

PR114

Programmable relay

Due to the programmable relay PR114 users can cost-effectively implement from simple to complex control tasks in various application areas. Universal (digital/analog) input and outputs as well as the universal (24 V DC / 230 V AC) power supply make the PR114 particularly flexible. Free akYtec ALP software is used for programming. Due to the built-in real-time clock, different tasks with a time reference can be implemented. If necessary, the relay can also be integrated in an RS485 network as a Modbus slave. What is needed is just a PR-MI485 interface adapter connected directly to the relay without requiring any auxiliary power supply. For implementing complex projects, the PR114 also has extensive hardware resources such like retain memory.

Areas of applications:

- Indoor and outdoor lighting, shop window lighting and access systems
- Control of compressors
- Control of fans
- Control of pumps
- Control of lifting, conveyor and filling systems

Ordering code:

PR114 - 224. 8D.4A. 4R. XXXX RTC

Outputs

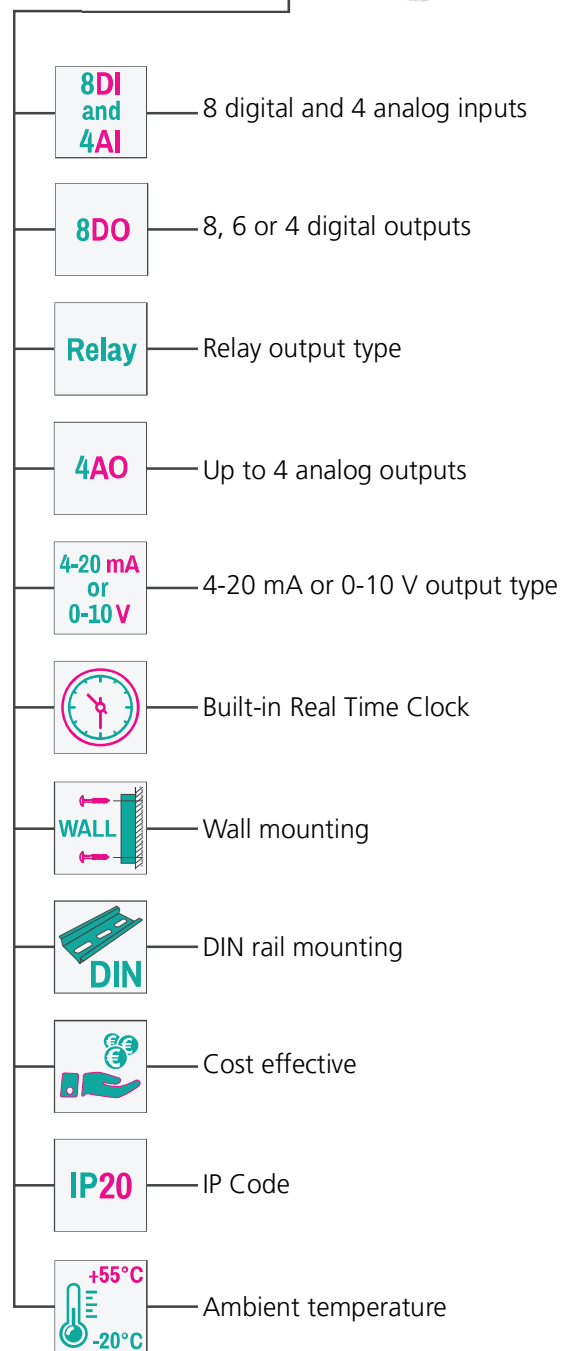
Relay	R
NPN*	K
Optical TRIAC*	S
Logic output*	T
Analog 4-20 mA*	I
Analog 0-10 V*	U

Real Time Clock

*On request

Various types of outputs should be indicated in the order key only in the certain sequence: R -> K -> S -> T -> I -> U

Standard variants	Description	Enclosure
PR114-224.8D.4A.4R. IIII-RTC	230 V AC / 24 V DC, 8DI + 4AI + 4DO + 4AO + RTC	DIN rail / wall 96 × 110 mm
PR114-224.8D.4A.4R. RRII-RTC	230 V AC / 24 V DC, 8DI + 4AI + 6DO + 2AO + RTC	DIN rail / wall 96 × 110 mm
PR114-224.8D.4A.4R. RRRR-RTC	230 V AC / 24 V DC, 8DI + 4AI + 8DO + RTC	DIN rail / wall 96 × 110 mm
PR114-224.8D.4A.4R. UUUU-RTC	230 V AC / 24 V DC, 8DI + 4AI + 4DO + 4AO + RTC	DIN rail / wall 96 × 110 mm



