



Lesen Sie dieses Dokument sorgfältig durch, bevor Sie dieses Gerät verwenden! Die Garantie erlischt bei Beschädigung des Geräts, wenn Sie die Anweisungen in der Bedienungsanleitung nicht beachten. Außerdem übernehmen wir keine Haftung für Personenschäden, Sachschäden oder finanzielle Nachteile.

ENDA EUP1222

NFC-Universal-PID-Regler

- ▶ DIN-Schienenmontage,
- ▶ Wählbarer Dual-Set-Wert,
- ▶ Wählbare Sensortypen PT100, J, K, L, T, S, R,
- ▶ Wählbare Eingangstypen: 0–20 mA, 4–20 mA, 0–10 V, 2–10 V, 0–25 mV und 0–50 mV
- ▶ Programmierbare digitale Kontakteingänge D1 und D2,
- ▶ Automatische Berechnung der PID-Parameter (SELFTUNE),



Bevor das System zum ersten Mal gestartet wird, müssen die PID-Parameter des Systems eingegeben werden, sofern diese bekannt sind. Andernfalls muss die Selbstoptimierungsfunktion aktiviert werden.

- ▶ Steuerausgänge können deaktiviert werden (für Messzwecke verwendet).
- ▶ Manuelle Steuerung für C/A2- oder ANL/SSR-Ausgänge,
- ▶ Softstart-Funktion,
- ▶ Kommunikation über RS485-Modbus-Protokoll,
- ▶ Wählbare analoge, SSR- oder Relaisausgangssteuerung,
- ▶ Wählbarer Analogausgang 0–20 mA, 4–20 mA,
- ▶ Ausgang C/A2 kann als sekund. Alarm- od. Temperaturregelungsausgang eingestellt werden.
- ▶ Heiz-/Kühlungssteuerung,
- ▶ Offset-Funktion für Eingang,
- ▶ Bei Sensorausfall können Relaispos. ausgewählt oder ein periodischer Betrieb realisiert werden.
- ▶ Bis zu 16 Stufen Profilsteuerungsfunktion,
- ▶ Optionale Kontakt Auslösefunktion bei Profilschritten,
- ▶ Die Timer- oder Thermostatfunktion kann während der Profilsteuerung verwendet werden.
- ▶ Funktion zur Überwachung von Heizfehlern,
- ▶ Möglichkeit, über NFC auf alle Parameter zuzugreifen,
- ▶ CE-Kennzeichnung gemäß europäischen Normen.



Bestellcode:EUP1222



RoHS
Compliant

Technische Spezifikationen

ELEKTRISCHE EIGENSCHAFTEN

Versorgung	24 VDC ±20%.
Leistungsaufnahme	Max.5VA.
Elektr. Anschluss	1,5 mm² Schraubklemmenanschlüsse.
Leitungswiderstand	Max. 100 Ω Ohm für Thermoelemente, max. 20 Ω Ohm für Dreileiter-PT100.
Datenspeicherung	FLASH Memory (min. 20 Jahre).
Elektromag. Verträglichkeit	EN61326-1: 2021
Elektrische Sicherheit	EN61010-1:2010 (Verschmutzungsgrad 2, Schutzklasse II)

Stand: 22.07.2024, Änderungen vorbehalten und können jederzeit ohne Ankündigung durchgeführt werden !

BETRIEBSBEDINGUNGEN

Betriebstemp.-/Lagerung	0...+50°C/-25...+70°C (nicht kondensierend)..
Relative Luftfeuchtigkeit	Bis 31°C 80%, bis 40°C linear abfallend bis 50%
Schutzart	Entspricht nach En60529 Ip20.
Höhe	Max. 2000m.



Das Gerät nicht in explosiver oder korrosiver Umgebung einsetzen !

EINGÄNGE

D1 Eingang	Programmierbarer erster Steuereingang.
D2 Eingang	Programmierbarer zweiter Steuereingang.

AUSGÄNGE

C/A2 Ausgang	Relais: 250 VAC, 5 A (für ohmsche Last), NO (Auswahl für Alarm2 Ausgang).
A1 Ausgang	Relais: 250 VAC, 5 A (für ohmsche Last), NO.
ANL/SSR Ausgang	Wählbarer Analogaus. 0–20 mA und 4–20 mA; SSR 15 V, 20 mA max. Lastwiderstand beträgt 500 Ohm bei mA-Ausgang und SSR-Modus
Lebenserwartung für Relais	Ohne Last 10.000.000 Schaltvorgänge; 250 VAC, 5 A (ohmsche Last) 300.000 Schaltvorgänge.

REGELUNG

Steuerungstyp	Einzelner Sollwert und Alarmsteuerung.
Regelungsart	On-Off / P,PI,PD,PID (Auswählbar).
A/D Konverter	14 bits.
Abtastrate	100ms (Min.)
Proportional Band	Zwischen 0% und 100% einstellbar. Bei Pb=0% wird mit ON/OFF Schaltverhalten geregelt.
Integralzeit	Einstellbar zwischen 0,0 und 100,0 Minuten
Derivative Time	Einstellbar zwischen 0,0 und 25,0 Minuten
Regelungsphase	Einstellbar zwischen 1 und 125 Sekunden.
Hysterese	Einstellbar zwischen 1 und 50 °C/F.
Ausgangsleistung	Das Verhältnis der Leistung am Sollwert kann zwischen 0 % und 100 % eingestellt werden.

GEHÄUSE

Gehäuseart	Gehäuse für Schienenmontage nach DIN 43 700.
Abmessungen	B22.5xH96xT86mm.
Gewicht	ca.160g (inkl. Verpackung).
Gehäusematerial	Selbstverlöschend.



Reinigen Sie das Gerät NICHT mit Lösungsmitteln (Verdünner, Benzin, Reinigungsmittel usw.) und/oder scheuernden Reinigungsmitteln.

