

# IDNext 1000 -HC - Eliwell APP

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## ELECTRICAL CONNECTIONS

### ⚠️ DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power from all equipment including connected devices prior to removing any covers or doors, or installing or removing any accessories, hardware, cables or wires except under the specific conditions specified in the user guide for this equipment.
- Always use a properly rated voltage sensing device to confirm the power is off where and when indicated.
- Before restoring the power supply, replace and secure all covers, hardware components and cables.
- Use only the specified voltage when operating this equipment and any associated products.
- Use appropriate safety interlocks where personnel and/or equipment hazards exist.
- Install and use this equipment in an enclosure appropriately rated for its intended environment.
- Do not use this equipment for safety-critical functions.
- Do not disassemble, repair, or modify this equipment.
- Do not connect wires to unused terminals and/or terminals indicated as "Reserved".

Failure to follow these instructions will result in death or serious injury.

### ⚠️ DANGER

#### HAZARD OF ELECTRIC SHOCK, FIRE AND/OR UNINTENDED EQUIPMENT OPERATION

- Do not expose the equipment to liquids.
- Do not exceed the temperature and humidity ranges specified in the technical data and keep the area surrounding the cooling slits aerated.
- Do not apply dangerous voltages to the SELV connection terminals (see "Wiring diagram" section).
- Only connect compatible accessories - as specified in the user guide - to the device.
- Only use cables with a suitable cross-section (see "Wiring guidelines" section).
- Only use the specified plug-in terminals (see "Best wiring practices" in the user guide).
- All network components (controllers, sensors and actuators) must be powered by separate SELV power supplies/transformers except under the specific conditions specified in the user guide for this equipment.
- No network component (controllers, sensors and actuators) can be earthed.

Failure to follow these instructions will result in death or serious injury.

### ⚠️ WARNING

#### HAZARD OF EXPLOSION, OVERHEATING AND/OR FIRE

Do not set any parameter not having the full understanding of its behavior in general and in relation to the specific application.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

### ⚠️ WARNING

#### HAZARD OF OVERHEATING AND/OR FIRE

- Do not use with loads other than those indicated in the technical data.
- Do not exceed the maximum permitted current; in the case of higher loads, use a contactor with suitable power.
- For non-inrush outputs, make sure the application has not been designed with the instrument outputs connected directly to instruments that generate a frequently activated capacitive load (1).
- For inrush outputs, make sure that no loads exceeding the ratings specified in the technical data are connected (2).
- Power lines and output connections must be suitably wired and protected by means of fuses when required by national and local regulations.
- Connect the relay outputs, including the shared pole, using cables with a cross-section of 2.5 mm<sup>2</sup> and a length of at least 200 mm (7.87 in.).

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) Even if your application not apply a frequently operated capacitive load on the relay, capacitive loads will reduce the life of any electromechanical relay, and installation of a contactor or an external relay, that is sized and maintained according the ratings and characteristics of the capacitive load, will help minimize the consequence of relay degradation.

(2) Although the highest performance relays have been selected for the inrush outputs and loads are declared in accordance with standard IEC 61810-1 D.3, it is end user responsibility that instrument outputs guarantee the proper operation of the application in relation to the expected lifecycle of the machine.

### NOTICE

#### REDUCTION OF RELAY ENDURANCE

- Do not enable zero crossing to control inductive loads such as contactors and iron-core transformers.
- Use same mains phase to supply both load and controller.

Failure to follow these instructions can result in equipment damage.

### NOTICE

#### UNINTENDED EQUIPMENT OPERATION

- The load equivalent to all the bus RS485 bus should not exceed 8 Unit Load (For the definition of Unit Load refer to standard TIA/EIA-485-A).
- Do not fit the termination resistors inside the RS485 network.
- For the connection with the supervision system, use a shielded "twisted pair" cable specific (for example: BELDEN cable model 8762).
- The length of an RS485 network is directly related to the baud rate used. At a baud rate of 9600 baud, the maximum cable length is approximately 800 mt (2,625 ft). At 19200 baud, the maximum length is reduced to approximately 400 mt (1,312 ft).

Failure to follow these instructions can result in equipment damage.

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric and Eliwell for any consequences arising out of the use of this material.

### POWER SUPPLY MODELS 12 Vac

### ⚠️ DANGER

#### HAZARD OF ELECTRIC SHOCK, OVERHEATING AND/OR FIRE

- Do not connect the equipment power supply directly to line voltage.
- Use only isolating SELV, Class 2 power supplies/transformers to supply the equipment.

Failure to follow these instructions will result in death or serious injury.

### FLAMMABLE REFRIGERANT GASES

- For use with flammable gases:
  - This device has been evaluated in accordance with chapter 22.112 of the IEC 60335-2-89 standard with reference to annex BB prescription 9 (sealed relays).
  - This device has been evaluated with a surface temperature not exceeding 200 °C (392 °F), as per prescription 22.114 of the IEC 60335-2-89 standard, according to the criteria of chapter 11 (normal operation).
- The use and application of the information contained herein require expertise in the design and parameterizing/programming of refrigeration control systems. Only you - the original equipment manufacturer, installer or user - can be aware of all the conditions and factors present, and the regulations applicable, during the design, installation and setup, operation, and maintenance of the machine or related processes.

Therefore, only you can determine the suitability of automation and associated equipment, and the related safeties and interlocks, which can be effectively and properly used in the locations for which the equipment is to be put into service. When selecting automation and control equipment, and any other related equipment or software for an application, you must also consider any applicable local, regional or national standards and/or regulations.

