HTRC10(-D)

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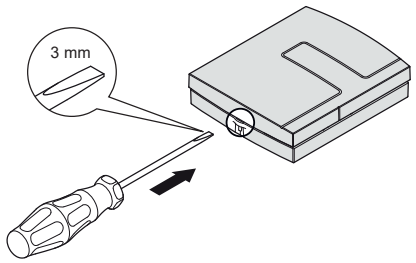

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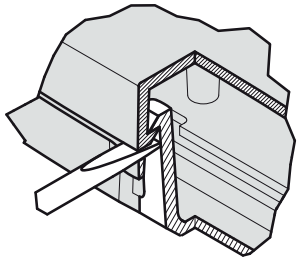

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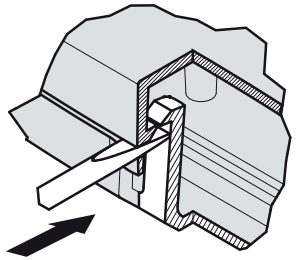

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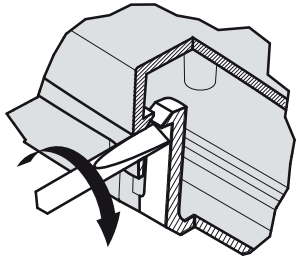

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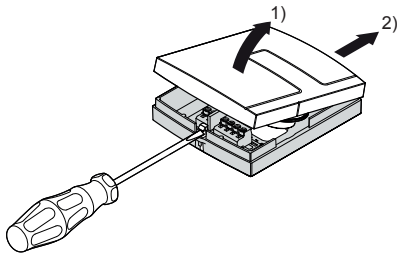

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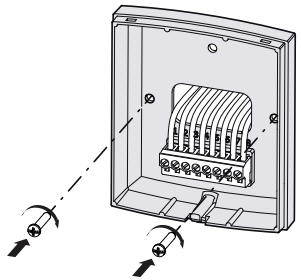

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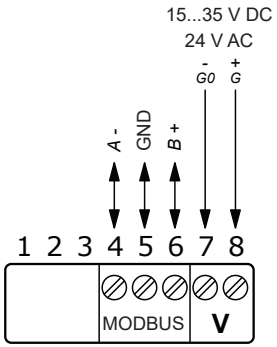

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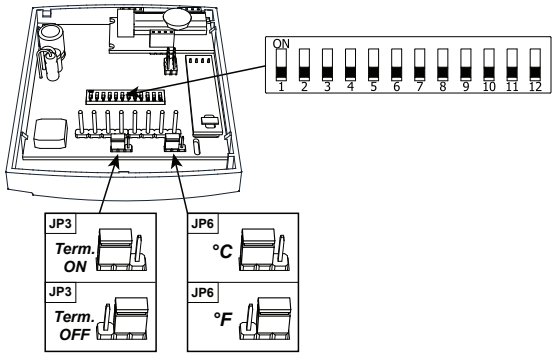

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19200	OFF	OFF
9600	ON	OFF
4800	OFF	ON

Parity Paritet Parität		
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None / Ingen	ON	OFF
Odd / Udda	OFF	ON
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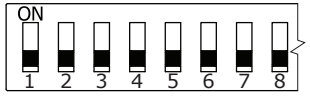
Address Adress Adresse								
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Address Adress Adresse								
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36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
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39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
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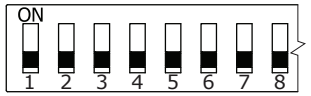
Address Adress Adresse								
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Address Adress Adresse								
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113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
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Address Adress Adresse								
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154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
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158	OFF	ON	ON	ON	ON	OFF	OFF	ON
159	ON	ON	ON	ON	ON	OFF	OFF	ON