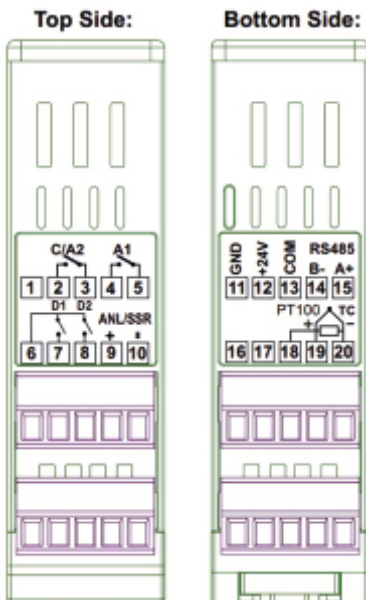
ANALOGUE EINGÄNGE

Eingangstyp		Messbereich		Genauigkeit
PT100 Widerstanfsthermometer	EN 60751	-199.9...600.0°C	-199.9...999.0°F	± 0,2% ±1Digit
PT100 Widerstanfsthermometer	EN 60751	-200...600°C	-328...1112°F	± 0,2% ±1Digit
J (Fe-CuNi) Thermoelement	EN 60584	-30.0...600.0°C	-22.0...999.0°F	± 0,5% ±1Digit
J (Fe-CuNi) Thermoelement	EN 60584	-30...600°C	-22...1112°F	± 0,5% ±1Digit
K (NiCr-Ni) Thermoelement	EN 60584	-30.0...999.9°C	-22.0...999.9°F	± 0,5% ±1Digit
K (NiCr-Ni) Thermoelement	EN 60584	-30...1300°C	-22...2372°F	± 0,5% ±1Digit
L (Fe-CuNi) Thermoelement	EN 43710	-30.0...600.0°C	-22.0...999.9°F	± 0,5% ±1Digit
L (Fe-CuNi) Thermoelement	EN 43710	-30...600°C	-22...1112°F	± 0,5% ±1Digit
T (Cu-CuNi) Thermoelement	EN 60584	-30.0...400.0°C	-22.0...725.0°F	± 0,5% ±1Digit
T (Cu-CuNi) Thermoelement	EN 60584	30...400°C	-22...752°F	± 0,5% ±1Digit
S (Pt10Rh-Pt) Thermoelement	EN 60584	40...1700°C	-40...3092°F	± 0,5% ±1Digit
R (Pt10Rh-Pt) Thermoelement	EN 60584	40...1700°C	-40...3092°F	± 0,5% ±1Digit
0-20mA Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit
4-20mA Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit
0-10V Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit
2-10V Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit
0-25mV Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit
0-50mV Eingang		-10000 ... +10000 (max. scale range 10000)		± 0,2% ±1Digit

Anschlussdiagramm



ENDA EUP1222-Geräte sind für die Montage auf Schienen vorgesehen. Stellen Sie sicher, dass das Gerät nur für den vorgesehenen Zweck verwendet wird. Die Abschirmung muss auf der Geräteseite geerdet werden. Während der Installation müssen alle an das Gerät angeschlossenen Leitungen spannungsfrei sein. Das Gerät muss vor unzulässiger Feuchtigkeit, Vibrationen und starker Verschmutzung geschützt werden. Stellen Sie sicher, dass die Betriebstemperatur nicht überschritten wird. Alle Eingangs- und Ausgangsleitungen, die nicht an das Versorgungsnetz angeschlossen sind, müssen als abgeschirmte und verdrehte Kabel verlegt werden. Diese Leitungen sollten nicht in der Nähe von Stromkabeln oder Komponenten verlegt werden. Die Installation und die elektrischen Anschlüsse müssen von qualifiziertem Personal und gemäß den vor Ort geltenden Vorschriften durchgeführt werden.



Der Analogausgang des Geräts ist nicht galvanisch von den internen Schaltkreisen getrennt. Bei Verwendung eines geerdeten Thermoelements dürfen die Analogausgangsanschlüsse daher nicht mit Erde verbunden werden.

Netzanschluss:

NOTE :

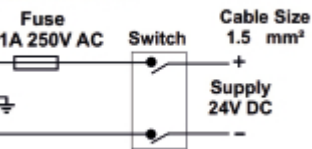
SUPPLY :
19,2-28,8V DC
1A



Ground protection input must be connected to the earth line.

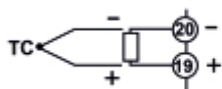


Fuse should be connected.



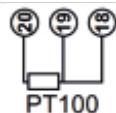
1-Netzkabel müssen den Anforderungen der Normen IEC60227 oder IEC60245 entsprechen. 2-Gemäß den Sicherheitsvorschriften muss der Netzschalter die Kennzeichnung des betreffenden Geräts tragen und für den Bediener leicht zugänglich sein.

Sensoreingänge



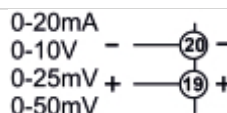
J-K-L-T-S-R Typ Thermoelemente:

Verwenden Sie die richtigen Anschlusskabel für Thermoelemente. Verwenden Sie keine verbundenen Kabel. Achten Sie darauf, dass Sie die Kabel an der richtigen Stelle und mit der richtigen Polarität an die Eingangsanschlüsse anschließen, wie in der Abbildung gezeigt.



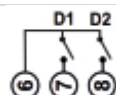
Widerstandsthermometer (Pt100):

Schließen Sie die Anschlussleitungen 2 und 3 für zweidrahtige PT100-Fühler kurz. Verwenden Sie keine verbundenen Kabel. Lange Kabel führen zu falschen Temperaturmessungen.



0-20mA, 4-20mA, 0-10V, 2-10V, 0-25mV und 0-50mV Eingänge:

Achten Sie darauf, dass Sie die richtigen Anschlüsse und Polaritäten an den Eingangsanschlüssen gemäß der Abbildung anschließen. Verwenden Sie keine verbundenen Kabel. Lange Kabel führen zu falschen Messergebnissen.



D1 und D2 Eingänge:

Bei mechanischen Schaltungen müssen potentialfreie Kontakte verwendet werden.

