Read the user manual carefully before using the device! The user is responsible for any damage, loss, or accidents resulting from not following the warnings in the user manual. In case of damage, the device will not be covered under warranty.

EDT3511

Defrost Control Device

- 35×77×68 mm. size,
- User-friendly control with touch buttons,
- On-Off control,
- 1 relay output for compressor,
- Single NTC probe input for compressor,
- Offset value can be entered for NTC input,
- Cooling or heating control type selection,
- Adjustable compressor protection parameters feature,
- Adjustable compressor operation, stop or periodic operation in case of probe failure,
- Selectable smart defrost feature,
- Capability of time-based or manual defrost depending on time,
- Ability to set the lower and upper limits of the set value,
- Adjustable defrost duration and interval options,
- Alarm lower and upper limit and delay settings,
- Ability to display temperature units as °F or °C,
- Compressor or door alarm control via digital input,
- Buzzer alarm functionality,
- Parameter editing and loading via NFC,
- Communication feature with RS485 ModBus RTU protocol (optional),
- CE marked according to EN standards.

Order Code

EDT3511 - 230 - 1 2

1 - Output
20 …30A Relay Output
Non-option …8A Relay Output
2 - Modbus Selection
RS …Modbus

Technical Specifications

Electrical Specifications

Supply Voltage	230V AC +%10 - %20, 50/60Hz
Power Consumption	Maximum 1.4VA
Wiring	2.5mm² terminal
Line Resistance	Max. 100ohm
Scale	-60.0 …+150.0°C (-76.0 …+302.0°F)
Sensitivity	0.1°C (Selectable as 0.1°C or 1°C)
Accuracy	±1°C
Screen	3.5 digits, 12.5mm, 7-segment LED
EMC	EN 61326-1: 2021
Safety Requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

Environmental Specifications

Ambient/Storage Temperature	0 …+50°C/-25 …70°C (without freezing)
Relative Humidity	Operates at %80 humidity up to 31°C, then decreases linearly to %50 at 40°C
Protection Rating	Front panel: IP65 Back panel: IP20 according to EN 60529 standard
Operational Height	Maximum 2000m

⚠ **KEEP AWAY device from exposed to corrosive, volatile and flammable gasses or liquid**

Outputs

Compressor Relay Output	**8A Relay :** NO + NC 250V AC, 8A, (for resistive load) **20A Relay :** NO 277V AC, 30A, (for resistive load)
Relay Life	**8A Relay :** 30,000,000 switching under no load, 300,000 switching at 250V AC, 8A resistive load **20A Relay :** 30,000,000 switching under no load, 100,000 switching at 277V AC, 30A resistive load

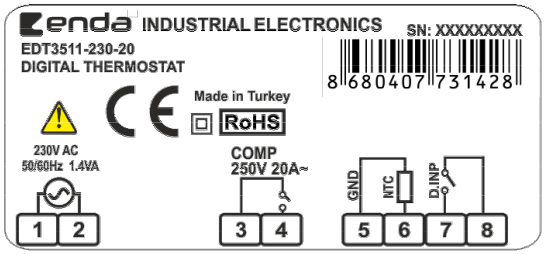
Control	
Control Format	Single set-point and alarm control
Control Method	On-Off control
A/D Converter	12 bit, sampling time 100ms
Hysteresis	Adjustable between 0.1 …15.0°C/F

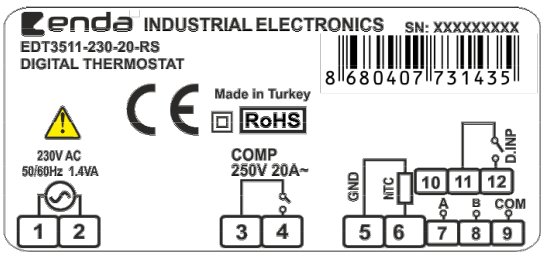
Housing	
Mounting Style	Press fit into the panel
Dimensions	W77xH35xD68mm
Weight	Approximately 190g (Packaged)
Housing Material	Self-extinguishing plastics are used

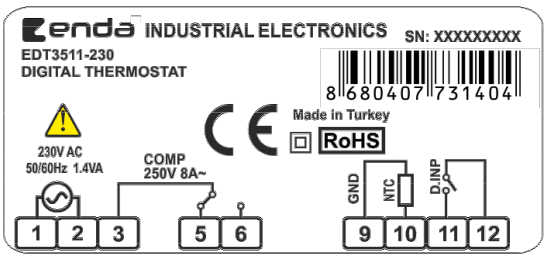
⚠ **The device should not be cleaned with solvents (thinner, gasoline, acid, etc.) or abrasive cleaning agents.**