You must verify, while incorporating this controller and related equipment, the final compliance of the machine to regulations and standards when using flammable gas refrigerants. Although all statements and information contained herein are believed to be accurate and reliable, they are presented without warranty of any kind. Information provided herein does not relieve you from the responsibility of carrying out your own tests and validations of conformance to any applicable regulations.

### ⚠️ WARNING

#### REGULATORY INCOMPATIBILITY

Be sure that all used equipments and designed systems comply with all applicable local, regional and national regulations and standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

### WIRING GUIDELINES

### ⚠️ DANGER

#### LOOSE WIRING CAN RESULT IN ELECTRIC SHOCK AND/OR FIRE

Tighten the connections in compliance with the technical specifications for torque values and make sure the wiring is correct.

Failure to follow these instructions will result in death or serious injury.

### NOTICE

#### UNINTENDED EQUIPMENT OPERATION

SELV wiring must be kept separate from other wiring (see "Wiring diagram" section).

Failure to follow these instructions can result in equipment damage.

### NOTICE

#### INOPERABLE DEVICE

- For the connection of probes and the digital inputs, use cables shorter than 10 m (32.80 ft).
- For TTL serial line connection, use cables shorter than 1 m (3.28 ft).

Failure to follow these instructions can result in equipment damage.

Use copper wires (mandatory).

The table below shows the type and size of permitted cables for screw terminals and the torque value.

| mm <sup>2</sup> | AWG     | N·m | lb·ft |
|-----------------|---------|-----|-------|
| 0.2...4.0       | 30...12 | 0.5 | 4.5   |
| 0.2...2.5       | 30...12 | 0.5 | 4.5   |

The table below shows the type and size of permitted cables for plug-in terminals pitch 5.0 mm (0.197 in.) and the torque values.

| mm <sup>2</sup> | AWG     | N·m | lb·ft |
|-----------------|---------|-----|-------|
| 0.2...2.5       | 24...12 | 0.5 | 4.5   |
| 0.2...2.5       | 24...12 | 0.5 | 4.5   |

The table below shows the type and size of permitted cables for plug-in terminals pitch 3.5 mm (0.138 in.) and the torque values.

| mm <sup>2</sup> | AWG     | N·m  | lb·ft |
|-----------------|---------|------|-------|
| 0.14...1.5      | 26...16 | 0.22 | 2.27  |
| 0.14...1.5      | 26...16 | 0.22 | 2.27  |

Only use the plug-in terminals supplied with the product (only with specific models) or purchased directly from Eliwell; otherwise, be sure you are using terminals that are suitable for operation with the Eliwell controller in the conditions specific to its application.

### TECHNICAL DATA

The product complies with the following harmonized Standards: EN 60730-1 and EN 60730-2-9  
 Construction of control: Electronic automatic Incorporated Control  
 Purpose of control: Operating control (non-safety related)  
 Type of action: 1.C  
 Degree of protection by enclosure: IP00 rear side  
 IP20 front panel only  
 IP65 front panel only (with a steel sheet 2 mm (0.08 in.) thick ±10 % - Tested in accordance with EN 60529)  
 Pollution degree: 2  
 II  
 2500 V  
 Overvoltage category: Temperature: -20...55 °C (-4...131 °F)  
 Rated impulse voltage: Humidity: 10...90 %RH (non-condensing)  
 Ambient operating conditions: Temperature: -30...85 °C (-22...185 °F)  
 Humidity: 10...90 %RH (non-condensing)  
 Transportation and storage conditions: 12 Vac SELV or SMPS 100...240 Vac (±10 %) 50/60 Hz (depending on the model)  
 Power supply: 3.0 W / 4.5 VA for 12 Vac SELV models  
 3.5 W / 8.5 VA for SMPS 100...240 Vac models  
 Power draw (maximum): A  
 Software class: Open type  
 Environmental front panel rating: Equivalent RS485 bus load: 0.1 Unit Load  
 Number of device on Field Bus (Maximum): 8  
 Loads:

| Relè  | Model IDNext 1485 SBCL (12 Vac SELV)               |   |
|---|--|---|
|   | EU (230 Vac)                                       | USA (230 Vac)   |
| Out1  | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out2  | NO 8(4) A / NC 6(3) A / CO 6 A resistive           | NO 8 A / NC 6 A / CO 6 A resistive - NO 3.6 FLA 21.6 LRA                  |
| Out3  | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out4  | 5(2) A - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>  | 5 A resistive - 2 FLA 12 LRA - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>   |
| I <sub>max</sub> = Maximum current on common (Out1+Out2+Out3) - V*: I <sub>max</sub> = 12 A |  |   |

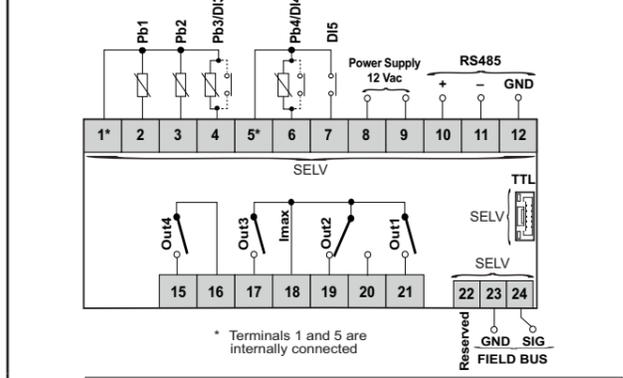
| Relay  | Model IDNext 1385 SBCL (100...240 Vac)             |   |
|--|--|---|
|  | EU (100...240 Vac)                                 | USA (100...240 Vac)   |
| Out1   | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out2   | NO 8(4) A / NC 6(3) A / CO 6 A resistive           | NO 8 A / NC 6 A / CO 6 A resistive - NO 3.6 FLA 21.6 LRA                  |
| Out3   | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out4   | 5(2) A - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>  | 5 A resistive - 2 FLA 12 LRA - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>   |
| I <sub>max</sub> = Maximum current on common (Out1+Out2+Out3) - V*: I <sub>max</sub> = 17 A - S**<br>I <sub>max</sub> = 12 A |  |   |