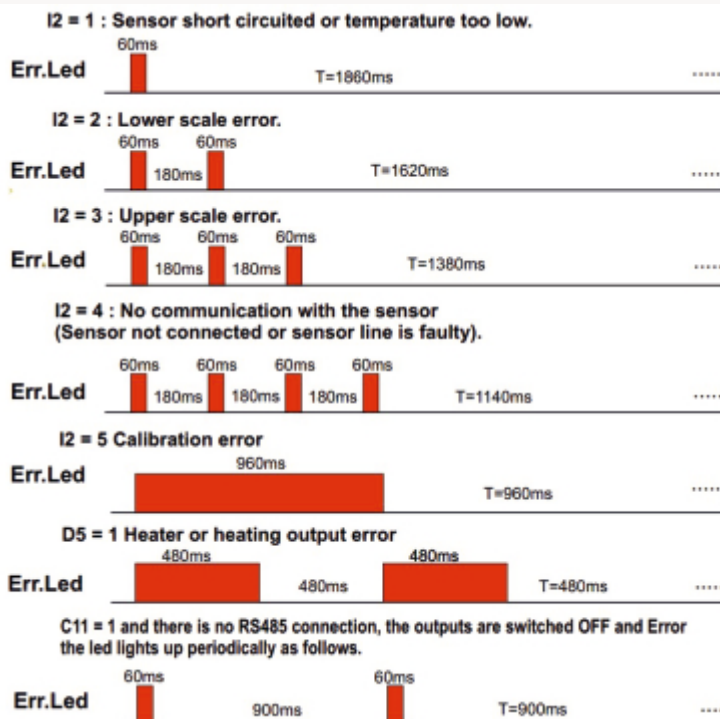


Schraubenanzugs-
drehmoment
0.4-0.5Nm



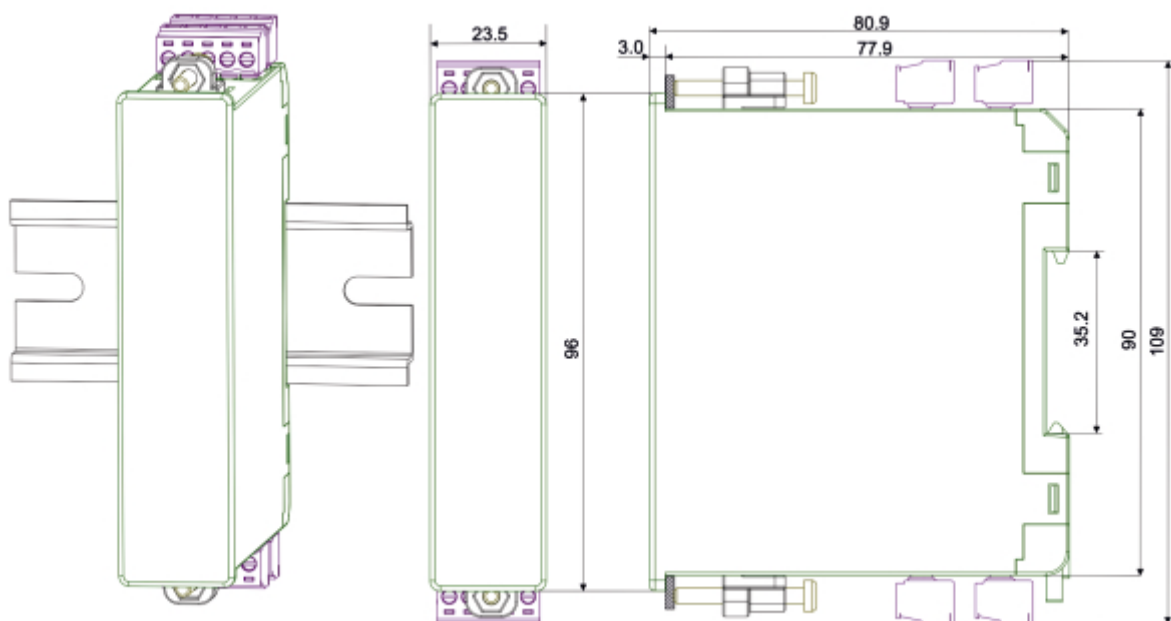
Schutzisoliert

Error LED Anzeige



Hinweis: Die Err-LED blinkt regelmäßig, wenn ein Fehler auftritt. Bei einem Fehler im oberen Bereich blinkt bspw. die Err-LED im dritten Diagramm dreimal alle 180 ms für eine Dauer von 60ms, und dieser Zyklus wiederholt sich nach 1380ms. Wenn der Fehler behoben ist, erlischt die LED.

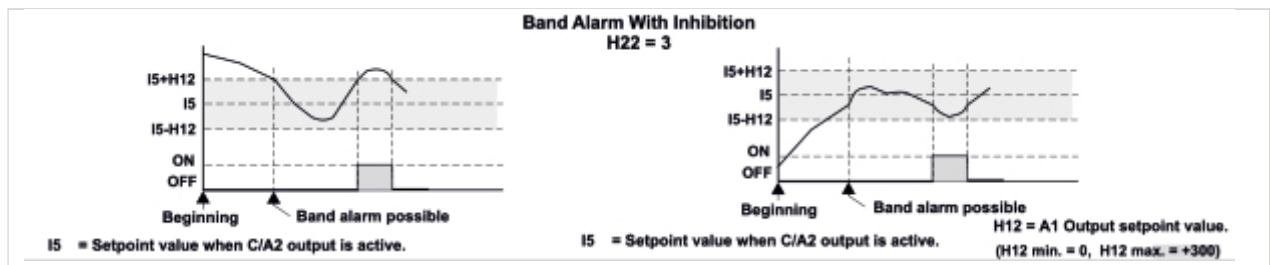
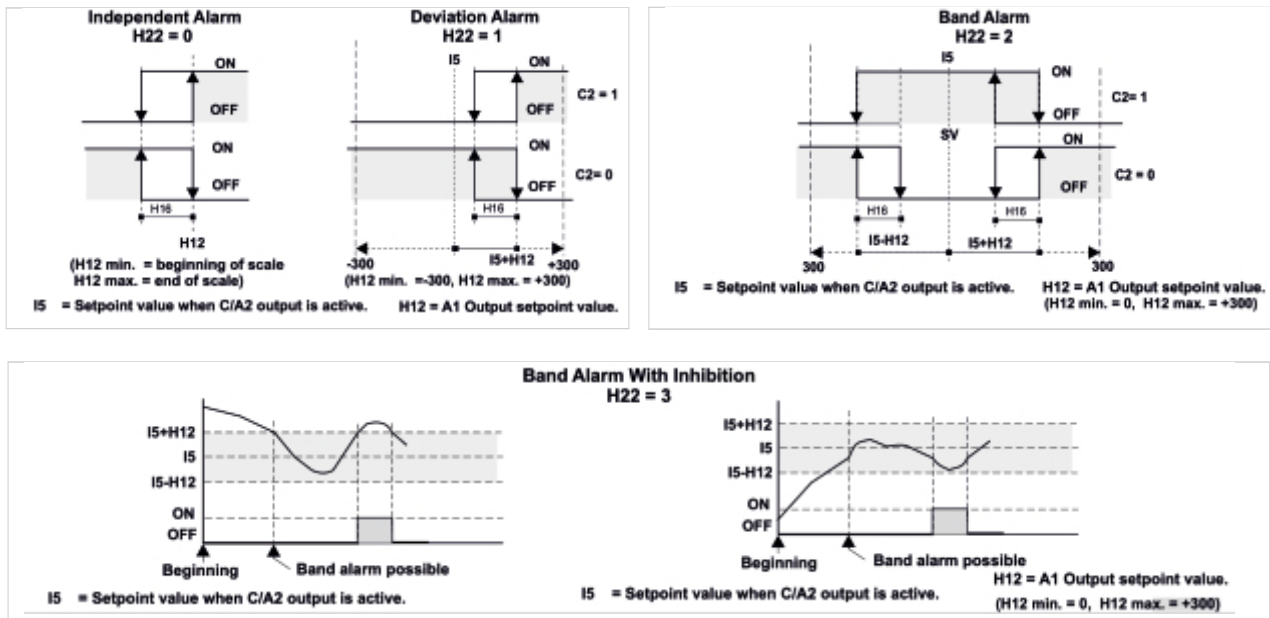
Abmessungen



