



ENGLISH

■ SAFETY PRECAUTIONS

! Read carefully the instruction manual. If the instrument is used in a manner not specified by the producer, the protection provided by the instrument may be impaired.

Maintenance: make sure that the mounting of the extractable modules and the relevant connections are correctly carried out in order to avoid any malfunctioning or damage to the instrument. To keep the instrument clean, use a slightly damp cloth; do not use any abrasives or solvents. We recommend to disconnect the instrument before cleaning it.

■ INSTRUCTIONS

PASS : password. From 0 to 4999, the direct access to the set-points and to the other parameters is completely protected. From 5000 to 9000 the direct access is allowed only to the alarm set-points.

InP: inputs. $rRnL$ = measuring range, from rI to rB as the table in the flow chart shows. $Pra b$: probe selection; L = thermocouple, rLd = Pt or Ni, $rESL$ = resistance measurement. $LYPE$: measuring mode selection: LrS =

ITALIANO

■ PRECAUZIONI DI SICUREZZA

! Leggere attentamente il manuale di istruzioni. Qualora l'apparecchio venisse adoperato in un modo non specificato dal costruttore, la protezione prevista dall'apparecchio potrebbe essere compromessa.

Manutenzione: Assicurarsi che il montaggio dei moduli estraibili e le connessioni previste siano eseguiti correttamente al fine di evitare qualsiasi malfunzionamento o danneggiamento dello strumento. Per mantenere pulito lo strumento usare un panno inumidito; non usare abrasivi o solventi. Si consiglia di scollegare lo strumento prima di eseguire pulizie.

DEUTSCH

■ SICHERHEITSMASSNAHMEN

! Die Betriebsanleitung aufmerksam lesen. Sollte das Gerät nicht gemäß der Herstellerangaben verwendet werden, könnte der vom Gerät vorgesehene Schutz beeinträchtigt werden.

Wartung: Sicherstellen, dass der Einbau der ausziehbaren Module sowie die vorgesehenen Anschlüsse richtig ausgeführt wurden, um schlechte Funktion oder Beschädigung des Gerätes zu vermeiden. Das Gerät mit einem feuchten Tuch reinigen; keine Scheuer- oder Lösemittel verwenden. Das Gerät vor der Reinigung ausschalten.

■ ANLEITUNG

Pass: Passwort. Von 0 bis 4999, direkter Zugang zu Alarmschwellen und zu anderen Parametern komplett geschützt ist. Von 5000 bis 9000, direkter Zugang nur zu den Alarmschwellen möglich.
inp: Eingänge. $R_{H,L}$ = Messbereich, von r_1 bis r_B gemäß Tabelle im Flussdiagramm. **Prob:** Sondenwahl: E_L = Thermoelement, r_E^d = Pt oder Ni, r_E^S = Widerstandsmessung. $E_{Y,P}$ = Messartwahl: $E_{r,S}$ = Messung echter Effektivwert, dE = Messung DC.

FRANÇAIS

MESURES DE SECURITE

Lire attentivement le manuel de l'utilisateur. Si l'appareil est utilisé dans des conditions différentes de celles spécifiées par le fabricant, le niveau de protection prévu par l'instrument peut être compromis.

Maintenance: S'assurer d'avoir effectué correctement le montage et câblage des modules en fichables et des relatives connexions afin d'éviter tout malfonctionnement ou endommagement de l'appareil. Pour maintenir propre l'instrument, utiliser un chiffon humide; ne pas utiliser d'abrasifs ou de solvants. Il faut déconnecter le dispositif avant de procéder

ESPAÑOL

■ NORMAS DE SEGURIDAD

! Lea atentamente este manual de instrucciones. Si el instrumento se usa de modo distinto al indicado por el fabricante, la protección de seguridad ofrecida por el instrumento podrá resultar dañada.

Mantenimiento: asegúrese de montar correctamente los módulos extraíbles y los cables correspondientes para evitar un mal funcionamiento y posibles daños en el equipo. Para limpiar el equipo, utilizar siempre un trapo ligeramente humedecido, nunca productos abrasivos o disolventes. Se recomienda desconectar siempre el instrumento antes de limpiarlo.