| Relè   | Model IDNext 1385 SBCL (100...240 Vac)             |   |
|--|--|---|
|  | EU (100...240 Vac)                                 | USA (100...240 Vac)   |
| Out1   | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out2   | NO 8(4) A / NC 6(3) A / CO 6 A resistive           | NO 8 A / NC 6 A / CO 6 A resistive - NO 3.6 FLA 21.6 LRA                  |
| Out3   | 10(6) A - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> | 10 A resistive - 10 FLA 60 LRA - 5 A (70 A inrush, 2.5 ms) <sup>(2)</sup> |
| Out4   | 5(2) A - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>  | 5 A resistive - 2 FLA 12 LRA - 1 A (25 A inrush, 2.5 ms) <sup>(2)</sup>   |
| I <sub>max</sub> = Maximum current on common (Out1+Out2+Out3) - V*: I <sub>max</sub> = 17 A - S**<br>I <sub>max</sub> = 12 A |  |   |

(2) load expressed in compliance with Standard IEC/UL61810-1, Clause D.3 Special loads with inrush current.  
 V\* = models with screw terminals - S\*\* = models with plug-in terminals

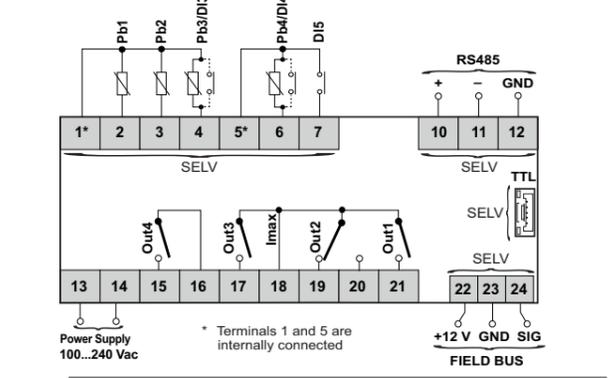
## WIRING DIAGRAMS

### IDNext 1485 SBCL



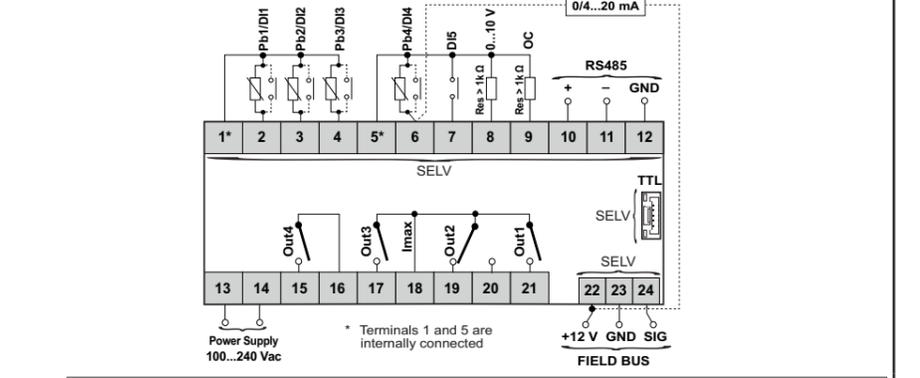
| TERMINALS        | DESCRIPTION  |
|------------------|--|
| 1-2              | Probe Pb1  |
| 1-3              | Probe Pb2  |
| 1-4              | Probe Pb3 (H13=0 and P03#DIG) or Digital input DI3 (H13#0 and P03=DIG)                               |
| 5-6              | Probe Pb4 (H14=0 and P04#DIG) or Digital input DI4 (H14#0 and P04=DIG)                               |
| 5-7              | Digital input DI5  |
| 8-9              | Power supply input: 12 Vac SELV  |
| 10-11-12         | RS485. Supervision Gateway Connection (NOT ISOLATED)   |
| 15-16            | SPST relay Out4 (Default: Evaporator fans)   |
| 17-18            | SPST relay Out3 (Default: AUX)   |
| 18-19-20         | SPDT relay Out2 (Default: Defrost 1)   |
| 18-21            | SPST relay Out1 (Default: Compressor 1)  |
| 22-23-24         | Field Bus (22 = Reserved, 23 = GND, 24 = SIG)<br>Only for IDNext SBCL / SBCL models interconnection. |
| I <sub>max</sub> | Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A                          |
| TTL              | TTL serial port  |
| SELV             | SELV connections   |

### IDNext 1385 SBCL



| TERMINALS        | DESCRIPTION  |
|------------------|--|
| 1-2              | Probe Pb1  |
| 1-3              | Probe Pb2  |
| 1-4              | Probe Pb3 (H13=0 and P03#DIG) or Digital input DI3 (H13#0 and P03=DIG)                           |
| 5-6              | Probe Pb4 (H14=0 and P04#DIG) or Digital input DI4 (H14#0 and P04=DIG)                           |
| 5-7              | Digital input DI5  |
| 10-11-12         | RS485. Supervision Gateway Connection (NOT ISOLATED)   |
| 13-14            | Power supply input: SMPS 100...240 Vac   |
| 15-16            | SPST relay Out4 (Default: Evaporator fans)   |
| 17-18            | SPST relay Out3 (Default: AUX)   |
| 18-19-20         | SPDT relay Out2 (Default: Defrost 1)   |
| 18-21            | SPST relay Out1 (Default: Compressor 1)  |
| 22-23-24         | Field Bus (22 = 12 V, 23 = GND, 24 = SIG)<br>Only for IDNext SBCL / SBCL models interconnection. |
| I <sub>max</sub> | Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A                      |
| TTL              | TTL serial port  |
| SELV             | SELV connections   |