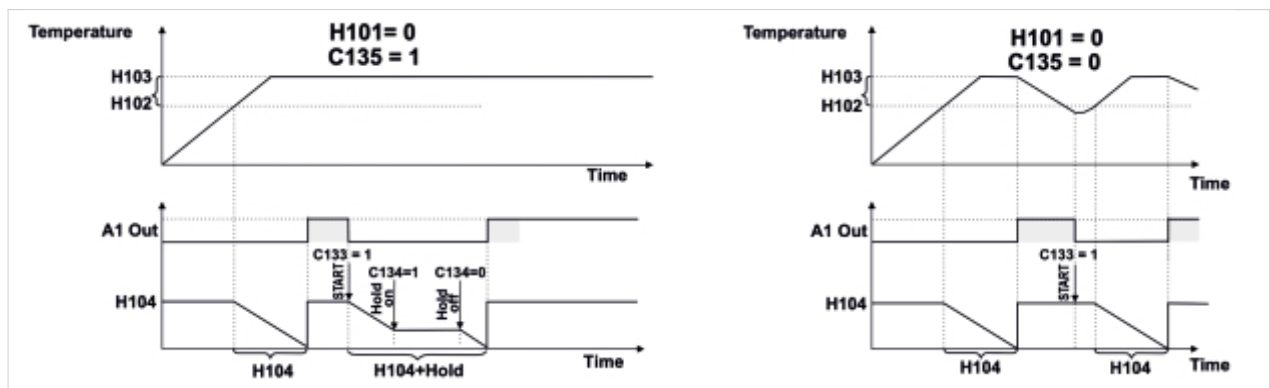
HINWEIS: Die Maßeinheit ist Millimeter.

Alarm 1 und Alarm 2 Ausgangstypen

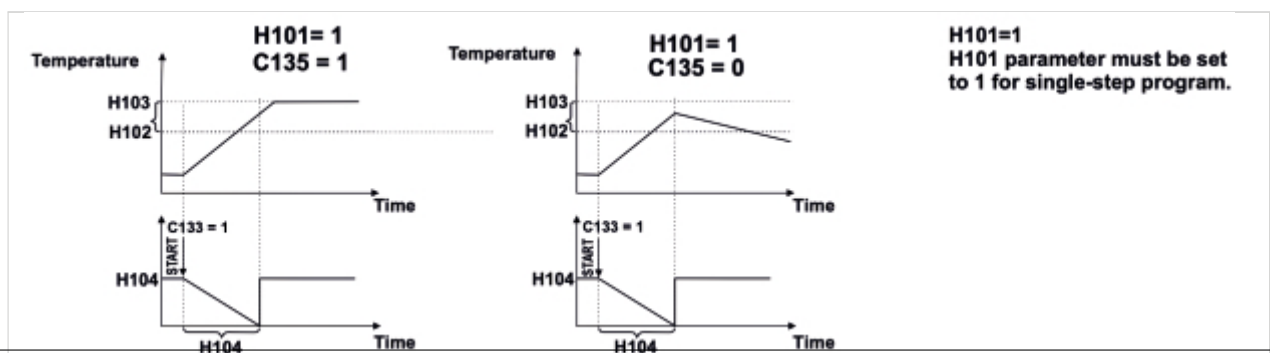
Diagrams are based on Alarm1 graphics.



