



**PHARAO-II 10 (AC)**  
**PHARAO-II 11 (DC)**



**PHARAO-II 14 (AC)**



**PHARAO-II 24 (AC)**

### Common functions

- Programmable controller for commercial and industrial use
- 34 pre-programmed function blocks with special control functions that can be used up to 200 times
- Direct programming of even complex Boolean functions in one function module
- Programming, editing and modifying on the unit itself via 8 keys without interface cable
- Backlit LCD with operator guidance in 4 x 12 character text
- Input and output switching status display
- Process variable display (MMI function)
- Assignment of programmed functions on front keys
- Internal EEPROM memory for max. 200 function blocks (5000 bytes)
- Optional plug-in EEPROM for program transfer or dual programming of internal/plugged-in EEPROM
- 3-level password protection
- Realtime year clock with 1,000 switching times
- Graphical programming software for Windows 95/98/NT/2000/ME/XP with detailed online Help documentation
- Programming of the function blocks via "drag and drop"
- Online/offline program simulation on screen
- Remote control/remote monitoring possible via modem or GSM modem
- Transmission of SMS, email or fax

### PHARAO-II 10 (AC)

- Rated voltage 100–240 V~
- 6 digital inputs e.g. for buttons, brightness and temperature switches
- 4 Relay outputs 8 A/250 V~

### PHARAO-II 11 (DC) as before, but

- Rated voltage 24 V DC
- 6 inputs digital/analog selectable

### PHARAO-II 14 (AC)

- Nominal voltage 100–240 V~
- 8 digital inputs e.g. for keys, brightness and temperature switches
- 6 relay outputs 8 A/250 V~

### PHARAO-II 24 (AC)

- Nominal voltage 100–240 V~
- 15 digital inputs e.g. for keys, brightness and temperature switches
- 9 relay outputs: 4 x 8 A/250 V~, 5 x 2 A/250 V~

### Common technical data

#### LCD display:

4 x 12 character lines, run mode, password protection, input/output status, time, date, process variables, function block overview during programming

#### Capacity loss:

PHARAO-II 14: ≤ 5.5 W, PHARAO-II 15: ≤ 7.5 W

PHARAO-II 24: ≤ 7 W, PHARAO-II 25: ≤ 9 W

#### PHARAO-II 10/11/14/15 switching power:

8 A/250 V AC, cos φ = 1, inductive load max. 373 VA (service life of the relay contacts 100,000 switching cycles at rated current)

#### PHARAO-II 24/25 switching power:

4 x 8 A/250 V AC, cos φ = 1, inductive load max. 373 VA  
5 A/250 V AC, cos φ = 1, inductive load max. 373 VA (service life of the relay contacts 100,000 switching cycles at rated current)

#### Time accuracy of realtime clock: ±5 s/day

#### Power reserve of realtime clock and operands:

20 days at 25 °C (Goldcap)

#### Permissible ambient temperature: –25 °C...+55 °C

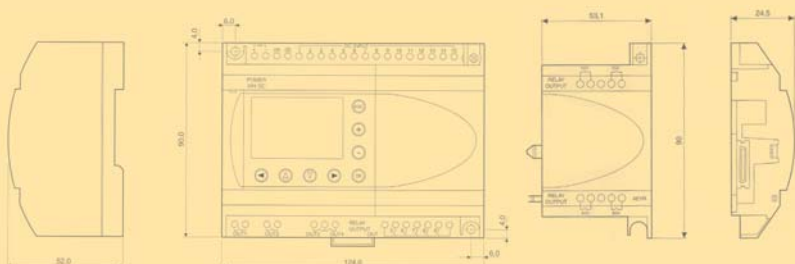
#### Permissible storage temperature: –30 °C...+70 °C

#### Protection rating: IP 20 to EN 60 529

#### Protection class: II subject to correct installation

#### Weight: 300 g

### Dimension drawings DIN 43 880





PHARAO-II 25 (DC)

### PHARAO-II 15 (DC)

- Nominal voltage 24 V DC
- 8 inputs digital/analogue selectable
- 6 relay outputs 8 A/250 V~

### PHARAO-II 25 (DC)

- Nominal voltage 24 V DC
- 15 inputs, including 8 digital/analogue selectable
- 9 relay outputs: 4 x 8 A/250 V~, 5 x 2 A/250 V~



PHARAO-II 4EDA (DC)



PHARAO-II 4ED (AC)

### PHARAO-II 4EDA (DC)

- Upgrade by 4 digital (24 V DC) inputs 2 x 1 kHz counter inputs

### PHARAO-II 4ED (AC)

- Upgrade by 4 digital inputs (220 V AC–240 V AC)



PHARAO-II 4AR (AC)

### PHARAO-II 4AR (AC)

- 4-channel relay output upgrade with 2 A/250 V AC



24 V DC power supply

### 24 V DC power supply

Power pack for supply voltage from PHARAO controllers and sensors (LUNA 131 DDC).