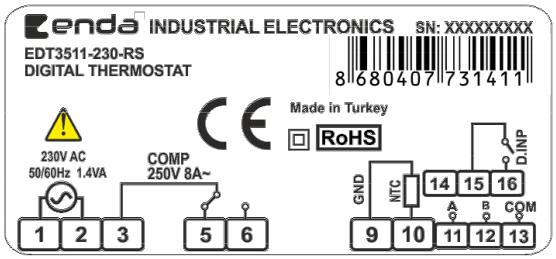
Connection Diagram

EDT3511 is a panel type defrost control device. The device must be used in accordance with the instructions. Installation and electrical connections must be carried out by technical personnel in accordance with the instructions in the user manual. During installation, care must be taken to ensure that there is no electricity. The device must be protected from humidity, vibration, and pollution. Operating temperature should be observed. Installation cables should not pass near high-power lines or other devices.



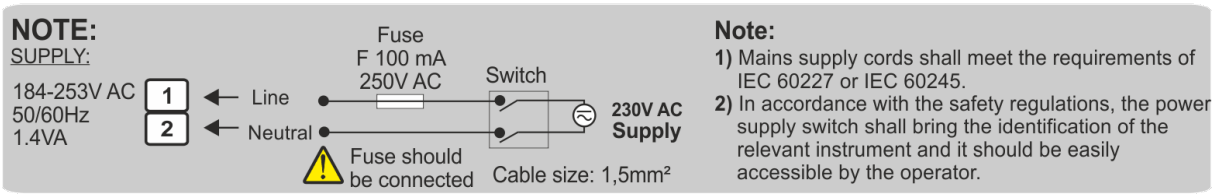






Holding screw 0.4-0.5Nm

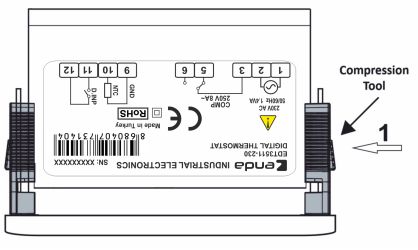
Equipment is protected throughout by DOUBLE INSULATION.

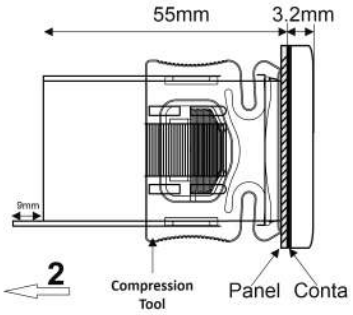


Note:

1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

Dimensions and Montage



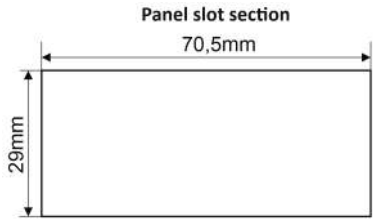


To removing mounting clamps:
1: Push the flush-mounting clamp in direction 1 as shown in the figure above

2: Then, pull out the clamp in direciton 2

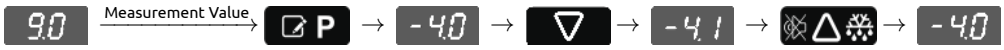
NOT:
1: Panel thickness should be maximum 7mm.

2: If there is no 60mm free space at the back side of the device, it would be difficult to remove it from the panel.



Panel Commands

Displaying and Changing the Set Value



In operation mode, pressing the P button displays the set value. It can be changed with the ❄△❄ and ▽ buttons.

Locking and Unlocking the Keys

In operation mode, pressing P + ⏻ buttons together for 3 seconds or no key is pressed for 60 seconds, displays the Loc message and locks the buttons. If any button is pressed for 2 seconds the unL message will be displayed and unlocks the buttons.

Manual Defrost Operation

In operation mode, pressing the button for 2 seconds initiates or stops the defrost operation manually. If parameter d3 is 0, manual defrost is disabled.

Manual On / Off the Device

In operation mode (without button lock), pressing the button for 3 seconds turns off the display, temperature measurement and control are not performed, and the output becomes inactive. Pressing the button again for 3 seconds turns on the display, and the device continues temperature measurement and control.