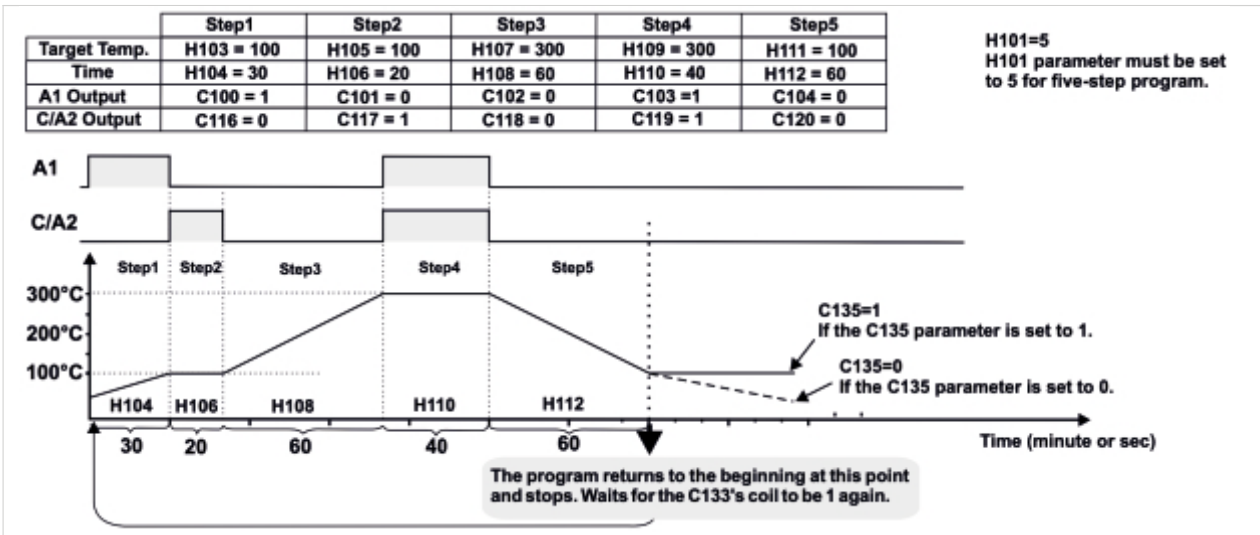
Beispiele für Timer-/Thermostatausgänge



Beispiele für Profilsteuerungsausgänge



Beispiel für eine mehrstufige Profilsteuerungsausgabe



ENDA EUP1222 Universal-PID-Regler Modbus-Zuordnung

Holding Registers

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H0	0	0x0000	word	Control output, temperature set-point value	Readable Writable	400
H1	1	0x0001	word	Control output, 2nd temperature setpoint value	Readable Writable	500
H2	2	0x0002	word	Control output, minimum setpoint value	Readable Writable	-30
H3	3	0x0003	word	Control output, maximum setpoint value	Readable Writable	600
H4	4	0x0004	word	Control output, proportional band setpoint value (Adjustable between %0.0 and %100.0)	Readable Writable	40
H5	5	0x0005	word	Control output, hysteresis value (Adjustable between 1 and 50°C or °F)	Readable Writable	2
H6	6	0x0006	word	Control output, integral time (Adjustable between 0.0 and 100.0 minute)	Readable Writable	40
H7	7	0x0007	word	Control output, derivative time (Adjustable between 0.00 and 25.00 minute)	Readable Writable	100
H8	8	0x0008	word	Control output, time period set-point value (Adjustable between 1 and 125 second)	Readable Writable	1

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H9	9	0x0009	word	Control output, set value power ratio (Adjustable between %0 and %100)	Readable Writable	0
H10	10	0x000A	word	Control output, set value power ratio in case of sensor failure (Adjustable between %0 and %100)	Readable Writable	0
H11	11	0x000B	word	Soft start time for control output (Adjustable between 0 - 250 min.)	Readable Writable	0
H12	12	0x000C	word	Alarm 1 output temperature set-point value	Readable Writable	500
H13	13	0x000D	word	Alarm 1 output minimum set point value limit	Readable Writable	-30
H14	14	0x000E	word	Alarm 1 output maximum set point value limit	Readable Writable	600
H15	15	0x000F	word	Alarm 1 output proportional band set value (Adjustable between %0.0 and %100.0)	Readable Writable	0
H16	16	0x0010	word	Alarm 1 output hysteresis value (Adjustable between 1 and 50°C or °F)	Readable Writable	2
H17	17	0x0011	word	Alarm 1 output, integral time (Adjustable between 0.0 and 100.0 minute)	Readable Writable	0
H18	18	0x0012	word	Alarm 1 output, derivative time (Adjustable between 0.00 and 25.00 minute)	Readable Writable	0
H19	19	0x0013	word	Period time value of the Alarm 1 output (Adjustable between 1-250 sec.)	Readable Writable	1
H20	20	0x0014	word	Alarm 1 output, set value power ratio (Adjustable between %0 and %100)	Readable Writable	0
H21	21	0x0015	word	Alarm 1 output, set value power ratio in case of sensor failure (Adjustable between %0 and %100)	Readable Writable	0
H22	22	0x0016	word	Alarm 1 output type selection. 0 = Independent alarm, 1 = Deviation alarm, 2 = Band alarm, 3 = Active alarm after in band time 4 = Alarm 1 output, independent cooling control, 5 = Alarm 1 output relative cooling control,	Readable Writable	0

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
H23	23	0x0017	word	Alarm 2 output, temperature set-point value	Readable Writable	500
H24	24	0x0018	word	Alarm 2 output minimum set point value limit	Readable Writable	-30
H25	25	0x0019	word	Alarm 2 output maximum set point value limit	Readable Writable	600
H26	26	0x001A	word	Alarm 2 output, hysteresis value (Adjustable between 1 and 50°C or °F)	Readable Writable	2
H27	27	0x001B	word	Alarm 2 output type selection. 0 = Independent alarm, 1 = Deviation alarm, 2 = Band alarm, 3 = Active alarm after in band time	Readable Writable	0
H28	28	0x001C	word	Input Type Selection 0 = PT100 decimal, 1 = PT100, 2 = Jdecimal, 3 = J, 4 = Kdecimal, 5 = K, 6 = Ldecimal, 7 = L, 8 = Tdecimal, 9 = T, 10 = S, 11 = R, 12 = 0-20mA, 13 = 4-20mA, 14 = 0-10V, 15 = 2-10V, 16 = 0-25mV, 17 = 0-50mV	Readable Writable	3
H29	29	0x001D	word	Control output heating control time (If 0,output heating error control is not performed. Values up to 1000 seconds can be entered. If the temperature change is not provided at the end of the time, an error message is generated.)	Readable Writable	60
H30	30	0x001E	word	Modbus baudrate 0 = 2400, 1 = 4800, 2 = 9600, 3 = 19200, 4 = 38400, 5 = 57200, 6 = 115200	Readable Writable	2
H31	31	0x001F	word	Digital filter coefficient (Adjustable between 1-200. If digital filter coefficient is 1, digital filter disabled).	Readable Writable	20
H32	32	0x0020	word	Control output, selection value 0 = C/A2 (Röle) output, 1 = SSR output, 2 = SSR/ANL output 0-20mA output, 3 = SSR/ANL output 4-20mA output	Readable Writable	0