DANSK

■ SIKKERHEDSFORSKRIFTER

! Læs brugervejledningen omhyggeligt. Hvis instrumentet skal anvendes på en måde, der ikke er beskrevet af producenten, kan instrumentets beskyttelsesforanstaltninger være utilstrækkelige.

Vedligeholdelse: Kontrollér, at monteringen af udtrækningsmodulerne og de relevante tilslutninger foretages korrekt for at undgå fejlfunktioner eller beskadigelse af instrumentet. Brug en let fugtet klud til rengøring af instrumentet. Der må ikke anvendes slibe- eller oplosningsmidler. Vi anbefaler, at instrumentet frakobles før rengøring.

EJLEDNING

5: adgangskode. Fra 0 til 4999 giver mulighed for direkte adgang til de indstillede grænseværdier - øvrige metrum er fuldt beskyttede. Fra 5000 til 9000 giver kun mulighed for direkte adgang til de indstillede grænseværdier.

■: indgange. $r A$ og L_1 = måleområde, fra $r I$ til $r B$, vist i tabellen i flowdiagrammet. $P r o b_b$: valg af probe: termoelement, $r E d$ = Pt eller Ni, $r E 5$ = mod-

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TRMS measurement, dE = DC measurement, $\text{in}E$: selection of the input signal integration time from 100ms equivalent to a sampling frequency of 2560Hz to 999.9ms equivalent to 256Hz. $\text{R}uEa$ = automatic or manual from 100.0 to 999.9 ms.

EJ : set up of cold junction compensation. $\text{R}uEa$ = automatic or manual from 0 to 50°C.

dSP : display selection: 1999= 3 1/2 digit or 9990= 3 digit + dummy zero "0".

Colr : display colour. Selection of the basic colour corresponding to the normal (non-alarm) status. Selection of the display colour: rEd = red, $\text{or}Rn$ = orange, $\text{Gr}En$ = green.

SELc : electrical scale. $L\alpha E$ = selection of the minimum value of the variable input range, $H\iota E$ = selection of the maximum value of the variable input range, dP = selection of decimal point position, Lad = minimum displayed value, Hid = maximum displayed value.

Lin : input signal linearization. A signal measured from a non-linear transducer is modified by setting the input (in.01 ... in.16) and output (ou.01 ... ou.16) linearization points so that the displayed value is as accurate as possible.

$n\text{on}E$ = no linearization or YE5 = active linearization, $L\text{in}P$ = linearization points (1 to 16), $\text{in}O\text{l}$ (... in.16) = linearization point in the "HIE - LoE" range $\text{ou}O\text{l}$ (... ou.16) = linearized point in the "Hid - Lod" range.

SP1 (... SP4): alarm set-point. $L\alpha S$ = selection of minimum set-point limit, $H\iota S$ = selection of maximum set point limit, $SE\text{L}$ = set-point setting, HY5 = hysteresis selection, OFFd = off delay selection (0 to 255s) and = on delay selection (0 to 255s). rLY = relay status selection: nE = normally energized, nd = normally de-energized. RLr : alarm type selection: OFF = disabled, $d\text{a}$ = down alarm, uP = up alarm, dd = down alarm with disabling at power on, uPL = up alarm with latch, $d\text{a}L$ = down alarm with latch. colr = selection of display colour for alarm, the basic colour of the display is modified according to the alarm: rEd = red, $\text{or}Rn$ = orange, $\text{Gr}En$ = green, $n\text{on}E$ = the basic colour of the display is not modified when an alarm occurs.

$F\text{IL}$: digital filter. $F\text{ILS}$ = selection of the filter operating range (from 0 to display full scale), $F\text{ILC}$ = selection of the filtering coefficient value (1 to 32).

Rout : analogue output. $L\alpha R$ = % value of the zero of the output range that is generated by the minimum displayed value (Lo.d) $H\iota R$ = % value of the full scale of the output range that is generated by the maximum displayed value (Hi.d). EYPE : selection of analogue output signal; $R=20\text{mA}$ output; $U=10\text{V}$ output

$Sout$: serial port. Rdd = selection of instrument address, bdr = selection of baud rate.