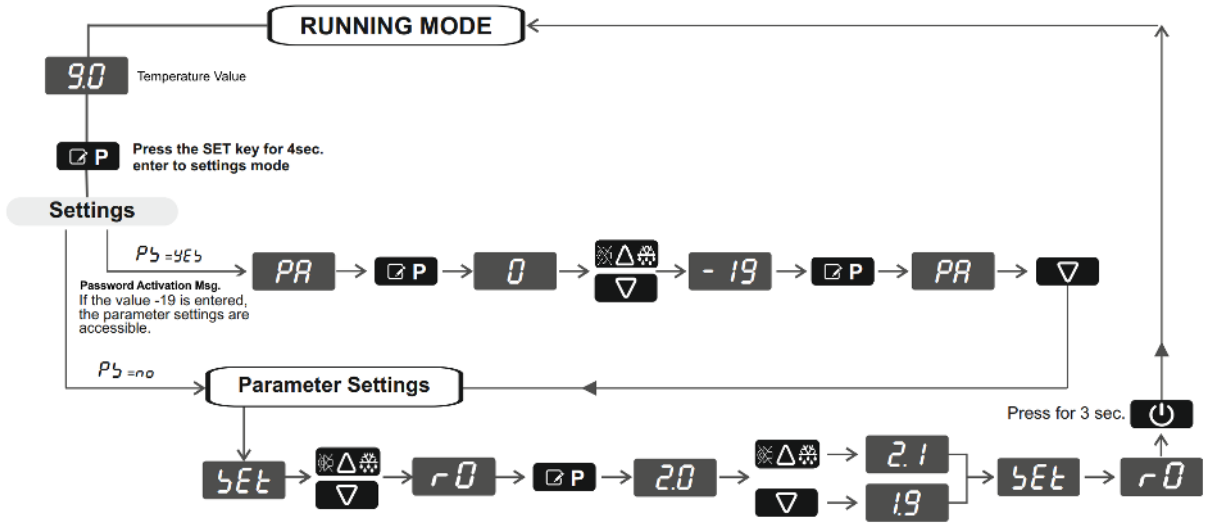
Restoring Factory Settings

If parameter P5 is selected as YES, the security parameter is set to "PA" -44 by pressing the P button, then the display shows the dF message, then the device returns to factory settings and returns to the operating mode. If parameter P5 is selected as no, in operation mode, press the P button first, then press the button together for 5 seconds to display the dF message on the display for 4 seconds, then the device returns to factory settings and returns to the operating mode.

Displaying the Revision Date

In operation mode, pressing the + buttons displays the device code first, then the revision date as YY/MM/DD.

Changing Parameter Values



In operating mode, if the P button is pressed for 4 seconds the password message PA on the display. Press the P button to set the password as **"-19"**, then press the P button, then press either the ❄△❄ or ▽ button to enter the parameter menu. When the desired parameter message to be adjusted is displayed with the ❄△❄ and ▽ buttons, press the P button to display the value of that parameter. The value of the relevant parameter can be changed with the ❄△❄ and ▽ buttons. If no action is taken while the parameter value is displayed, or if the P button is pressed, it returns to the name of the parameter. While the parameter name is displayed, pressing the ⏻ button for 3 seconds exits without waiting.

Leds and Touch Key Definitions

Led Definitions

	ON/OFF Led : - Does not light up when the device is on (ON), lights up when it is off (OFF).
	Compressor Led : - Lights up when the compressor is running, flashes when protection delays are active, and turns off when not running.
	Defrost Led : - Lights up during defrost, flashes when protection delays and drip-drain time are active, and turns off when not running.
°C	**Celcious Led :** - Lights up if the temperature unit is set to °C (Celsius).
°F	**Fahrenheit Led :** - Lights up if the temperature unit is set to °F.
	Warning Led : - Flashes during alarm and error conditions.

Key Definitions

P	**Set Button :** - Displays the set value in operation mode, - In Programming Mode, displays the value of the selected parameter, and confirms the changed parameter value.
	Up Button : - If conditions are suitable in operation mode, starts manual defrost, - In Programming Mode, switches between parameters, and increases the value of the selected parameter.
	Down Button : - In Programming Mode, switches between parameters, and decreases the value of the selected parameter.
	ON/OFF Button : - Turns the device off / on in operation mode, - In Programming Mode, returns from the parameter menu to the operating mode.