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H33	33	0x0021	word	Minimum percentage of analog output value	Readable Writable	0
H34	34	0x0022	word	Maximum percentage of analog output value	Readable Writable	100
H35	35	0x0023	word	Offset value (Adjustable between -100 and 100)	Readable Writable	0
H36	36	0x0024	word	Function control parameter. (If 23040d (5A00h) value is entered, self tune is stopped.) (If 23041d (5A01h) value is entered, self tune is started.) (If 23042d (5A02h) value is entered, H1...H41 and C0...C10 parameters returns to the factory defaults.) (If 23043d (5A03h) value is entered, H100...H137 and C100...C138 parameters returns to the factory defaults.) (This parameter should not change from ENDALink app!!)	Readable Writable	0
H39	39	0x0027	word	Manual control output percentage (Adjustable between %0 and %100)	Readable Writable	50
H40	40	0x0028	word	D1 digital contact input control parameter: If 0, D1 input is not used. If 1 and D1 input is OFF = H0. If 1, D1 input is ON, H2 parameter is used as control set value. If 2 and D1 input is OFF = Auto control. If ON, manual control. If 3 and D1 input is OFF = Thermostat. If ON, indicator mode is entered. If 4 and D1 input is OFF = Profile Start. If ON, Profile Stop. If 5 and D1 input is OFF = Hold OFF. If ON, Hold ON.	Readable Writable	0
H41	41	0x0029	word	D2 digital contact input control parameter: If 0, D2 input is not used. If 1 and D2 input is OFF = H0. If 1, D2 input is ON, H2 parameter is used as control set value. If 2 and D2 input is OFF = Auto control. If ON, manual control. If 3 and D2 input is OFF = Thermostat. If ON, indicator mode is entered. If 4 and D2 input is OFF = Profile Start. If ON, Profile Stop. If 5 and D2 input is OFF = Hold OFF. If ON, Hold ON.	Readable Writable	0

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
H42	42	0x002A	word	Retransmission output control parameter. 0 = Retransmission out is off, 1 = Analog output is 0-20mA Retransmission out, 2 = Analog output is 4-20mA Retransmission out ATTENTION!! For this parameter to be set, H32 = 0.	Readable Writable	0
H43	43	0x002B	word	Retransmission output lower scale value	Readable Writable	-30
H44	44	0x002C	word	Retransmission output upper scale value	Readable Writable	600
H45	45	0x002D	word	Decimal point settings for mA, V inputs.	Readable Writable	0
H46	46	0x002E	word	User lower scale limit for 0-20mA, 4-20mA, 0-10V and 2-10V input selections	Readable Writable	-1999
H47	47	0x002F	word	User upper scale limit for 0-20mA, 4-20mA, 0-10V and 2-10V input selections	Readable Writable	2000
H48	48	0x0030	word	ModBus slave address	Readable Writable	1
H52	52	0x0034	word	Time to turn off the outputs after the RS485 signal is cut off (Adjustable between 2 and 9999 seconds. ATTENTION!! C11 = 1 for this timing to work.)	Readable Writable	2
H100	100	0x0064	word	Profile time base set value. (0 = 9999s, 1 = 9999m)	Readable Writable	0
H101	101	0x0065	word	Maximum number of steps (Adjustable between 0 and 16. If it is 0, in timer/thermostat mode)	Readable Writable	8
H102	102	0x0066	word	Step end temperature difference. (It can be set between 0 and H3 parameter. If the step time is reached before the target temperature is reached when the profile is checked, then the difference between the target temperature and the measured temperature is expected to be less than or equal to this parameter value and then proceed to the next step. If the difference is smaller than or equal to this parameter, the timer is switched on)	Readable Writable	5
H103	103	0x0067	word	1st. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	200

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H104	104	0x0068	word	1st. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	60
H105	105	0x0069	word	2nd. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	201
H106	106	0x006A	word	2nd. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	61
H107	107	0x006B	word	3rd. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	202
H108	108	0x006C	word	3rd. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	62
H109	109	0x006D	word	4th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	203
H110	110	0x006E	word	4th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	63
H111	111	0x006F	word	5th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	204
H112	112	0x0070	word	5th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	64
H113	113	0x0071	word	6th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	205
H114	114	0x0072	word	6th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	65
H115	115	0x0073	word	7th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	206

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H116	116	0x0074	word	7th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	66
H117	117	0x0075	word	8th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	207
H118	118	0x0076	word	8th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	67
H119	119	0x0077	word	9th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	208
H120	120	0x0078	word	9th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	68
H121	121	0x0079	word	10th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	209
H122	122	0x007A	word	10th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	69
H123	123	0x007B	word	11th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	210
H124	124	0x007C	word	11th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	70
H125	125	0x007D	word	12th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	211
H126	126	0x007E	word	12th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	71
H127	127	0x007F	word	13th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	212

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
H128	128	0x0080	word	13th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	72
H129	129	0x0081	word	14th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	213
H130	130	0x0082	word	14th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	73
H131	131	0x0083	word	15th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	214
H132	132	0x0084	word	15th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	74
H133	133	0x0085	word	16th. Step, set value of target temperature (Parameter set between H2 and H3)	Readable Writable	215
H134	134	0x0086	word	16th. Step, time value (Can be set between 0 and 9999s or 9999m (varies according to H100 parameter))	Readable Writable	75
H135	135	0x0087	word	Thermostat mode step time (Can be set between 0 and 9999s or 9999m (if C132 = 0 step time value))	Readable Writable	30

Coil Registers

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
C0	0	0x0000	Bit	Alarm 2 Status 0 = Alarm on under set value, 1 = Alarm on above set value	Readable Writable	1
C1	1	0x0001	Bit	Alarm 2 output position in case of probe failure. 0 = Alarm 2 off. 1 = Alarm 2 on.	Readable Writable	1
C2	2	0x0002	Bit	Alarm 1 Status. 0 = Alarm on under set value, 1 = Alarm on above set value	Readable Writable	1
C3	3	0x0003	Bit	Alarm 1 output position in case of probe failure. 0 = Alarm 1 off. 1 = Alarm 1 on.	Readable Writable	1

