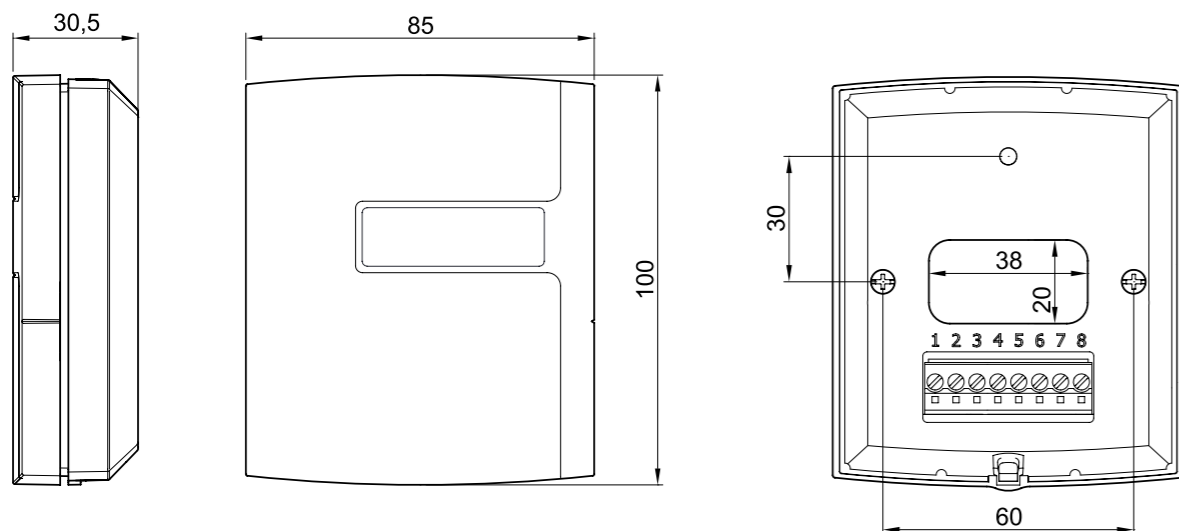


Fig. 10

## Dimensioni / Dimensions / Abmessungen / Dimensions:



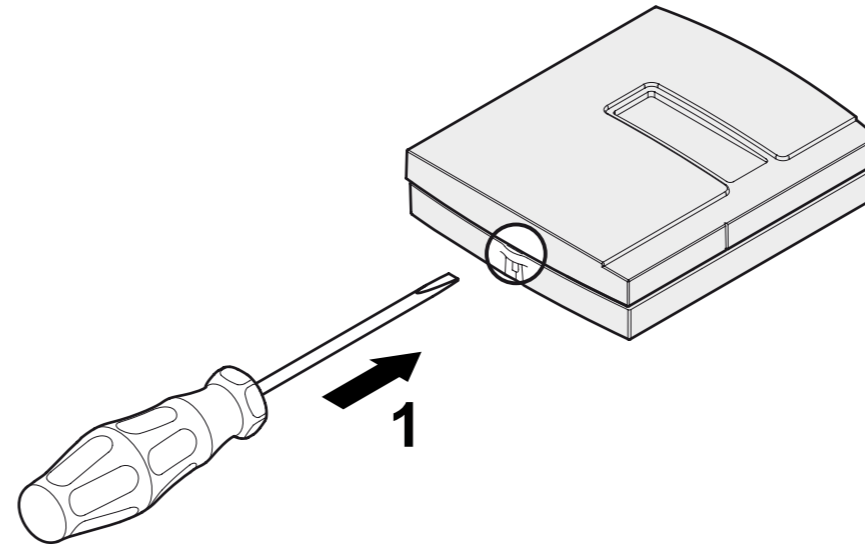
Con riserva di modifiche tecniche senza preavviso.

Subject to change without notice.

Technische Änderungen vorbehalten.

Sous réserve de modifications sans préavis.