Error - Warning - Alarm Definitions

Definition		Outputs
PFA	**NTC Probe Error** - NTC sensor is faulty or not connected. - Please check the sensor connection. - Compressor works for C4 ve C5 parameters.	Output is turned off.
Psc	**NTC Probe Error** - Short circuit in the NTC sensor or line. - Please check the sensor connection.	Output is turned off.
Ah	**High Temperature Alarm** - Check the A4 parameter.	Output remains unchanged.
AL	**Low Temperature Alarm** - Check the A1 parameter.	Output remains unchanged
iA	**External Alarm** - Check the i5 and i7 parameters.	Output remains unchanged
S iA	**Serious External Alarm** - Check the i5 and i7 parameters.	Output is turned off
id	**Door Open Alarm** - Please check door connection. - Check the i5 and i7 parameters.	Output is turned off

Control Parameters

Display	Description	Min	Max	Unit	Default
SEt	Setpoint value	r1	r2	°C / °F	0
cA1	Probe offset value	-25	25	-	0
r0	Setpoint differential	0	15	-	2
r1	Setpoint value for lower limit	-60	r2	°C / °F	-60
r2	Setpoint value for upper limit	r1	150	°C / °F	150
r5	Heating or cooling selection 0: Cooling mode(Defrost aktif) 1: Heating mode(Defrost disabled)	0	1	-	0

Configuration Parameters

Display	Description	Min	Max	Unit	Default
P1	Decimal point no: Undotted YES: Dot	no	YES	-	no
P2	Temperature unit °C: Centigrade °F: Fahrenheit	°C	°F	-	°C
P5	Value selection to be displayed on the operating screen td: The cabinet temperature is displayed. SPd: The set value is displayed.	td	SPd	-	td
P6	Should a password be required when entering the parameter menu? no: No, no password required. YES: Yes, require a password.	no	YES	-	YES

Digital Input Parameters

Display	Description	Min	Max	Unit	Default
i1	Digital input contact selection no: Active when digital input contact is closed. nc: Active when digital input is on.	no	nc	-	no
i5	Digital input function 0: Digital input not used. 1: At the end of i7 time, the IA message will flash on the screen until the external alarm is cleared. 2: At the end of i7 time, the compressor is stopped, and the iA message flashes on the screen until the external alarm is cleared. 3: The compressor is stopped until the door is closed, and the id message flashes on the screen at the end of the I7 time.	0	3	-	3
i7	Delay for digital input	0	120	min	30

Compressor Protection Parameters

Display	Description	Min	Max	Unit	Default
c0	Compressor-on delay from power-on	0	199	min	1
c2	Minimum compressor-off time	0	199	min	3
c3	Minimum compressor-on time	0	199	s	0
c4	Compressor-off time in probe alarm	0	199	min	10
c5	Compressor-on time in probe alarm	0	199	min	10

Defrost Control Parameters

Display	Description	Min	Max	Unit	Default
d0	Automatic defrost interval (If 0 is selected, defrost will not be performed)	0	199	hr	8
d3	Defrost duration (If 0 is selected, defrost will not be performed)	0	199	min	30

Display	Description	Min	Max	Unit	Default
d4	Enable defrost at power-on d.no: Defrost does not start when power is on. d.YE: Defrost starts when the energy comes on.	d.no	d.YE	-	d.no
d5	Defrost delay from power-on (This is valid for d4 = dYE)	0	199	min	0
d6	During defrost, display configuration 0: During defrost, the cabinet temperature is displayed. 1: If the cabinet temperature is below the SEt + r0 value, it is displayed; otherwise, the SEt + r0 value is shown. When defrost is finished, the displayed value remains unchanged until the cabinet temperature drops below the SEt + r0 value.	0	1	-	1
d8	Defrost interval count mode 0: The defrost counter (time between 2 defrosts) is decremented regardless of the compressor status. 1: The defrost counter is decremented as long as the compressor is running.	0	1	-	0