Address Adress Adresse								
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164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
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Address Adress Adresse	ON 1 2 3 4 5 6 7 8							
	1	2	3	4	5	6	7	8
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198	OFF	**ON**	**ON**	OFF	OFF	OFF	**ON**	**ON**
199	**ON**	**ON**	**ON**	OFF	OFF	OFF	**ON**	**ON**
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201	**ON**	OFF	OFF	**ON**	OFF	OFF	**ON**	**ON**
202	OFF	**ON**	OFF	**ON**	OFF	OFF	**ON**	**ON**
203	**ON**	**ON**	OFF	**ON**	OFF	OFF	**ON**	**ON**
204	OFF	OFF	**ON**	**ON**	OFF	OFF	**ON**	**ON**
205	**ON**	OFF	**ON**	**ON**	OFF	OFF	**ON**	**ON**
206	OFF	**ON**	**ON**	**ON**	OFF	OFF	**ON**	**ON**
207	**ON**	**ON**	**ON**	**ON**	OFF	OFF	**ON**	**ON**
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212	OFF	OFF	**ON**	OFF	**ON**	OFF	**ON**	**ON**
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216	OFF	OFF	OFF	**ON**	**ON**	OFF	**ON**	**ON**
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230	OFF	**ON**	**ON**	OFF	OFF	**ON**	**ON**	**ON**
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Address Adress Adresse	ON 1 2 3 4 5 6 7 8							
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235	**ON**	**ON**	OFF	**ON**	OFF	**ON**	**ON**	**ON**
236	OFF	OFF	**ON**	**ON**	OFF	**ON**	**ON**	**ON**
237	**ON**	OFF	**ON**	**ON**	OFF	**ON**	**ON**	**ON**
238	OFF	**ON**	**ON**	**ON**	OFF	**ON**	**ON**	**ON**
239	**ON**	**ON**	**ON**	**ON**	OFF	**ON**	**ON**	**ON**
240	OFF	OFF	OFF	OFF	**ON**	**ON**	**ON**	**ON**
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242	OFF	**ON**	OFF	OFF	**ON**	**ON**	**ON**	**ON**
243	**ON**	**ON**	OFF	OFF	**ON**	**ON**	**ON**	**ON**
244	OFF	OFF	**ON**	OFF	**ON**	**ON**	**ON**	**ON**
245	**ON**	OFF	**ON**	OFF	**ON**	**ON**	**ON**	**ON**
246	OFF	**ON**	**ON**	OFF	**ON**	**ON**	**ON**	**ON**
247*	**ON**	**ON**	**ON**	OFF	**ON**	**ON**	**ON**	**ON**
247*	OFF	OFF	OFF	**ON**	**ON**	**ON**	**ON**	**ON**
247*	**ON**	OFF	OFF	**ON**	**ON**	**ON**	**ON**	**ON**
247*	OFF	**ON**	OFF	**ON**	**ON**	**ON**	**ON**	**ON**
247*	**ON**	**ON**	OFF	**ON**	**ON**	**ON**	**ON**	**ON**
247*	OFF	OFF	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**
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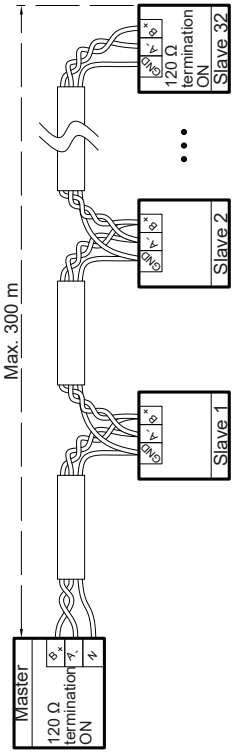
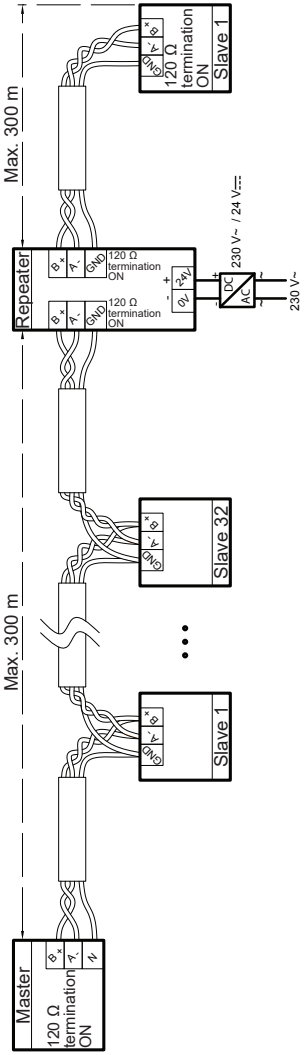
247*	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**

* Maximum selectable address = 247
Högsta valbara adress = 247
Maximale wählbare Adresse = 247

Connection without repeater / Anslutning utan repeater / Verbindung ohne Repeater



Connection with repeater / Anslutning med repeater / Verbindung mit Repeater



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INSTRUCTION HTRC10(-D)

Read this instruction before installation and wiring of the product. Subject to change without notice.

Humidity and temperature transmitters for Modbus communication for wall mounting

Room transmitters for measurement of humidity and temperature. -D models have an LCD display showing humidity and temperature.