### IDNext 1385 SBCL



| TERMINALS        | DESCRIPTION   |
|------------------|---|
| 1-2              | Probe Pb1 (H11=0 and P01#DIG) or Digital input DI1 (H11#0 and P01=DIG)  |
| 1-3              | Probe Pb2 (H12=0 and P02#DIG) or Digital input DI2 (H12#0 and P02=DIG)  |
| 1-4              | Probe Pb3 (H13=0 and P03#DIG) or Digital input DI3 (H13#0 and P03=DIG)  |
| 5-6              | Probe Pb4 (H14=0 and P04#DIG/420/020) or Digital input DI4 (H14#0 and P04=DIG) or input I/4...20 mA (H14=0 and P04=420/020) |
| 5-7              | Digital input DI5   |
| 5-8              | Output 0...10 V - Load impedance ≥ 1 kΩ (01m#0)   |
| 5-9              | Open Collector Output (OC): 12 Vdc ±5 % - Load impedance ≥ 1 kΩ (02n#0)   |
| 10-11-12         | RS485. Supervision Gateway Connection (NOT ISOLATED)  |
| 13-14            | Power supply input: SMPS 100...240 Vac  |
| 15-16            | SPST relay Out4 (Default: Evaporator fans)  |
| 17-18            | SPST relay Out3 (Default: AUX)  |
| 18-19-20         | SPDT relay Out2 (Default: Defrost 1)  |
| 18-21            | SPST relay Out1 (Default: Compressor 1)   |
| 22-23-24         | Field Bus (22 = 12 V, 23 = GND, 24 = SIG) - Only for IDNext SBCL / SBCL models interconnection.                             |
| I <sub>max</sub> | Maximum current on common: screw terminals = 17 A; plug-in terminals = 12 A   |
| TTL              | TTL serial port   |
| SELV             | SELV connections  |

(1) Maximum current available on +12 V connection for I/4...20 mA external transducer could be up to 20 mA (maximum one transducer).

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## IDNext 1000 -HC



**USER INTERFACE**

| Key  | Press and release  | Press for at least 5 seconds   |
|--|--|--|
|  | <ul style="list-style-type: none"> <li>Scroll through the menu options.</li> <li>Increase the values.</li> </ul>                                     | From outside the menus only. Can be configured by the user (see H31). Default: Activate manual defrost.  |
|  | From outside the menus only. Can be configured by the user (see H35). Default: not configured.   | ---  |
|  | <ul style="list-style-type: none"> <li>Scroll through the menu options.</li> <li>Decrease the values.</li> </ul>                                     | <ul style="list-style-type: none"> <li>From outside the menus only. Can be configured by the user (see H32). Default: not configured</li> <li>Unlock keypad if it is locked</li> </ul> |
|  | <ul style="list-style-type: none"> <li>Go back (up one level) in the menu.</li> <li>Confirm the parameter value.</li> </ul>                          | From outside the menus only. Can be configured by the user (see H33). Default: Activates stand-by function.  |
|  | From outside the menus only. Can be configured by the user (see H34). Default: Activates light output  | ---  |
|  | ---  | Press both simultaneously within 30 seconds after device power-on, or after stand-by to load the preset applications (only after unlocking the keypad).                                |
| Key  | Press and release  | Press for at least 3 seconds   |
| <b>SET</b>   | <ul style="list-style-type: none"> <li>Access the "Machine Status" menu.</li> <li>Display alarms (if present).</li> <li>Confirm commands.</li> </ul> | Access the 'Programming' menu.   |
| <p><b>Note:</b> At device power-on or after 30 seconds since last action on the user interface, the device keypad locks automatically. If it is locked and any key is pressed, the text 'LoC' will appear. To unlock the keypad, press and hold  for at least 5 seconds until the text 'UnL' appears.</p> <p><b>Note:</b> <b>Vmin</b> = minimum compressor speed; <b>Vmax</b> = maximum compressor speed.</p> <p><b>Note:</b> Some icons may be associated with unavailable functions, depending on the model (in that cases those icons will never light on).</p> |  |  |

| Icon | Function                                   | Description  |
|------|--|--|
|      | Compressor                                 | On steadily: compressor active<br>Flashing: delay, protection or activation inhibited<br>Off: compressor off   |
|      | Defrost                                    | On steadily: defrost active<br>Flashing: defrost activated manually or via digital input<br>Off: defrost inactive  |
|      | Evaporator fans                            | On steadily: fans on<br>Off: fans off  |
|      | Medium VSC speed (only IDNext 1385 SBCIL)  | On steadily: Vmin ≤ required speed < 90% Vmax<br>Off: 0% ≤ required speed < Vmin   |
|      | Maximum VSC speed (only IDNext 1385 SBCIL) | On steadily: required speed ≥ 90% Vmax<br>Off: required speed < 90% Vmax   |
|      | Light                                      | On steadily: light on<br>Off: light off  |
|      | Heating                                    | On steadily: Heating regulator active<br>Slow flashing: Humidity output active (if H2x = 16)<br>Fast flashing: Dehumidify output with (H2x = 18) or without (H2x = 17) resistor<br>Off: Heating regulator inactive |
|      | Alarm                                      | On steadily: alarm present<br>Flashing: alarm silenced<br>Off: No alarm active   |
|      | Temperature                                | On steadily: a temperature is displayed (°C or °F)<br>Flashing: PID autotuning active (only IDNext 1385 SBCIL)<br>Off: a value not relating to temperature or a label is displayed                                 |
|      | AUX  | On steadily: AUX output active<br>Flashing: Deep cooling active<br>Off: AUX output off   |
|      | Energy saving                              | On steadily: Energy saving active<br>Flashing: reduced set active<br>Off: Energy saving inactive   |