End : external command from the input contact. Selection of the function to be attributed to the CMD contact (see table in the flowchart, for the connection of the external contact see the relevant instruction sheet).

IMPORTANT NOTES. DISPLAY: the blinking shows that the limit of the display range has been exceeded with updating of the value up to 20% of its rated input range. EEE: indicates that the probe connection has been opened (TC, RTD). -EEE: indicates the probe short circuit (RTD). MODULES: some specific menus appear only if the relevant modules have been installed. MIN-MAX: the reset of the minimum and maximum values is carried out without request of confirmation. ALARMS: the colour of the display coupled to the alarms follows a priority from 1 to 4: 1 lower priority; 4 higher priority. The LED used to signal that the alarm is active blinks when the off-delay or the on-delay function is activated.

TECHNICAL SPECS

Display: 3 1/2 DGT red colour LED (UDM35); 4 DGT LED, colours: red, green, amber (UDM40).

Ambient conditions: only internal use, height up to 2000m. Protection degree, front: IP67, NEMA4 AC/DC power supply, BP H: 90 to 260V. BP L: 18 to 60V.

Energy consumption: $\leq 30\text{VA}/12\text{W}$ (BP H), $\leq 20\text{VA}/12\text{W}$ (BP L).

Temperature: operating 0° to 50°C (32° to 122°F)(R.H.<90% non-condensing); storage: -10° to 60°C (14° to 140°F) (R.H. < 90% non-condensing).

Reference voltage for insulation: 300 V_{RMS} to ground (500V input).

Dielectric strength: 4000 V_{RMS} for 1 minute.

Rejection: NMRR 40dB, 40 to 60Hz. CMRR 100dB, 40 to 60Hz.

EMC: EN61000-6-2, IEC61000-6-2, EN61000-6-3, IEC61000-6-3

Safety standards: safety EN61010-1, IEC61010-1.

Housing: (assembled instrument) 48 x 96 x 105 mm; material PC-ABS, self-extinguishing: UL 94 V-0.

Approvals: CE.

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misura: $E\text{r}n\text{S}$ = misura TRMS, dE = misura CC. $\text{in}E$: selezione tempo di integrazione del segnale di ingresso da 100ms equivalente a una frequenza di campionamento di 2560Hz a 999,9ms equivalente a 256Hz. $\text{R}uEa$ = automatico o manuale da 100.0 a 999.9 ms. EJ : impostazione compensazione del giunto freddo. $\text{R}uEa$ = automatica o manuale da 0 a 50°C. dSP : display selection: 1999= 3 1/2 digit or 9990= 3 digit + dummy zero "0".

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Colr : colore display. Scelta del colore di base in condizione di non allarme. Scelta colore display: rEd = rosso, $\text{or}Rn$ = arancione, $\text{Gr}En$ = verde.

SELc : scalare elettrica. $L\alpha E$ = Wahl Mindestwert Variableneingangsbereich $H\iota E$ = Wahl Höchstwert Eingangsber. dP = Wahl Dezimalpunktstellung, Lad = anzeigbarer Mindestwert, Hid = anzeigbarer Höchstwert.

Lin : Linearisierung des Eingangssignals. Ein von nicht linearem Wandler gemessenes Signal wird geändert durch Eingabe der Eingangs- (in.01 ... in.16) und Ausgangs-Linearisierungspunkte (ou.01 ... ou.16), um aus dem angezeigten Wert einen Effektivwert zu machen. $n\text{on}E$ = keine Linearisierung oder YE5 = Linearisierung aktiv, $L\text{in}P$ = Linearisierungspunkte (von 1 bis 16), $\text{in}O\text{l}$ (... in.16) = Linearisierungspunkt im Bereich "HIE - LoE", $\text{ou}O\text{l}$ (... ou.16) = Linearisierter Punkt im Bereich "Hid - Lod".