Technical data

Output signal	Modbus
Supply voltage (U_V)	24 V AC ±10 % / 15...35 V DC
Power consumption	< 1 W
Transformer power	2 VA
Electrical connection	Screw terminals max. 1.5 mm² (AWG 16)
Ambient temperature	0...50°C
Ambient humidity	10...90 % RH non-condensing
Storage temperature	-25...+60°C
Protection class	IP30
Dimensions (WxHxD)	85 x 100 x 30.5 mm
Humidity	
Humidity sensor	Capacitive
Working range	0...100 % RH
Accuracy at 20°C	±2 % RH
Temperature	
Working range	0...50°C
Accuracy at 20°C	±0.2°C
Communication	
Type	Modbus RTU
Factory settings	
Baud rate	19200 bits/s
Parity	Even
Address of unit	1

Installation

The transmitter should be mounted in a location with good air circulation where it can be expected to give a representative reading. It may be mounted on a wallbox or directly on the wall.
To remove the front cover, depress the locking tongue in the lower part of the casing using a 3 mm flat-blade screwdriver (**picture 1**). Press and twist the screwdriver and at the same time pull the bottom part of the front outwards (**pictures 2-4**). When the bottom end of the front is free from the bottom part of the casing, slide the cover towards the top of the casing to free the hooks holding the upper edge of the front cover (**picture 5**).
Perform the connections according to the electrical wiring diagram (**picture 7**).
Screw the bottom part of the casing to the wall.

Communication settings

The transmitter can communicate 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 baud rate. A minimum timeout of one second is suitable for 19200 and 9600 baud. For other baud rates, increase the timeout value (2 s for 4800 baud). To modify the factory settings (listed under Technical data), see **page 2-4**.
The RS485-Modbus line has a principal bus to which the various devices are connected (max. 32 devices). Use twisted pair cables + 1 ground wire + shield. Use the twisted pair cable to connect A+ and B- and a single wire for GND, this 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 to a 120 Ω termination resistance. To fit the 120 Ω to the transmitter (JP3), see **picture 8**.
The maximum length of the bus depends on the baud rate and the cable itself. For a baud rate of 9600, the cable (AVG26 type) can be up to 1000 m. Any branch lines must not be over 20 m. If a multiport tap is used 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, a signal repeater must be installed. Add a signal repeater for each group of 32 connected devices.

Note: The Modbus addresses listed below correspond to the number of the register. The physical address is the indicated value minus one.

Address	Description	Min.	Max.	R/W
4000	Humidity**	0	1000	R
4001	Temperature**	0°C	500°C	R
4024	Humidity correction***	-100	100	R/W
4025	Temperature correction***	-90	90	R/W

**) The displayed value for temperature and humidity is multiplied by 10 (example: value read by transmitter = 21.3°C → value read by Modbus = 213).
***) The parameter is added to the sensor value.

If the sensor is broken, the temperature displayed corresponds to the values in the table below:

Broken sensor	Modbus value	Corresponding value
Humidity	0	0
Temperature	-20 °C	-2.0°C

CE

This product carries the CE mark.
For more information, see www.regincontrols.com..

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INSTRUKTION HTRC10(-D)

Läs denna instruktion innan produkten monteras och ansluts. Kan ändras utan föregående notis.

Fukt- och temperaturtransmittrar för Modbuskommunikation för väggmontage

Rumstransmittrar för mätning av luftfuktighet och temperatur. -D-modellerna har LCD-display som visar fuktighet och temperatur.

Tekniska data

Utsignal	Modbus
Matningsspänning (U_V)	24 V AC ±10 % / 15...35 V DC
Strömförbrukning	< 1 W
Transformatorkapacitet	2 VA
Elektrisk anslutning	Skruvplintar max. 1,5 mm² (AWG 16)
Omgivningstemperatur	0...50°C
Omgivande luftfuktighet	10...90 % RH icke-kondenserande
Lagringstemperatur	-25...+60°C
Skyddsklass	IP30
Dimensioner (BxHxD)	85 x 100 x 30,5 mm
Fuktighet	
Fuktgivare	Kapacitiv
Mätområde	0...100 % RH
Noggrannhet vid 20°C	±2 % RH
Temperatur	
Mätområde	0...50°C
Noggrannhet vid 20°C	±0,2°C
Kommunikation	
Typ	Modbus RTU
Fabriksinställningar	
Baudhastighet	19200 bitar/s
Paritet	Jämn
Enhetens adress	1

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Installation

Transmittern ska monteras på en plats med god luftcirkulation där den kan förväntas ge representativa mätvärden. Den kan monteras antingen på väggdosa eller direkt på vägg.
Ta av locket genom att trycka in plasttungan i kåpans nedre gavel med en 3 mm bred mejsel (**bild 1**). Vrid mejseln och dra samtidigt locket lite utåt (**bild 2-4**). När lockets nedre gavel går fritt från botten, skjut locket i riktning mot den övre gaveln för att frigöra hakarna i lockets övre ände (**bild 5**).
Koppla in enheten enligt inkopplingsdiagrammet (**bild 7)**.
Skruva fast enheten i väggen.