| PAR | Description   | Range        | MU    | IDNext 1485 SBCL |        |        |        | IDNext 1385 SBCL |        |        |        | IDNext 1385 SBCIL |        |        |        |
|-----|---|--------------|-------|------------------|--------|--------|--------|------------------|--------|--------|--------|-------------------|--------|--------|--------|
| SEt | Regulation setpoint 1. The setpoint value is set in the 'Machine status' menu.  | LSE...HSE    | °C/°F | 0.0              | 0.0    | -18.0  | 3.5    | 0.0              | 0.0    | -18.0  | 3.5    | 3.5               | 3.5    | -18.0  | 3.5    |
| SEH | Humidity setpoint. The setpoint value is set in the 'Machine status' menu.  | 0.0...100.0  | %RH   | ---              | ---    | ---    | ---    | ---              | ---    | ---    | ---    | 30.0              | 30.0   | 30.0   | 30.0   |
| dIF | Compressor relay activation differential 1; the compressor stops when reaching the entered setpoint (upon indication of the regulation probe 1) and restarts at a temperature value equal to SP1+dIF1.  | 0.0...30.0   | °C/°F | 2.0              | 2.0    | 2.0    | 2.0    | 2.0              | 2.0    | 2.0    | 2.0    | 2.0               | 2.0    | 2.0    | 2.0    |
| LSE | Minimum value that can be assigned to setpoint 1.   | LoL...HSE    | °C/°F | -112.0           | -112.0 | -112.0 | -112.0 | -112.0           | -112.0 | -112.0 | -112.0 | -112.0            | -112.0 | -112.0 | -112.0 |
| HSE | Maximum value that can be assigned to setpoint 1.   | LSE...HdL    | °C/°F | 302.0            | 302.0  | 302.0  | 302.0  | 302.0            | 302.0  | 302.0  | 302.0  | 302.0             | 302.0  | 302.0  | 302.0  |
| dtY | Type of defrost. 0 = electric defrost or due to stoppage - compressor OFF during defrost; 1 = cycle inversion (hot gas) defrost; compressor on during defrost; 2 = defrost with "Free" mode; defrost independent of compressor.   | 0/1/2        | num   | 0                | 0      | 0      | 0      | 0                | 0      | 0      | 0      | 0                 | 0      | 0      | 0      |
| dEt | Defrost 1 timeout. Maximum duration for defrosting evaporator 1.  | 1...250      | min   | 30               | 30     | 30     | 30     | 30               | 30     | 30     | 30     | 30                | 30     | 30     | 30     |
| dS1 | Evaporator 1 defrost end temperature.   | -99.9...1999 | °C/°F | 8.0              | 8.0    | 8.0    | 8.0    | 8.0              | 8.0    | 8.0    | 8.0    | 8.0               | 8.0    | 8.0    | 8.0    |
| dt  | Dripping time.  | 0...250      | min   | 0                | 0      | 0      | 0      | 0                | 0      | 0      | 0      | 0                 | 0      | 0      | 0      |
| HAL | High temperature 1 alarm. Temperature value (in an absolute or relative value - see Att) which, when exceeded, will lead to the activation of alarm signaling.  | LAL...1999   | °C/°F | 50.0             | 50.0   | 50.0   | 50.0   | 50.0             | 50.0   | 50.0   | 50.0   | 50.0              | 50.0   | 50.0   | 50.0   |
| LAL | Low temperature 1 alarm. Temperature value (in an absolute or relative value - see Att) which, when not reached, will lead to the activation of alarm signaling.  | -99.9...HAL  | °C/°F | -50.0            | -50.0  | -50.0  | -50.0  | -50.0            | -50.0  | -50.0  | -50.0  | -50.0             | -50.0  | -50.0  | -50.0  |
| tAO | Temperature alarm signaling delay time on probe 1.  | 0...250      | min   | 0                | 0      | 0      | 0      | 0                | 0      | 0      | 0      | 0                 | 0      | 0      | 0      |
| ddl | Display mode during defrosting.<br>• 0 = display the temperature read by the selected probe<br>• 1 = stop the reading of the value read by the selected probe at the start of defrosting until the setpoint is reached (or until the expiration of Ldd)<br>• 2 = displays label dEF during defrost until the setpoint is reached. | 0/1/2        | num   | 1                | 1      | 1      | 1      | 1                | 1      | 1      | 1      | 1                 | 1      | 1      | 1      |
| Ldd | Display unlock timeout value after defrost (label dEF).   | 0...250      | min   | 30               | 30     | 30     | 30     | 30               | 30     | 30     | 30     | 30                | 30     | 30     | 30     |
| PS1 | When enabled (PS1≠0) this is the access key for the user parameters.  | 0...250      | num   | 0                | 0      | 0      | 0      | 0                | 0      | 0      | 0      | 0                 | 0      | 0      | 0      |

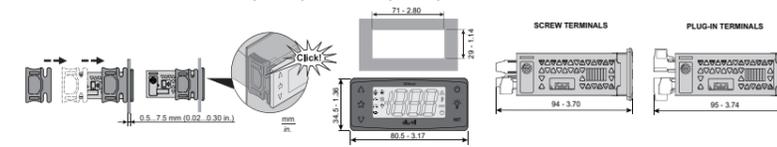
**Note:** for the complete list of parameters, please refer to the user manual (see box at the start of the document).

