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 Smart solutions for comfort and safety

Controls

Industrial text terminals

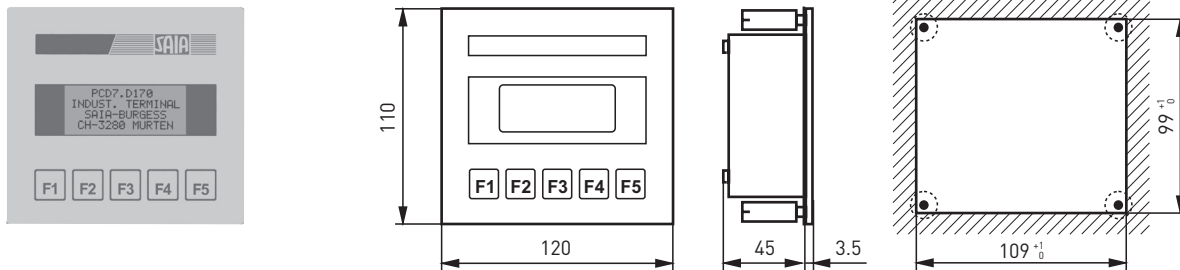
Take advantage of the high intelligence and ample memory of SAIA®PCD controllers

Why choose control terminals without text memory?

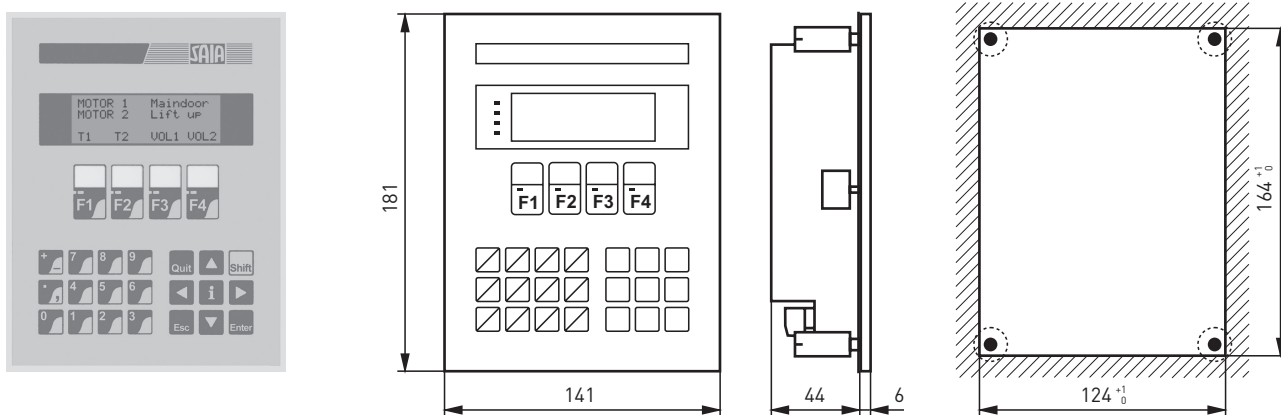
- **All resources are in the same place:** The PCD controller's user memory is utilized for this and is managed with the standard programming tool. As a result, any possibility of resource problems is immediately excluded.
- **Access via any network and via modem:** Resources and text can therefore be accessed anywhere, any time. This reduces the cost of commissioning and enables modifications to be made comfortably from one's desk.
- **Design of display and menu structures with the HMI-Editor:** This convenient add-on tool for the PG5 programming package makes it easier to edit text and variables, create screen structures and assign functions to keys.
- **The ..D16.. small terminals for direct mounting:** These are mounted directly on the cover, resulting in a compact controller with direct display and input possibilities.
- **Manual terminal, programming and service unit in one:** The PCD8.P100 not only has a 4-line display with 20 characters each, but also 30 text and function keys. It is hooked up directly at the PGU connector.
- **Point-to-point connection as stand-alone or in a network:** All terminals are connected via an RS252 interface. Up to 31 terminals type PCD7.D790 or ..D795 can be run in a network at a single RS485 interface. The ..D250 terminal can additionally be equipped for RS422 or TTY/20mA current loop.