Alarm Control Parameters

Display	Description	Min	Max	Unit	Default
A1	Low temperature alarm threshold	-60	150	°C / °F	-60
A2	Type of low temperature alarm no: Disabled rel: Relative to set-point alarm (Alarm value = SEt - A1) Abs: Absolute alarm (Alarm value = A1)	no	Abs	-	Abs
A4	High temperature alarm threshold	-60	150	°C / °F	150
A5	Type of high temperature alarm no: Disabled rel: Relative to set-point alarm (Alarm value = SEt + A4) Abs: Absolute alarm (Alarm value = A4)	no	Abs	°C / °F	Abs
A6	High temperature alarm delay from power-on	0	199	min	120
A7	High/low temperature alarm delay	0	199	min	15
A8	High temperature alarm delay post-defrosting	0	199	min	15

Modbus Communication Parameters

Display	Description	Min	Max	Unit	Default
Ad	Modbus slave device address	1	247	-	1
br	Baud Rate Off: OFF 2.4: 2400 bps 4.8: 4800 bps 9.6: 9600 bps 19.2: 19200 bps 38.4: 38400 bps 57.2: 57200 bps	oFF	572	bps	9.6

EDT3511 Defrost Control Device Modbus Map

Holding Registers

Register Addresses Decimal	Register Addresses Hex	Data Type	Description	Display	Permission
0	0x0000	word	Setpoint value [°C / °F]	SEt	Readable Writable
1	0x0001	word	Probe offset value	cA 1	Readable Writable
2	0x0002	word	Setpoint differential	r0	Readable Writable
3	0x0003	word	Setpoint value for lower limit [°C / °F]	r 1	Readable Writable
4	0x0004	word	Setpoint value for upper limit [°C / °F]	r2	Readable Writable
5	0x0005	word	Digital input function 0: Digital input not used. 1: At the end of i7 time, the iA message will flash on the screen until the external alarm is cleared. 2: At the end of i7 time, the compressor is stopped, and the SiA message flashes on the screen until the external alarm is cleared. 3: The compressor is stopped until the door is closed, and the id message flashes on the screen at the end of the I7 time.	i5	Readable Writable
6	0x0006	word	Delay for digital input [min]	i7	Readable Writable

Register Addresses		Data Type	Description	Display	Permission
Decimal	Hex				
7	0x0007	word	Compressor-on delay from power-on [min]	c0	Readable Writable
8	0x0008	word	Minimum compressor-off time [min]	c2	Readable Writable
9	0x0009	word	Minimum compressor-on time [s]	c3	Readable Writable
10	0x000A	word	Compressor-off time in probe alarm [min]	c4	Readable Writable
11	0x000B	word	Compressor-on time in probe alarm [min]	c5	Readable Writable
12	0x000C	word	Automatic defrost interval (If 0 is selected, defrost will not be performed) [hr]	d0	Readable Writable
13	0x000D	word	Defrost duration (If 0 is selected, defrost will not be performed) [min]	d3	Readable Writable
14	0x000E	word	Defrost delay from power-on (This is valid for d4 = dYE) [min]	d5	Readable Writable
15	0x000F	word	Low temperature alarm threshold [°C / °F]	A1	Readable Writable
16	0x0010	word	Type of low temperature alarm 0: Disabled 1: Relative to set-point alarm (Alarm value = SEt - A1) 2: Absolute alarm (Alarm value = A1)	A2	Readable Writable
17	0x0011	word	High temperature alarm threshold [°C / °F]	A4	Readable Writable
18	0x0012	word	Type of high temperature alarm [°C / °F] 0: Disabled 1: Relative to set-point alarm (Alarm value = SEt + A4) 2: Absolute alarm (Alarm value = A4)	A5	Readable Writable
19	0x0013	word	High temperature alarm delay from power-on [min]	A6	Readable Writable
20	0x0014	word	High/low temperature alarm delay [min]	A7	Readable Writable
21	0x0015	word	High temperature alarm delay post-defrosting [min]	A8	Readable Writable
22	0x0016	word	Modbus slave device address	Ad	Readable Writable

Register Addresses Decimal	Register Addresses Hex	Data Type	Description	Display	Permission
23	0x0017	word	Baud Rate[bps] 0: OFF 1: 2400 bps 2: 4800 bps 3: 9600 bps 4: 19200 bps 5: 38400 bps 6: 57200 bps	br	Readable Writable