Kommunikationsinställningar

Transmittern kan kommunicera med en Modbusmasterenhet. Alla parametrar och variabler är tillgängliga som holding register och vad som ska läsas/skrivas (R/W) definieras i funktionskoder (FC=03, 06, 16). Välj en lämplig timeout mellan läsningarna, i förhållande till baudhastigheten. En minimumtimeout på en sekund är lämplig för 19200 och 9600 baud. Öka timeoutvärdet för andra baudhastigheter (2 s för 4800 baud). För att justera fabriksinställningarna (som finns under Tekniska data), se **sida 2-4**.
RS485-Modbus-linjen har en huvudbuss till vilken de olika enheterna ansluts (max. 32 enheter). Använd partvinnade kablar + 1 jordledning + skärm. Använd den partvinnade kabeln för att ansluta A+ och B- och en enkel ledare för GND, denna måste anslutas till varje enhet. Anslut skärmen till jord vid ett ställe, helst nära mastern. Kabeln måste vara av dataöverföringstypen Modbus RS485. Kabelns ändar måste anslutas till ett 120 Ω termineringsmotstånd. För att koppla 120 Ω till transmittern (JP3), se **bild 8**.
Bussens maximala längd är beroende av baudhastigheten och själva kabeln. För en baudhastighet på 9600 kan kabeln (AVG26-typ) vara upp till 1000 m. Eventuella avgreningsledningar får inte vara längre än 20 m. Om en multiport tap används för n avgreningar kan varje avgrening vara upp till 40 m delat med n. För att öka antalet enheter på ledningen eller öka kabellängden måste en signalrepeater installeras. Lägg till en signalrepeater för varje grupp av 32 anslutna enheter.

Obs: Modbusadresserna som visas nedan motsvarar registrets nummer. Den fysiska adressen är det indikerade värdet minus ett.

Adress	Beskrivning	Min.	Max.	R/W
4000	Fuktighet**	0	1000	R
4001	Temperatur**	0°C	500°C	R
4024	Fuktighetsjustering***	-100	100	R/W
4025	Temperaturjustering***	-90	90	R/W

**) Temperatur- och fuktighetsvärdena som visas multipliceras med 10 (exempel: värde från transmittern = 21.3°C → värde från Modbus = 213).
***) Parametern adderas till givarvärdet.

Om givaren är trasig motsvarar temperaturen som visas värdena i tabellen nedan:

Trasig givare	Modbusvärde	Motsvarande värde
Fuktighet	0	0
Temperatur	-20°C	-2.0°C

CE

Den här produkten är CE-märkt.
För mer information, se www.regincontrols.com.

Teknisk support

Teknisk hjälp och råd på telefon: 031 720 02 30

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DE

ANLEITUNG HTRC10(-D)

Lesen Sie diese Anleitung vor der Installation und Verkabelung des Produkts. Änderungen vorbehalten.

Feuchte- und Temperaturtransmitter mit Modbus-Kommunikation zur Wandmontage

Raumtransmitter zur Messung der Temperatur und der relativen Fecuhte in Innenräumen.
-D-Modelle verfügen über ein LCD-Display zur abwechselnden Anzeige der Temperatur und Feuchte.

Technische Daten

Ausgangssignal	Modbus
Versorgungsspannung	24 V AC ± 10 % oder 15...35 V DC
Leistungsaufnahme	< 1 W
Transformatorleistung	2 VA
Elektronischer Anschluss	Schraubklemmen, max. 1,5 mm² (AWG 16)
Umgebungstemperatur	0...50 °C
Umgebungsfeuchte	10...90 % RH, nicht kondensierend
Lagertemperatur	-25...+60 °C
Schutzart	IP30
Abmessungen (B x H x T)	85 x 100 x 30,5 mm
Feuchte	
Feuchtesensor	Kapazitiv
Arbeitsbereich	0...100 % RH
Genauigkeit bei 20 °C	± 2 % RH
Temperatur	
Arbeitsbereich	0...50 °C
Genauigkeit bei 20 °C	± 0,2 °C
Kommunikation	
Typ	Modbus RTU
Werkseinstellungen:	
Baudrate	19200 Bit/s
Parität	Gerade
Geräteadresse	1