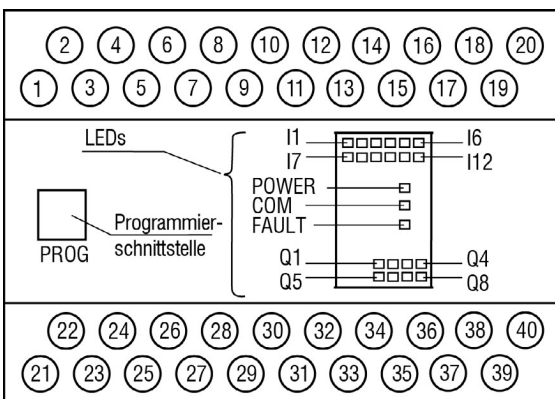
PR114

Technical Data:

PR114-224.8D4A.8R

General		
Power supply		230 (90...264) V AC; 50 / 60 (47...63) Hz or 24 (20...27) V DC
Power consumption, max.		10 VA
Integrated voltage source		24±3 V DC, 140 mA
Real Time Clock		yes
DI/DO status indicators		LED
Communication protocols		Modbus RTU / ASCII (Slave)
Mounting		DIN rail / wall
Ambient temperature		-20...+55 °C
IP code		IP20
Dimensions		96 × 110 × 73 mm
Weight		approx. 410 g
Programming		
Programming environment		akYtec ALP
Programming language		FBD
Program memory		450 FBs
Retain memory		136 byte
Programming interface		UART, USB (available with PR-KP20)
Digital inputs		(I1...I8)
Quantity		8
Type		switch contact, PNP, 24±3 V DC
Logical states	1	15...30 V DC (2...4 mA)
	0	-3...+5 V DC (≤ 0.1 mA)
Galvanic isolation		in groups of 4
Universal inputs		(I9 ... I12)
Quantity		4
Type		digital / analog
Galvanic isolation		none
Analog input		analog 0-10 V, 4-20 mA or digital
ADC Resolution		12 bit
Digital outputs		(Q1...Q8)
Quantity		8
Type		relay
Galvanic isolation		yes
Switching capacity	AC	10 A, 250 V (resistive load)
	DC	5 A, 30 V
Minimum load current		10 mA (at 5 V DC)

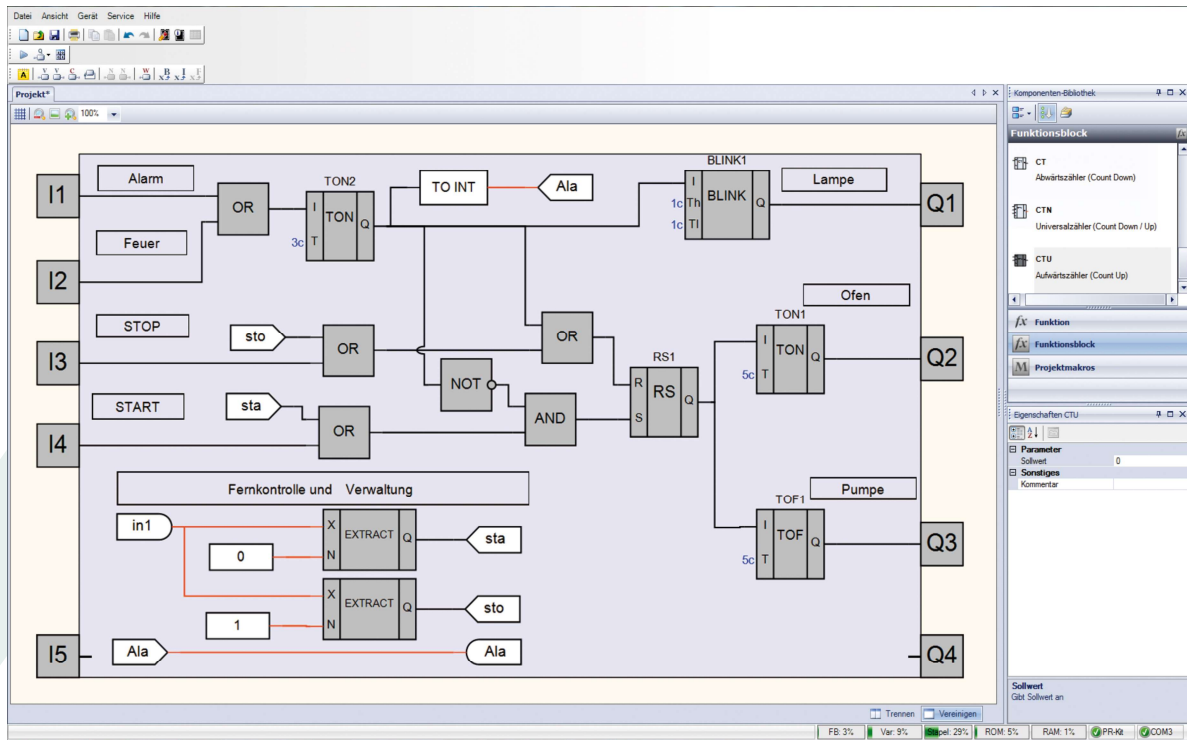
Front view:



Further optional outputs available:
NPN, opto-triac, SSR
4-20 mA, 0-10 V
(with DAC resolution 10 bit)

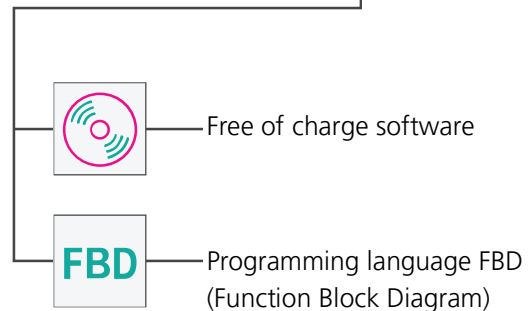
akYtec ALP

akYtec ALP software tool is a programming environment for akYtec programmable relays. Projects for programmable relays are written in the programming language FBD (Function Block Diagram) according to IEC 61131-3. akYtec ALP is free and included in delivery.



Properties:

- Creating your own function blocks / macros
- Simulation mode
- Use of internal variables for a simplified project creation
- Firmware update function
- Projects can be saved as files or be printed
- Complete overview of resource use and their availability in the project
- Integrated Display Manager for PR200
- Access to Online Macro Database



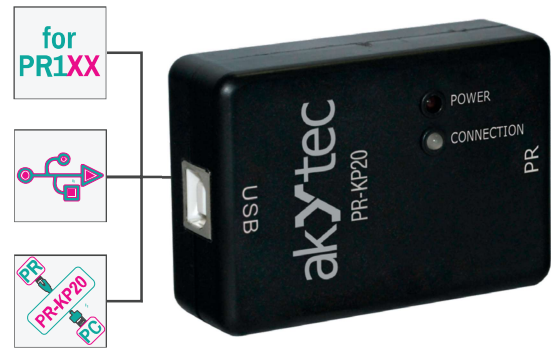
Overview of the functions and function blocks:

- | | |
|--|--|
| <p>Functions:</p> <ul style="list-style-type: none"> • Logical operators • Mathematical operators • Relational operators • Bit operators | <p>Function blocks:</p> <ul style="list-style-type: none"> • Triggers • Timers • Generators • Counters • PID controller |
|--|--|

PR-KP20

Programming adapter PR-KP20

The programming adapter PR-KP20 is a device intended for connecting programmable relays PR110 and PR114 to PC in order to transfer the user application created in the akYtec ALP software to the relay. The adapter is powered directly over the USB port on the PC.



Technical data:

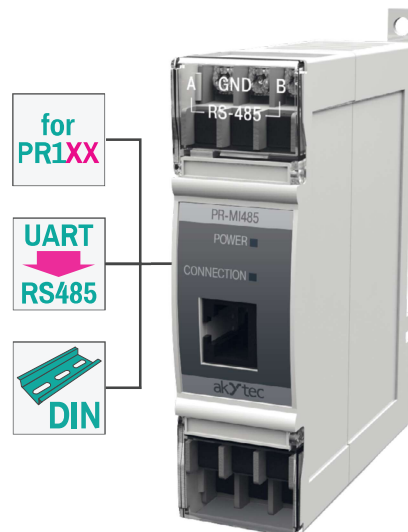
Power supply	via USB-2.0 interface
Power consumption, max.	0.5 W
Baud rate	up to 115.2 kbit/s
Dimensions	66 x 46 x 22 mm
Ambient temperature	-20...+50 °C
Humidity	up to 80 % (non-condensing)
Connection cable	1) USB 2.0 type A-B (1.5 m) 2) RJ12-RJ12 (1 m)

PR-MI485

PR-MI485 interface adapter

The interface adapter PR-MI485 is designed for connecting programmable relays PR110 and PR114 to any RS485 network as Modbus Slave. The PR-MI485 doesn't require any auxiliary power supply unit and is powered directly from the relay over the cable (included). The adapter supports the following protocols:

- Modbus Slave ASCII
- Modbus Slave RTU



Technical data:

Power supply	24±3 V DC
Power consumption, max.	1.0 W
Baud rate	up to 115.2 kbit/s
Galvanic isolation	yes
Protection class	III
IP code	IP20
Dimensions	28 x 77 x 111 mm
Weight	approx. 85 g
Ambient temperature	-25...+55 °C
Humidity	up to 80% (non-condensing)