Coils

Register Addresses Decimal	Register Addresses Hex	Data Type	Description	Display	Permission
0	0x0000	bit	Decimal point 0: Undotted 1: Dot	P 1	Readable Writable
1	0x0001	bit	Temperature unit 0: Centigrade 1: Fahrenheit	P2	Readable Writable
2	0x0002	bit	Value selection to be displayed on the operating screen 0: The cabinet temperature is displayed. 1: The set value is displayed.	P5	Readable Writable
3	0x0003	bit	Digital input contact selection 0: Active when digital input contact is closed. 1: Active when digital input is on.	i 1	Readable Writable
4	0x0004	bit	Heating or cooling selection 0: Cooling mode(Defrost aktif) 1: Heating mode(Defrost disabled)	r5	Readable Writable
5	0x0005	bit	Enable defrost at power-on 0: Defrost does not start when power is on. 1: Defrost starts when the energy comes on.	d4	Readable Writable
6	0x0006	bit	During defrost, display configuration 0: During defrost, the cabinet temperature is displayed. 1: If the cabinet temperature is below the SEt + r0 value, it is displayed; otherwise, the SEt + r0 value is shown. When defrost is finished, the displayed value remains unchanged until the cabinet temperature drops below the SEt + r0 value.	d6	Readable Writable

Register Addresses Decimal	Hex	Data Type	Description	Display	Permission
7	0x0007	bit	Defrost interval count mode 0: The defrost counter (time between 2 defrosts) is decremented regardless of the compressor status. 1: The defrost counter is decremented as long as the compressor is running.	dB	Readable Writable
8	0x0008	bit	The key lock active / inactive 0: The keylock inactive 1: The keylock active		Readable Writable
9	0x0009	bit	Starting or stopping manual defrost 0: Stopping manual defrost 1: Starting manual defrost		Readable Writable
10	0x000A	bit	Manual on/off the device 0: Device off 1: Device on		Readable Writable
11	0x000B	bit	Restoring factory (default) settings 0: 1: The factory setting is loaded.		Readable Writable
12	0x000C	bit	Restarting the device 0: 1: The device will be restarted.		Readable Writable
13	0x000D	bit	Should a password be required when entering the parameter menu? 0: No, no password required. 1: Yes, require a password.	P5	Readable Writable

Input Registers

Register Addresses Decimal	Hex	Data Type	Description	Display	Permission
0	0x0000	word	Measured temperature value [°C / °F]		Readable

Discrete Inputs

Register Addresses Decimal	Hex	Data Type	Description	Display	Permission
0	0x0000	bit	Compressor output timing active (0 = OFF, 1 = ON)		Readable
1	0x0001	bit	Compressor output status (0 = OFF, 1 = ON)		Readable
2	0x0002	bit	Low temperature alarm timing active (0 = OFF, 1 = ON)		Readable

Register Addresses		Data Type	Description	Display	Permission
Decimal	Hex				
3	0x0003	bit	High temperature alarm timing active (0 = OFF, 1 = ON)		Readable
4	0x0004	bit	Low temperature alarm (0 = No alarm, 1 = Alarm present)	AL	Readable
5	0x0005	bit	High temperature alarm (0 = No alarm, 1 = Alarm present)	Ah	Readable
6	0x0006	bit	Defrost output status (0 = OFF, 1 = ON)		Readable
7	0x0007	bit	Device on/off status indicator (0 = OFF, 1 = ON)		Readable
8	0x0008	bit	Digital input status (0 = OFF, 1 = ON)		Readable
9	0x0009	bit	NTC probe connection failure (0 = No error, 1 = Error present) (Output is disabled)	PFA	Readable
10	0x000A	bit	NTC probe or line short circuit failure (0 = No error, 1 = Error present) (Output is disabled)	PSc	Readable
11	0x000B	bit	External alarm (0 = No alarm, 1 = Alarm present) (Output remains unchanged)	iA	Readable
12	0x000C	bit	Serious external alarm (0 = No alarm, 1 = Alarm present) (Output is disabled)	S iA	Readable
13	0x000D	bit	Door open alarm (0 = No alarm, 1 = Alarm present)	id	Readable

NFC

ENDALink, is a mobile application that provides fast and secure data sharing between NFC supported ENDA devices and mobile devices.

⚠ **To communicate with an NFC supported ENDA device, your mobile device must have NFC support.**

You can scan the QR codes below to access our EndaLink application on Google Play and the App Store.

enda link

Resetting the NFC Password via EndaLink

When an NFC password reset command is sent via EndaLink, if the device's display shows the message PcL and an audible alert is given at the same time, it means that the NFC password has been successfully reset. If the PcL message is not displayed, the reset operation has failed.