SP1 (... SP4): soglia allarme. $L\alpha S$ = Wahl Mindestschwellengrenze, $H\iota S$ = Wahl Höchstschwellengrenze, $SE\text{L}$ = Wahl Schwelle, HY5 = Wahl Hysteresis, OFFd = Wahl Verzögerung (von 0 bis 255s) Alarmrückkehr and = Wahl Alarm-Einschaltverzögerung (von 0 bis 255s). rLY = Wahl Relaisstatus: nE = normal erregt, nd = normal unerregt. RLr : Wahl Alarmsignal: OFF = außer Betrieb, $d\text{a}$ = fallend, uP = steigend, dd = fallend mit Außerbetriebsetzung bei Einschaltung, uPL = steigend mit Selbsthaltung, $d\text{a}L$ = fallend mit Selbsthaltung.

FIL : Digitalfilter. $F\text{ILS}$ = Wahl Filterfunktionsbereich (von 0 bis Anzeigewert), $F\text{ILC}$ = Wahl Filterkoeffizient (von 1 bis 32).

Rout : Analogausgang. $L\alpha R$ = Wahl Mindestwert Variableneingangsbereich (Wert in % der Endskala des Ausgangssignals). $H\iota R$ = Wahl Höchstwert Variableneingangsbereich (Wert in % der Endskala des Ausgangssignals). EYPE : Wahl Analogausgangssignal; R = Ausgang 20mA; U = Ausgang 10V.

$Sout$: serielle Schnittstelle. Rdd = Wahl Gerätedresse, bdr = Wahl Datenübertragungsrate.

End : Außensteuerung über Eingangskontakt. Funktionswahl für Kontakt CMD (siehe Tabelle im Flussdiagramm, für Außenkontaktanschluss siehe Anleitungsblatt der Eingänge).

WICHTIGE HINWEISE. ANZEIGE: Das Blinken bedeutet Überschreitung des angezeigten Bereiches mit Datenaktualisierung bis 20% des Eingangssollbereiches. EEE: zeigt die Öffnung des Sensoranschlusses (TC, RTD) an. -EEE: zeigt Sensorkurzschluss an (RTD).

MODULE: einige spezifische Menüs erscheinen nur wenn die entsprechenden Zugehörigkeitsmodule eingebaut sind. MIN-MAX: das Rücksetzen der Mindest- und Höchstwerte erfolgt ohne Bestätigung. ALARME: die mit den Alarmen kombinierte Anzeigefarbe folgt eine Prioritätslogik von 1 bis 4: 1 niedrigste Priorität; 4 höchste Priorität. Die Alarm Aktiv-Anzeige-LED blinkt, wenn die Funktion Verzögerung abgebunden ist. HY5 : die mit dem Alarmen verbundene Anzeige-LED blinkt, wenn die Funktion Verzögerung abgebunden ist. OFFd : die mit dem Alarmen verbundene Anzeige-LED schaltet sich mit dem Alarm aus. and : die mit dem Alarmen verbundene Anzeige-LED schaltet sich mit dem Alarm aus.

FIL : digital filter. $F\text{ILS}$ = selection of the filter operating range (0 to full scale), $F\text{ILC}$ = selection of the filtering coefficient value (1 to 32).

Rout : analog output. $L\alpha R$ = % value of the zero of the output range that is generated by the minimum displayed value (Lo.d) $H\iota R$ = % value of the full scale of the output range that is generated by the maximum displayed value (Hi.d). EYPE : selection of analogue output signal; $R=20\text{mA}$ output; $U=10\text{V}$ output

$Sout$: serial port. Rdd = valg af instrumentadresse, bdr = valg af baudhastighed.

End : ekstern kommando fra en indgangskontakt. Valg af den funktion, der skal tilknyttes CMD-kontakten (se tabel i flowdiagrammet. Tilslutning af den eksterne kontakt beskrives i den relevante vejledning).

NOTAS IMPORTANTES. DISPLAY: el parpadeo indica que se ha sobrepasado el límite de la escala del display, con la actualización del valor al alcanzar el 20% de la escala nominal de entrada. EEE: indica la desconexión de la sonda (TC, RTD). -EEE: indica el cortocircuito de la sonda (RTD).

MÓDULOS: algunos menús específicos sólo serán visualizados si se han instalado los módulos pertinentes. MIN-MAX: la puesta a cero de los valores mínimo y máximo se llevar