Installation
Der Transmitter sollte an einem Ort mit guter Luftzirkulation montiert werden, an dem repräsentative Messwerte erwartet werden können. Montieren Sie den Transmitter auf eine Wanddose oder direkt an die Wand.
Um die Frontabdeckung zu entfernen, drücken Sie mit einem 3-mm-Schlitzschraubendreher die Einrastnase im Gehäuseunterteil herunter (**Bild 1**). Drücken und Drehen Sie den Schraubendreher, und ziehen Sie dabei gleichzeitig das Unterteil der Frontabdeckung nach außen (**Bild 2-4**). Wenn das Unterteil der Frontabdeckung vom Unterteil des Gehäuses gelöst wurde, muss die Abdeckung Richtung Gehäuseoberteil geschoben werden, um sie aus den oberen Befestigungshaken zu lösen (**Bild 5**).
Verbinden Sie die Anschlüsse entsprechend dem Schaltplan (**Bild 7**).
Schrauben Sie das Gehäuseunterteil an die Wand (**Bild 6**).

Kommunikationseinstellungen

Der Transmitter kann mit einem Modbus-Master kommunizieren. Alle Parameter und Variablen sind als Holding-Register erreichbar. Lese/Schreibfunktion sind über Funktionscodes (FC=03, 06, 16) möglich. Wählen Sie eine angemessene Auszeit zwischen den Lesezyklen in Relation zur Baudrate. Eine minimale Auszeit von einer Sekunde ist passend für 19200 und 9600 Baud.
Erhöhen Sie die Baudrate bei anderen Baudraten (z. B. 2 s bei 4800 Baud). Zur Änderung der Werkseinstellung (aufgeführt unter Technische Daten), siehe **Seite 2-4**.

Der RS485-Modbus ist ein Kommunikationsbus, auf dem unterschiedlichste Geräte aufgeschaltet werden können (max. 32 Geräte). Verwenden Sie folgendes Kabel: Twisted Pair + 1 Schutzleiter + Abschirmung. Verwenden Sie Twisted-Pair-Kabel für die Verbindung A+ und B- und einen einzelnen Draht für GND, der an jedes Gerät angeschlossen werden muss. Verbinden Sie die Abschirmung mit der Erde (GND) an einem Punkt, vorzugsweise möglichst nahe am Master. Das Kabel sollte den Spezifikationen für Modbus RS485 entsprechen. Die Enden der Kabelleitung sollten mit einem 120 Ω Widerstand abgeschlossen werden. Für die Installation des 120 Ω Widerstandes, siehe **Bild 8**.
Die maximale Länge des Busses hängt von der Baudrate und dem Kabeltyp ab. Bei einer Baudrate von 9600 kann mit dem Kabel AVG26 eine Länge von bis zu 1000 m erreicht werden. Jeder Abzweig sollte nicht länger als 20 m sein. Wird für „n“ Abzweige ein Multiport verwendet, dann kann jeder Abzweig maximal 40 m dividiert durch „n“ lang sein. Um die Anzahl der Geräte pro Buslinie oder die Länge des Kabels zu erhöhen, muss ein Repeater verwendet werden. Fügen Sie für jede Gruppe von 32 Geräten einen Repeater hinzu.

Hinweis: Die unten aufgeführten Modbus-Adressen entsprechen der Registernummer. Die physikalische Adresse ist der angezeigte Wert minus 1.

Adresse	Beschreibung	Min.	Max.	L/S
4000	Feuchte**	0	1000	L
4001	Temperatur**	0 °C	500 °C	L
4024	Feuchtekorrektur ***	-100	100	L/S
4025	Temperaturkorrektur ***	-90	90	L/S

**) Der angezeigte Wert für Temperatur und Feuchte ist mit 10 multipliziert (Beispiel: Der vom Transmitter gelesene Wert = 21,3 °C > Der Wert, der von Modbus gelesen wird = 213).
***) Der Parameter wird zum Fühlerwert addiert.

Falls der Sensor defekt ist, wird ein Temperaturwert gemäß der nachfolgenden Tabelle angezeigt:

Defekter Sensor	Modbus-Wert	Entsprechender Wert
Feuchte	0	0
Temperatur	-20 °C	-2,0 °C

CE

Dieses Produkt trägt das CE-Zeichen.
Weitere Informationen unter www.regincontrols.com.

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