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
C4	4	0x0004	Bit	Control output configuration. 0 = Heating control, 1 = Cooling control	Readable Writable	0
C5	5	0x0005	Bit	Temperature unit. 0 = °C, 1 = °F	Readable Writable	0
C6	6	0x0006	Bit	Control outputs active. 0 = Display mode (Outputs Off), 1 = Control output active	Readable Writable	1
C7	7	0x0007	Bit	Controlling according to 2nd temperature setpoint. 0 = Temperature control according to H0 parameter. 1 = Temperature control according to H1 parameter.	Readable Writable	0
C8	8	0x0008	Bit	Manual control bit. 0 = Automatic control, 1 = C/A2 output or ANL/SSR output is given according to the output percentage in the H39 parameter.	Readable Writable	0
C9	9	0x0009	Bit	Control format in case of probe failur. 0 = According to H10 percentage value proportional control. 1 = Error found before the set-point control is done with the value of the proportional control.	Readable Writable	0
C10	10	0x000A	Bit	Self tune control selection. 0 = Selftune is stopped. 1 = Selftune is started.	Readable Writable	0
C11	11	0x000B	Bit	Rs485 disconnection error checking. 0 = RS485 connection error check is off. 1 = RS485 connection error check is active.	Readable Writable	0
C100	100	0x0064	Bit	Step 1 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 1. step. 1 = A1 output is ON at 1. step.	Readable Writable	0
C101	101	0x0065	Bit	Step 2 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 2. step. 1 = A1 output is ON at 2. step.	Readable Writable	0
C102	102	0x0066	Bit	Step 3 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 3. step. 1 = A1 output is ON at 3. step.	Readable Writable	0

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
C103	103	0x0067	Bit	Step 4 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 4. step. 1 = A1 output is ON at 4. step.	Readable Writable	0
C104	104	0x0068	Bit	Step 5 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 5. step. 1 = A1 output is ON at 5. step.	Readable Writable	0
C105	105	0x0069	Bit	Step 6 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 6. step. 1 = A1 output is ON at 6. step.	Readable Writable	0
C106	106	0x006A	Bit	Step 7 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 7. step. 1 = A1 output is ON at 7. step.	Readable Writable	0
C107	107	0x006B	Bit	Step 8 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 8. step. 1 = A1 output is ON at 8. step.	Readable Writable	0
C108	108	0x006C	Bit	Step 9 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 9. step. 1 = A1 output is ON at 9. step.	Readable Writable	0
C109	109	0x006D	Bit	Step 10 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 10. step. 1 = A1 output is ON at 10. step.	Readable Writable	0
C110	110	0x006E	Bit	Step 11 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 11. step. 1 = A1 output is ON at 11. step.	Readable Writable	0
C111	111	0x006F	Bit	Step 12 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 12. step. 1 = A1 output is ON at 12. step.	Readable Writable	0
C112	112	0x0070	Bit	Step 13 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 13. step. 1 = A1 output is ON at 13. step.	Readable Writable	0
C113	113	0x0071	Bit	Step 14 in profile steps: A1 alarm output coil. 0 = A1 output is OFF at 14. step. 1 = A1 output is ON at 14. step.	Readable Writable	0

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
C114	114	0x0072	Bit	Step 15 inprofile steps: A1 alarm output coil. 0 = A1 output is OFF at 15. step. 1 = A1 output is ON at 15. step.	Readable Writable	0
C115	115	0x0073	Bit	Step 16 inprofile steps: A1 alarm output coil. 0 = A1 output is OFF at 16. step. 1 = A1 output is ON at 16. step.	Readable Writable	0
C116	116	0x0074	Bit	Step 1 in profile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 1. step. 1 = C/A2 output is ON at 1. step.	Readable Writable	0
C117	117	0x0075	Bit	Step 2 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 2. step. 1 = C/A2 output is ON at 2. step.	Readable Writable	0
C118	118	0x0076	Bit	Step3 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 3. step. 1= C/A2 output is ON at 3. step.	Readable Writable	0
C119	119	0x0077	Bit	Step 4 in profile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 4. step. 1 = C/A2 output is ON at 4. step.	Readable Writable	0
C120	120	0x0078	Bit	Step 5 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 5. step. 1 = C/A2 output is ON at 5. step.	Readable Writable	0
C121	121	0x0079	Bit	Step 6 in profile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 6. step. 1 = C/A2 output is ON at 6. step.	Readable Writable	0
C122	122	0x007A	Bit	Step 7 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 7. step. 1 = C/A2 output is ON at 7. step.	Readable Writable	0
C123	123	0x007B	Bit	Step 8 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 8. step. 1 = C/A2 output is ON at 8. step.	Readable Writable	0

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
C124	124	0x007C	Bit	Step 9 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 9. step. 1 = C/A2 output is ON at 9. step.	Readable Writable	0
C125	125	0x007D	Bit	Step 10 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 10. step. 1 = C/A2 output is ON at 10. step.	Readable Writable	0
C126	126	0x007E	Bit	Step 11 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 11. step. 1 = C/A2 output is ON at 11. step.	Readable Writable	0
C127	127	0x007F	Bit	Step 12 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 12. step. 1 = C/A2 output is ON at 12. step.	Readable Writable	0
C128	128	0x0080	Bit	Step 13 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 13. step. 1 = C/A2 output is ON at 13. step.	Readable Writable	0
C129	129	0x0081	Bit	Step 14 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 14. step. 1 = C/A2 output is ON at 14. step.	Readable Writable	0
C130	130	0x0082	Bit	Step 15 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 15. step. 1 = C/A2 output is ON at 15. step.	Readable Writable	0
C131	131	0x0083	Bit	Step 16 inprofile steps: C/A2 alarm output coil. 0 = C/A2 output is OFF at 16. step. 1 = C/A2 output is ON at 16. step.	Readable Writable	0
C132	132	0x0084	Bit	Controlled according to the set value or profile control selection. 0 = Thermostat mode, 1 = Profile control mode	Readable Writable	0