Power pack adequate for 5 controllers PHARAO-II 15 or PHARAO-II 21/25 and/or 12 x PHARAO-II 11/12 controllers

### Technical data:

**Nominal output voltage:** 24 V DC

**Nominal output:** 36 W

**Nominal current:** 1.5 A

**Protection class:** II subject to correct installation

**Permissible humidity range:** ≤ 95 %

**Permissible ambient temperature:** –5 °C ...+55 °C

**Protection rating:** IP 20 to EN 60 950

**Dimensions:** 71 x 90 x 58 mm

Type	Outputs	Nominal voltage range	Inputs frequency	Input	Order No.
PHARAO-II 10 (AC)	4 relays (NO contact) à 8 A/250 V~	100–240 V AC, +10 %/–15 %, 50–60 Hz	6 digital inputs	max. 5 Hz	575 0 210
PHARAO-II 11 (DC)	4 relays (NO contact) à 8 A/250 V~	24 V DC, +20 %/–15 %	6 analogue/digital eligible inputs	max. 20 Hz	575 9 211
PHARAO-II 14 (AC)	6 relays (NO contact) à 8 A/250 V~	100–240 V AC, +10 %/–15 %, 50–60 Hz	8 digital inputs	max. 20 Hz	575 0 014
PHARAO-II 15 (DC)	6 relays (NO contact) à 8 A/250 V~	24 V DC, +20 %/–15 %	8 analogue/digital eligible inputs	max. 20 Hz	575 9 015
PHARAO-II 24 (AC)	4 relays à 8 A/250 V~ 5 relays à 2 A/250 V~	100–240 V AC, +10 %/–15 %, 50–60 Hz	15 digital inputs	max. 20 Hz	575 0 024
PHARAO-II 25 (DC)	4 relays à 8 A/250 V~ 5 relays à 2 A/250 V~	24 V DC, +20 %/–15 %	15 inputs, 8 of them analogue/digital eligible inputs	max. 20 Hz	575 9 025
PHARAO-II Upgrade 4ED (AC)		220–240 V AC 50–60 Hz	4 digital inputs	max. 5 Hz	575 9 100
PHARAO-II Upgrade 4EDA (DC)		24 V DC, +20 %/–15 %	4 digital inputs	2 x 1 kHz	575 9 101
PHARAO-II Upgrade 4AR (AC)		220–240 V AC 50–60 Hz	4 relay outputs	–	575 9 102
PHARAO programming software CD for Windows 95/98/NT/2000/ME/XP, software for PHARAO and PHARAO-II generation					907 0 251
Power supply 24 V DC, 36 W (4 modules)					907 9 330
Front panel installation kit, only for PHARAO-II 10, 11					907 0 001



LUNA 131 DDC



LUXOR 413 (wind sensor)



SUD 228



PHARAO-II-EEPROM

### LUNA 131 DDC combination sensor with analog output signal 0–10 V

The combination sensor LU 131 DDC records the brightness and temperature. The unit has two separate outputs 0–10 V. The sensor can be connected for example with the analog inputs of the PHARAO devices (24 V DC). The function blocks signal converter, range comparison and Schmitt trigger allow control units and controllers to be programmed.

### LUXOR 413 wind sensor with pulse output

The wind sensor can be used to protect blinds and awnings from excessively high wind speeds. The sensor can be connected, for example, directly to a digital input of a PHARAO device (24 V DC).

### SUD 228 Charging switch for electric storage heating units

- Charging switch with adjustable charging time and backward charge control
- When the ripple control receiver or the rate time switch enables the "low rate night", the device will start the charging program for the storage heater
- Depending on design, the charging time can be set to 0–8 or 0–9 hours by key press, depending on the heating required
- The display shows the charging time, which is repeated every 24 hours
- The backward charging control will end the charging when the light load period ends.
- Manual switch can be connected for charging during the day

### PHARAO/PHARAO-II programming cable

For series connection (RS 232) to enable control programs to be configured and parameterised. This cable is used to connect an analogue model for remote maintenance and remote control.

### PHARAO-II GSM interface cable

The GSM interface cable enables a connection to be established and SMS data to be transmitted to mobile telephone, email address or Fax machine. The interface for connecting the GSM cable is located below the plug-in upgrade modules.