## Montaggio / Mounting / Montage / Montage:

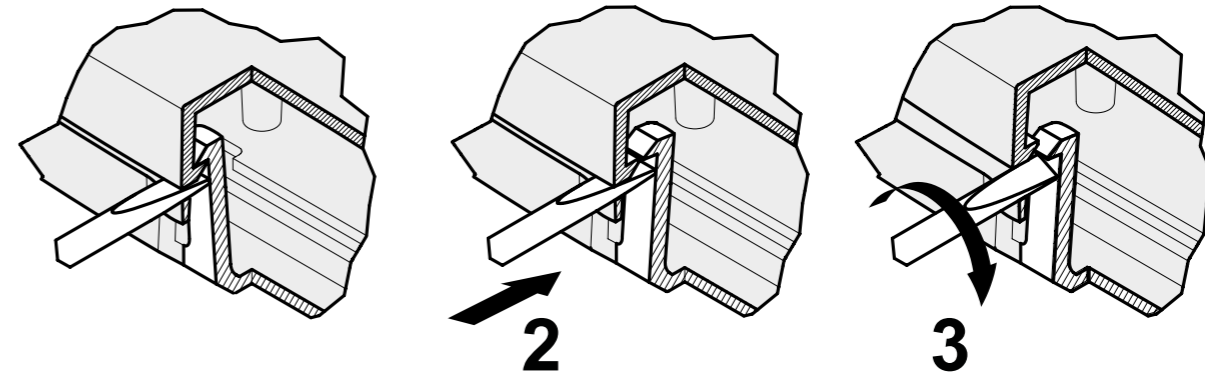


**IT** - Per rimuovere il coperchio, utilizzare un cacciavite a taglio da 3mm per sbloccare la linguetta di bloccaggio del fondale.

**EN** - To remove the front cover, use a 3mm flat-blade screwdriver to depress the locking tongue in the lower part of the casing.

**DE** - Um den Deckel zu entfernen müssen die einen Schlitz Schraubendreher zu 3mm verwenden um den Federkeil zu lösen

**FR** - pour enlever le couvercle, utiliser un tournevis à embout plat de 3mm pour débloquer la languette de blocage du socle.

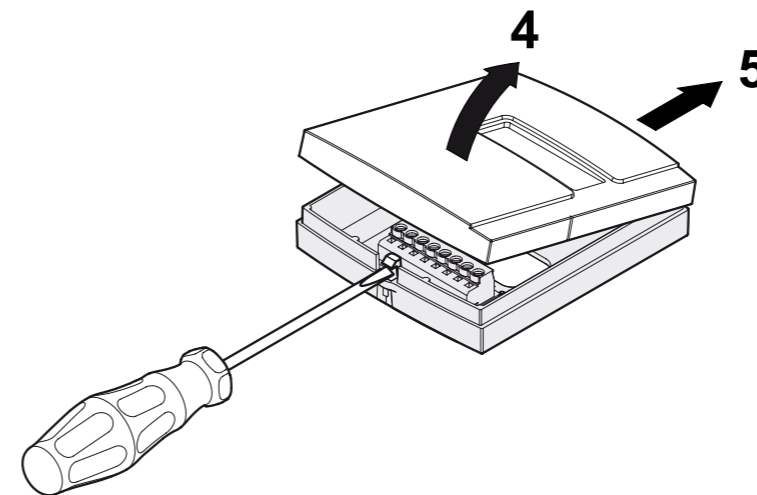


**IT** - Premere e ruotare il cacciavite e allo stesso tempo tirare il coperchio.

**EN** - Press and twist the screwdriver and at the same time pull the bottom part of the front outwards.

**DE** - Den Schraubzieher drücken und drehen und zugleich den Deckel hochziehen

**FR** - Appuyer et tourner le tournevis et tirer le couvercle en même temps

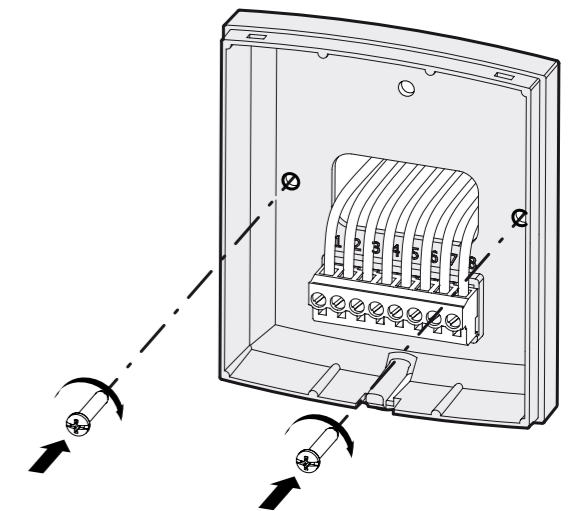


**IT** - Quando la parte inferiore del coperchio è libera, fare scivolare il coperchio come nel punto 5 per liberare le linguette nella parte alta del coperchio.

**EN** - When the bottom end of the front cover is free from the casing bottom part, slide the cover towards the top of the casing to free the hooks holding the upper edge of the front cover.

**DE** - Sobald sich der vordere Teil des Deckels nach oben löst diesen wie Punkt 5 veranschaulicht nach schieben.

**FR** - Lorsque la partie inférieure du couvercle est libre, faire glisser le couvercle comme au point 5 pour libérer les languettes dans la partie haute du couvercle.



**IT** - Eseguire i collegamenti come mostrato negli schemi. Fissare il fondale della scatola al muro.

**EN** - Do the connections according to electrical wiring diagrams. Fix the bottom part of the casing on the wall.

**DE** - Die Verbindungen ausführen wie auf dem Datenblatt veranschaulicht. Das Unterteil des Gehäuses an die Wand anbringen.

**FR** - Effectuer les raccordements électriques comme indiqués sur les schémas. Fixer le socle du boîtier au mur.