| Label      | Description              | Reset     | Icon | Cause   | Effects  | Solutions  |
|------------|--------------------------|-----------|------|---|--|--|
| <b>E1</b>  | Probe Pb1 in error       | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul>                                    | • <b>E1</b> shown  | <ul style="list-style-type: none"> <li>Verify the probe wiring and type (<b>P01</b>)</li> <li>Replace probe</li> </ul>   |
| <b>E2</b>  | Probe Pb2 in error       | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul>                                    | • <b>E2</b> shown  | <ul style="list-style-type: none"> <li>Verify the probe wiring and type (<b>P02</b>)</li> <li>Replace probe</li> </ul>   |
| <b>E3</b>  | Probe Pb3 in error       | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul>                                    | • <b>E3</b> shown  | <ul style="list-style-type: none"> <li>Verify the probe wiring and type (<b>P03</b>)</li> <li>Replace probe</li> </ul>   |
| <b>E4</b>  | Probe Pb4 in error       | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Probe or corresponding wiring in short-circuit or open circuit</li> </ul>                                    | • <b>E4</b> shown  | <ul style="list-style-type: none"> <li>Verify the probe wiring and type (<b>P04</b>)</li> <li>Replace probe</li> </ul>   |
| <b>Ei</b>  | Virtual probe in error   | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Individual physical probes in error.</li> </ul>  | • <b>Ei</b> shown  | Verify settings and behaviour of individual physical probes.   |
| <b>Er</b>  | Remote probe in error    | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Supervisor not sending correct virtual probe value</li> </ul>  | • <b>Er</b> shown  | Verify supervisor system   |
| <b>EL</b>  | Field Bus probe in error | Automatic | on   | <ul style="list-style-type: none"> <li>Reading of values outside the operating interval</li> <li>Wrong probe value from Field Bus connected devices and/or wrong Field Bus communication</li> </ul>           | • <b>EL</b> shown  | <ul style="list-style-type: none"> <li>Verify Field Bus connected devices probes behavior and sharing configurations</li> <li>Verify Field Bus devices wiring</li> </ul> |
| <b>LnA</b> | Generic network alarm    | Automatic | on   | <ul style="list-style-type: none"> <li>Devices connected to the Field Bus not properly working or configured</li> <li>Not proper or properly working Field bus wiring</li> </ul>                              | • <b>LnA</b> shown   | <ul style="list-style-type: none"> <li>Verify Field Bus connected devices behavior and configurations</li> <li>Verify Field Bus devices wiring</li> </ul>                |
| <b>AH1</b> | High temperature alarm 1 | Automatic | off  | Value read by probe selected with <b>rA1</b> > <b>HAL</b> for longer than time <b>tAO</b>   | <ul style="list-style-type: none"> <li>Alarm <b>AH1</b> added to folder AL</li> <li>No effect on regulation</li> </ul>                                   | Wait for the temperature read by the probe selected with <b>rA1</b> to drop below the alarm threshold ( <b>HAL-AFd</b> ).  |
| <b>AL1</b> | Low temperature alarm 1  | Automatic | off  | Value read by probe selected with <b>rA1</b> < <b>LAL</b> for longer than time <b>tAO</b>   | <ul style="list-style-type: none"> <li>Alarm <b>AL1</b> added to folder AL</li> <li>No effect on regulation</li> </ul>                                   | Wait for the temperature read by the probe selected with <b>rA1</b> to rise above the alarm threshold ( <b>LAL-AFd</b> ).  |
| <b>AH2</b> | High temperature alarm 2 | Automatic | off  | Value read by probe selected with <b>rA2</b> > <b>HA2</b> for longer than time <b>2tA</b>   | <ul style="list-style-type: none"> <li>Alarm <b>AH2</b> added to folder AL</li> <li>No effect on regulation</li> </ul>                                   | Wait for the temperature read by the probe selected with <b>rA2</b> to drop below the alarm threshold ( <b>HA2-AFd</b> ).  |
| <b>AL2</b> | Low temperature alarm 2  | Automatic | off  | Value read by probe selected with <b>rA2</b> < <b>LA2</b> for longer than time <b>2tA</b>   | <ul style="list-style-type: none"> <li>Alarm <b>AL2</b> added to folder AL</li> <li>No effect on regulation</li> </ul>                                   | Wait for the temperature read by the probe selected with <b>rA2</b> to rise above the alarm threshold ( <b>LA2-AFd</b> ).  |
| <b>EA</b>  | External alarm           | Automatic | on   | Activation of the digital input ( <b>H1x</b> = ±5).   | <ul style="list-style-type: none"> <li>Alarm <b>EA</b> added to folder AL</li> <li>Regulator inhibited, on the basis of parameter <b>EAL</b></li> </ul>  | Verify and remove the external cause that caused the alarm on the digital input.   |
| <b>Opd</b> | Open door alarm          | Automatic | on   | Digital input activation for a time greater than <b>tdo</b> ( <b>H1x</b> = ±4).   | <ul style="list-style-type: none"> <li>Alarm <b>Opd</b> added to folder AL</li> <li>Regulator inhibited, on the basis of parameter <b>dod</b></li> </ul> | <ul style="list-style-type: none"> <li>Close the door</li> <li>Increase the value of parameter <b>oAo</b></li> </ul>   |
| <b>Ad2</b> | Defrost due to timeout   | Automatic | on   | End of defrost due to timeout, instead of the defrost end temperature being reached   | Alarm <b>Ad2</b> added to folder AL  | Wait for the next defrost for automatic deactivation.  |
| <b>CoH</b> | Overheating alarm        | Automatic | on   | Value set by parameter <b>SA3</b> exceeded.   | <ul style="list-style-type: none"> <li>Alarm <b>COH</b> added to folder AL</li> <li>Compressor regulation inhibited</li> </ul>                           | Wait for the temperature read by the probe selected with <b>rA3</b> to drop below the alarm threshold ( <b>SA3-dA3</b> ).  |
| <b>E10</b> | Clock alarm              | Automatic | off  | Clock alarm or battery low  | <ul style="list-style-type: none"> <li>Alarm <b>E10</b> added to folder AL</li> <li>Communication with the RTC is not present</li> </ul>                 | Set the correct time. If the error persists, replace the instrument (RTC battery low)  |
| <b>ELi</b> | No-Link alarm            | Automatic | on   | The alarm is triggered when communication on Field Bus is absent.   | Alarm <b>ELi</b> added to folder AL  | Restore communication.   |
| <b>PAn</b> | Panic alarm              | Automatic | on   | Activated by the properly configured digital input ( <b>H1x</b> = ±15).<br><b>Note:</b> The buzzer and relay cannot be silenced.  | <b>PAn</b> shown   | Deactivate the corresponding digital input.  |
| <b>rFA</b> | Low refrigerant alarm    | Automatic | on   | Even with the compressor on, the temperature trend does not fall within the interval set by <b>rFt</b> .  | Alarm <b>rFA</b> added to folder AL  | Switch the instrument off and on again (alarm deactivated if <b>rFt</b> = 0)   |
| <b>nPA</b> | Pressure switch alarm    | Automatic | off  | If the number <b>n</b> of pressure switch activations is lower than <b>PEn</b> :<br>• Alarm <b>nPA</b> added to folder AL with the number of pressure switch activations<br>• Compressor regulation inhibited | Verify and remove the cause that triggered the alarm on the digital input (automatic reset)  |  |