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
C133	133	0x0085	Bit	If C133 = 0, Profile mode is stopped and returned to first step. If C133 = 1, Profile mode is started.	Readable Writable	0
C134	134	0x0086	Bit	If C134 = 0 and if Profile mode is started, process runs. If C134 = 1, profile operation is suspended at the recent point. (Hold mode).	Readable Writable	0
C135	135	0x0087	Bit	If C135 = 0, when profile finished, control process stops. (Control outputs are OFF). If C135 = 1, when profile finished, control process continues according to last set value.	Readable Writable	0
C136	136	0x0088	Bit	If C136 = 0, when power loss, profile stops and returned to first step. If C136 = 1, when power up and if temperature setpoint in the current step, Profile continues. If the temperature set point is not in the current step, returned to first step.	Readable Writable	0
C137	137	0x0089	Bit	If C137 = 0, A1 output is controlled by according to H22 parameter. If C137 = 1 and C132 = 1, A1 output is controlled by according to H135 parameter for every steps.	Readable Writable	0
C138	138	0x008A	Bit	If C138 = 0, A2 output is controlled by according to H27 parameter. If C138 = 1 and C132 = 1, C/A2 output is controlled by according to H136 parameter for every steps	Readable Writable	0

Discrete Registers

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
D0	0	0x0000	Bit	C/A2 Control output status (0 = OFF, 1 = ON)	Read Only	0
D1	1	0x0001	Bit	A1 output status (0 = OFF, 1 = ON)	Read Only	0
D2	2	0x0002	Bit	SSR output status (0 = OFF, 1 = ON)	Read Only	0
D3	3	0x0003	Bit	D1 digital input status (0 = OFF, 1 = ON)	Read Only	0

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
D4	4	0x0004	Bit	D2 digital input status (0 = OFF, 1 = ON)	Read Only	0
D5	5	0x0005	Bit	Control output heating fault status (0 = No error, 1 = Heating not possible)	Read Only	0
D100	100	0x0064	Bit	If D100 = 1, Profile is in constant temperature step	Read Only	0
D101	101	0x0065	Bit	If D101 = 1, Profile is in heating step	Read Only	0
D102	102	0x0066	Bit	If D102 = 1, Profile is in cooling step	Read Only	0
D103	103	0x0067	Bit	If D103 = 1, Profile ended.	Read Only	0
D104	104	0x0068	Bit	If D104 = 1, Step timer is 0.	Read Only	0
D105	105	0x0069	Bit	If D105 = 1, Step timer is running	Read Only	0

Input Registers

Param	Register Addresses		Data Type	Description	Permission	Default
	Decimal	Hex				
I0	0	0x0000	word	Measured temperature	Read Only	0
I1	1	0x0001	word	Percentage of analog output	Read Only	0
I2	2	0x0002	word	Measurement error codes 0 = No error, 1 = Sensor break error, 2 = Lower scale error, 3 = Upper scale error, 4 = Sensor broken, 5 = Calibration error	Read Only	0
I3	3	0x0003	word	Self tune status codes 0 =No error, 1 =Start temperature is higher than 60% of set value, 2 = Pid parameters are calculated, 3=Power set parameter is calculated	Read Only	0
I4	4	0x0004	word	Active temperature set value	Read Only	0
I5	5	0x0005	word	Current (active) decimal point value 0 = No decimal point, 1 = 0.0 Decimal point is tenths	Read Only	0
I100	100	0x0064	word	The number of the active step	Read Only	0
I101	101	0x0065	word	Remaining time display of active step	Read Only	0

Param	Register Addresses		DataType	Description	Permission	Default
	Decimal	Hex				
I102	102	0x0066	word	Target temperature value of active step	Read Only	0

Modbus Error Messages

Modbus protocol has two types error, communication error and operating error. Reason of the communication error is data corruption in transmission. Parity and CRC control should be done to prevent communication error. Receiver side checks parity and CRC of the data. If they are wrong, the message will be ignored. If format of the data is true but function doesn't perform for any reason, operating error occurs. EUP1222 realizes error and sends error message. Most significant bit of function is changed '1' to indicate error in error message by EUP1222. Error code is sent in data section. EUP1222 realizes error type via this message.

MODBUS ERROR CODES

Error Code	Name	Meaning
{01}	Illegal Function	The function code received in the query is not an allowable action for the EUP1222. If a Poll Program Complete command was issued, this code indicates that no program function preceded it.
{02}	Illegal Data Address	The data address received in the query is not an allowable address for EUP1222.
{03}	Illegal Data Value	A value contained in the query data field is not an allowable value for the EUP1222.

Message Sample:

Structure of command message (Byte Format)

Device Address		(0A) h
Function Code		(01) h
Beginning address of coils	MSB	(04) h
	LSB	(A1) h
Number of coils (N)	MSB	(00) h
	LSB	(01) h
CRC DATA	LSB	(AC) h
	MSB	(63) h

Structure of response message (Byte Format)

Device Address		(0A) h
Function Code		(81) h
Error Code		(02) h
CRC DATA	LSB	(B0) h
	MSB	(53) h

As you see in command message, coil information of (4A1) h = 1185 is required but there isn't any coil with 1185 address. Therefore error code with number (02) (Illegal Data Address) sends.

NFC



ENDALink ist eine mobile Anwendung, die eine schnelle und sichere Datenübertragung zwischen NFC-fähigen ENDA-Geräten und Mobilgeräten ermöglicht.



Um mit einem NFC-fähigen ENDA-Gerät zu kommunizieren, muss Ihr Mobilgerät NFC unterstützen.



Sie können die folgenden QR-Codes scannen, um unsere EndaLink-Anwendung auf Google Play und im AppStore aufzurufen.

Google Play



App Store



Zurücksetzen des NFC-Passworts über EndaLink

Wenn der Befehl zum Zurücksetzen des NFC-Passworts über EndaLink gesendet wird, beginnt die NFC-LED am Gerät zu blinken. Wenn das Zurücksetzen des NFC-Passworts erfolgreich war, leuchtet die NFC-LED 3 Sekunden lang ohne zu blinken. Wenn der Vorgang fehlschlägt, blinkt die NFC-LED weiter und leuchtet nicht dauerhaft.