### Plug-in EEPROM memory module

External memory module for transferring and/or downloading the program from or to the internal EEPROM system memory. Internal program is deactivated as long as the external memory module is plugged in (dual programming). PHARAO-II-EEPROM (5 kByte)

#### Technical data:

**Operating voltage:** 24 V DC / < 25 mA

**Brightness range selectable:** 1. 0–200 Lux  
2. 0–10,000 Lux  
3. 0–50,000 Lux

**Sensor characteristic:** linear, temperature, brightness

**Temperature range:** –30 °C... +70 °C

**Output:** 0–10 V DC

**Degree of protection:** IP 54

**Housing:** 110 x 72 x 54 mm

#### Technical data:

**Operating voltage:** 24 V DC

**Wind speed:** 0–20 m/s

**Output:** 4 pulses per revolution

**Type of protection:** IP 43

#### Technical data:

**Operating voltage:** 100–240 V~, +10 %, –15 %

**Frequency:** 50–60 Hz

**Switching power:** 8 A/250 V~

**Contact:** NO contact, potential-free

**Type of protection:** IP 20 according to EN 60 529

**Protection class:** II when mounted in accordance with its designated use

**Label:** VDE

**Housing:** 90 x 71 x 57 mm

Type	Order No.
LUNA 131 DDC combination sensor, temperature- and brightness sensor for analogue inputs on PHARAO units, 0–10 V DC	131 9 700
LUXOR 413	413 0 000
SUD 228 (8 h) charging switch for electric storage heaters, output 8 A, input for ripple control receiver/rate time switch and manual switch	228 0 575
SUD 228 (9 h) charging switch for electric storage heaters, output 8 A, input for ripple control receiver/rate time switch and manual switch	228 0 576
Programming cable, PC/PHARAO	907 0 252
PHARAO-II GSM cable	907 0 329
Plug-in PHARAO-II EEPROM	907 0 328

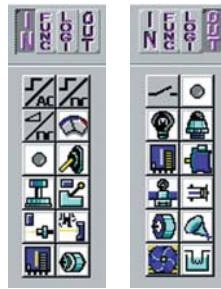
# Din rail program

## Programmable logic controller – Programming

### Easy-to-use programming and wiring of function blocks at the PC

#### Control unit and operator control terminal in one device

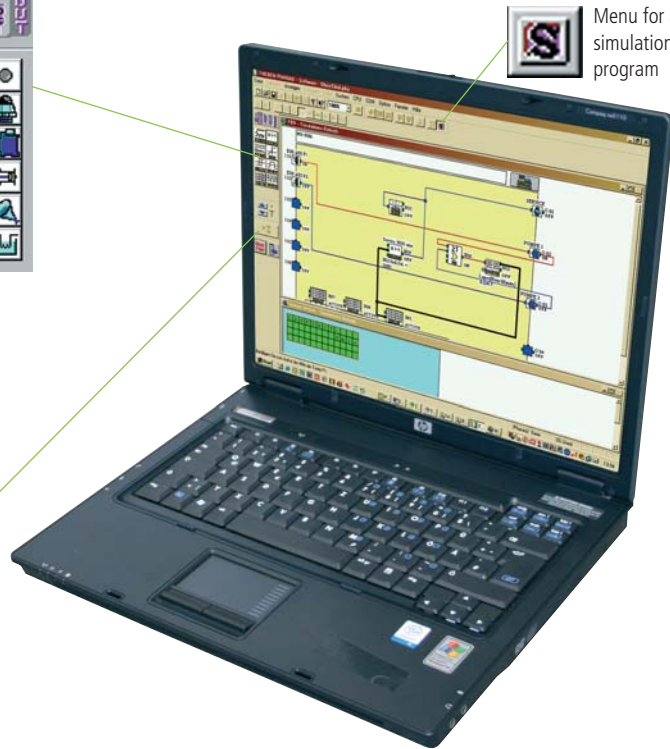
Comment texts and on-line values from the PHARAO control unit's program can be displayed on the LCD via the newly developed display function. Several 4-line display with different values can be called up by scrolling. The LCD is therefore not used just for program input, but also for displaying information texts, switching statuses, time, count values, analog values, operating hours etc. Values and switch statuses can be altered via the control keys which can be used in the program as additional control inputs.



Tool rail inputs and outputs (extracts)



Tool for wiring the circuit path



Menu for animated simulation of the program

### Communication in all directions

Cost efficient remote control and monitoring. Because PHARAO software 2.0 contains the entire set of communication tools, the PC requires only a modem to enable remote configuration, monitoring and programming.



Error messages or threshold values in the text can be sent by SMS from controller to mobile telephone.



Error messages or threshold values in the text can be sent from controller to Fax machine.



Analogue modem