| Label       | Description   | Reset  | Icon | Cause   | Effects   | Solutions  |
|-------------|---|--------|------|---|---|--|
| <b>PAL</b>  | Pressure switch alarm                                 | Manual | on   | Pressure switch alarm activation caused by the external pressure switch.  | If the number <b>n</b> of pressure switch activations is <b>n = PEn</b> in a time period < <b>PEi</b> :<br>• <b>PAL</b> shown<br>• Alarm <b>PA</b> added to folder AL and alarm <b>nPA</b> is removed from folder AL<br>• Compressor regulation, fans and defrost inhibited | <ul style="list-style-type: none"> <li>Switch the controller off and on again.</li> <li>Select <b>rAP</b> (manual reset) in the functions folder to reset the alarms.</li> </ul> |
| <b>Hc n</b> | Max/Min HCP probe value when out of range (SLH...SHH) | Manual | on   | Logs the Max/Min value recorded by HCP probe when it exceeds the range SLH...SHH. <b>n</b> represents the sequential number of times the range is exceeded. | <ul style="list-style-type: none"> <li>Alarm <b>Hc n</b> added to folder AL</li> <li>No effect on regulation</li> </ul>   | <b>Note:</b> <b>n</b> can assume the values 1 to 8. If <b>n</b> >8, folder Hc8 will flash and the system will overwrite folders where <b>n</b> =1.                               |
| <b>tC n</b> | HCP probe out-of-range dwell time (SLH...SHH)         | Manual | on   | Stores the dwell time of the HCP probe value outside of the range SLH...SHH. <b>n</b> represents the sequential number of times the range is exceeded.      | <ul style="list-style-type: none"> <li>Alarm <b>tC n</b> added to folder AL</li> <li>No effect on regulation</li> </ul>   | <b>Note:</b> <b>n</b> can assume the values 1 to 8. If <b>n</b> >8, folder tC8 will flash and the system will overwrite folders where <b>n</b> =1.                               |
| <b>bC n</b> | Value recorded by HCP probe on return from blackout   | Manual | off  | Logs the value recorded by HCP probe on return from a blackout. <b>n</b> represents the sequential number of blackouts that have occurred.                  | <ul style="list-style-type: none"> <li>Alarm <b>bC n</b> added to folder AL</li> <li>No effect on regulation</li> </ul>   | <b>Note:</b> <b>n</b> can assume the values 1 to 8. If <b>n</b> >8, folder bC8 will flash and the system will overwrite folders where <b>n</b> =1.                               |
| <b>bt n</b> | HCP probe out-of-range dwell time during blackout     | Manual | off  | Stores the out-of-range dwell time of the HCP probe value during a blackout. <b>n</b> represents the sequential number of blackouts that have occurred.     | <ul style="list-style-type: none"> <li>Alarm <b>bt n</b> added to folder AL</li> <li>No effect on regulation</li> </ul>   | <b>Note:</b> <b>n</b> can assume the values 1 to 8. If <b>n</b> >8, folder bt8 will flash and the system will overwrite folders where <b>n</b> =1.                               |

**MECHANICAL INSTALLATION**

The instrument is designed to be panel mounted. Make a 71x29 mm (2.80x1.14 in.) hole and insert the instrument, fastening it with the provided brackets. Keep the area surrounding the instrument cooling slits well aerated. The panel thickness must be between 0.5 mm (0.02 in.) and 7.5 mm (0.30 in.).



**WARNING:** This product can expose you to chemicals including, lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



**PROBE TYPE SELECTION**

- The procedure to select the probe type is:
- To unlock the keypad, press and hold for at least 5 seconds, until the label 'UnL' appears
  - Press and hold **SET** for at least 3 seconds
  - Scroll through the parameters with and until the label 'PA2' is displayed
  - Press and release **SET** (the value 0 will be displayed)
  - Set the **PA2** value (default = 15) using and
  - Confirm the value by pressing **SET** (the first folder will be displayed)
  - Scroll through the folders with and until the label 'CnF' is displayed
  - Press and release **SET**
  - Scroll through the parameters with and until one of the label 'P01...P04' is displayed
  - Press and release **SET**
  - Set the probe type using and
  - Confirm the selected probe type using **SET** or or letting a timeout occur (15 seconds).

**APPLICATION SELECTION**

- The procedure to load one of the preset applications is:
- If the device is on, switch it off
  - Switch on the device
  - To unlock the keypad, press and hold for at least 5 seconds, until the label 'UnL' appears
  - Within 30 seconds since the device power-on, press and hold (**SET** + ) for at least 5 seconds, until the label 'AP1' appears
  - Scroll through applications **AP1**, **AP2** and **AP3** using and
  - Confirm the selected preset application using **SET**.
  - Note:** The process can be canceled by pressing or letting a timeout occur (15 seconds)
  - If the procedure completes successfully, the display will show 'yES', otherwise it will show 'Err'
  - The regulator will restart.

The procedure to load one of the preset applications restores the respective default values, with the exception of the parameters not specific for the application that retain the value set previously. These values, left unaltered, may not be correct and may therefore need to be changed.

**NOTICE**

**INOPERABLE DEVICE**  
Verify the parameters after loading a preset application.  
**Failure to follow these instructions can result in equipment damage.**

**ACCESSING AND USING THE MENUS**

Resources are organized into 2 menus which are accessed as explained below:

- 'Machine Status' menu: press and release **SET**.
- 'Programming' menu: press **SET** for at least 3 seconds.

If the keypad is not pressed for more than 15 seconds (time-out) or pressing once confirms the last value shown on the display and the previous view is displayed.

**MACHINE STATUS MENU**

Access the 'Machine Status' menu by pressing and releasing **SET**. If no alarms are active, the 'SET' label appears. By pressing and is possible to scroll all folders in the menu:

- SEt**: setpoint setting folder
- SEH**: humidity setpoint setting folder (only visible if the function is active)
- ALr**: alarms folder (only visible if there are active alarms)
- rC**: clock parameters folder
- dAy**: day; **Hr**: hours; **Min**: minutes; **Md**: monthly day; **MtH**: month; **Yr**: year
- Pb1...Pb4**: Pb1...Pb4 probes value folder (read only)
- APP**: uploaded application (**AP1**, **AP2** or **AP3**)
- IdF**: firmware mask value folder
- rEL**: firmware release value folder
- nAM**: product name folder
- PER**: VSC value folder (if available)
- FAN**: Fans value folder (if available)

**Note:** some folders may not be present, depending on model and settings.

**PROGRAMMING MENU**

To enter the Programming menu:

- To unlock the keypad, press and hold the key for at least 5 seconds, until the label 'UnL' appears
- Press and hold **SET** for at least 3 seconds

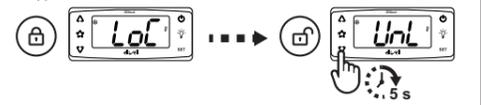
If configured, a **PA1** password will be required for User parameters, and **PA2** password for Installer parameters.

**KEYPAD UNLOCK**

The keypad automatically locks in the following cases:

- at power-on
- after 30 seconds of inactivity

To unlock the keypad, press and hold for at least 5 seconds until the label 'UnL' appears.



- User parameters (User):** Upon access the first parameter (dIF) will be shown.
- Scroll through the parameters with and until you find the label for the parameter you want to change
  - Press and release **SET**
  - Set the desired value using and
  - To confirm the value press **SET** or or let a timeout occur (15 seconds).
- Installer parameters (Inst):** Upon access the first folder (**CP**) will be shown.
- Scroll through the folders with and until you find the label of the desired folder
  - Press and release **SET**
  - Scroll through the parameters with and until you find the label for the parameter you want to change
  - Press and release **SET**
  - Set the desired value using and
  - To confirm the value press **SET** or or let a timeout occur (15 seconds).
- Note:** Switch the device off and on again every time you change the parameter configuration.

**USING THE UNICARD**

- Connect the UNICARD to the TTL serial port to allow the rapid programming of device parameters.
- Upload (UL):** Access the **Installer** parameters by entering **PA2**, press and to scroll through the folders until folder **FR** appears. Press **SET** to select it, press and to scroll through the parameters, select **UL** and press **SET**. This function uploads the programming parameters from the device to the UNICARD. If the operation is successful, the display will show 'yES', otherwise it will show 'no'.
  - Format (Fr):** Access the **Installer** parameters by entering **PA2**, press and to scroll through the folders until folder **FR** appears. Press **SET** to select it, press and to scroll through the parameters, select **Fr** and press **SET**. This command is used to format the UNICARD (necessary when using the card for the first time). **Note:** the **Fr** parameter deletes all data present. It's not possible to stop and/or undo this task.
  - Download:** Connect the UNICARD when the device is switched off. At power-on, data will automatically start downloading from the UNICARD to the device. At the end of the lamp test, the display will show **dLY** if the operation was successful and **dLn** if not successful.
- Note:** After the parameters have been downloaded, the device uses the downloaded parameter map settings.

**LIABILITY AND RESIDUAL RISKS**

The liability of Schneider Electric and Eliwell is limited to the correct and professional use of the product according to the directives referred to herein and in the other supporting documents, and does not cover any damage (including but not limited to) the following causes:

- installation/use other than what is intended and, in particular, in deviation from the safety regulations set forth by the standards and/or included in this document;
- use on panels that do not guarantee suitable protection against electrical shock, water and dust in the assembly conditions;
- use on panels which allow access to dangerous parts without the aid of a keyed or tooled locking mechanism;
- product tampering and/or alteration;
- installation/use on panels that do not comply with the regulations in force in the country of installation.

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