The full range of text terminals at a glance

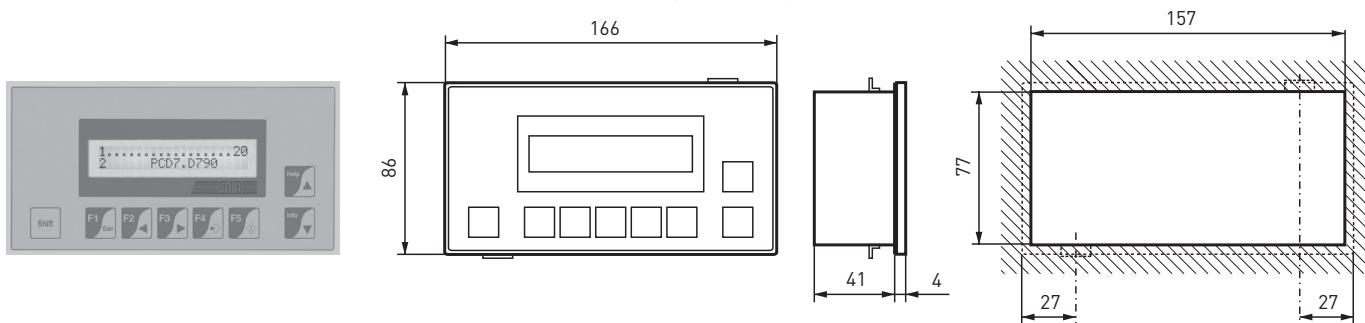
Terminal PCD7.D170, 4 × 16 characters, 5 function and system keys



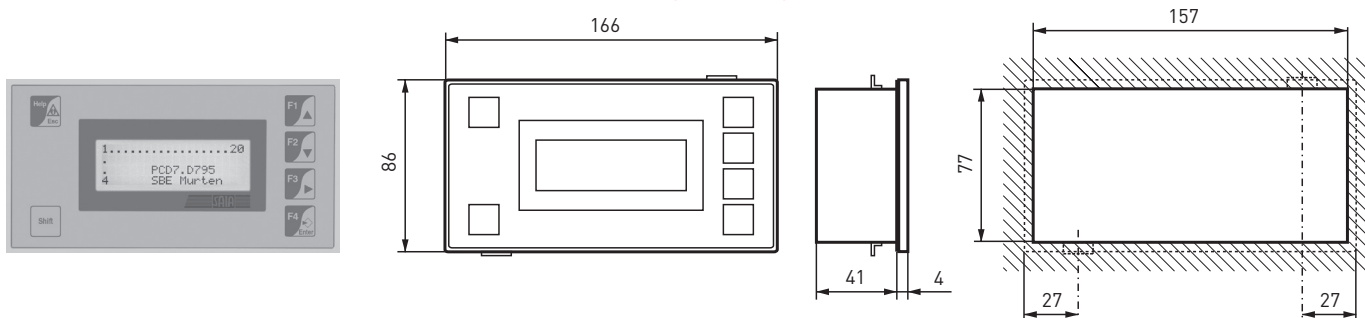
Terminal PCD7.D202, 4 × 20 characters, 4 function keys, system keys, 12 numeric keys



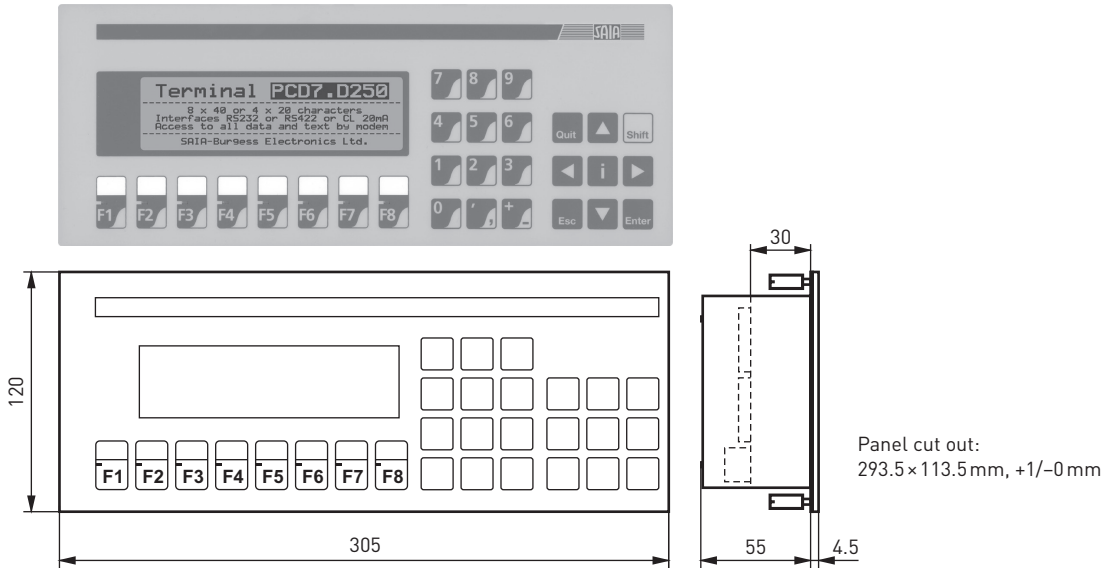
Terminal PCD7.D790, 2 × 20 characters, 8 function and system keys



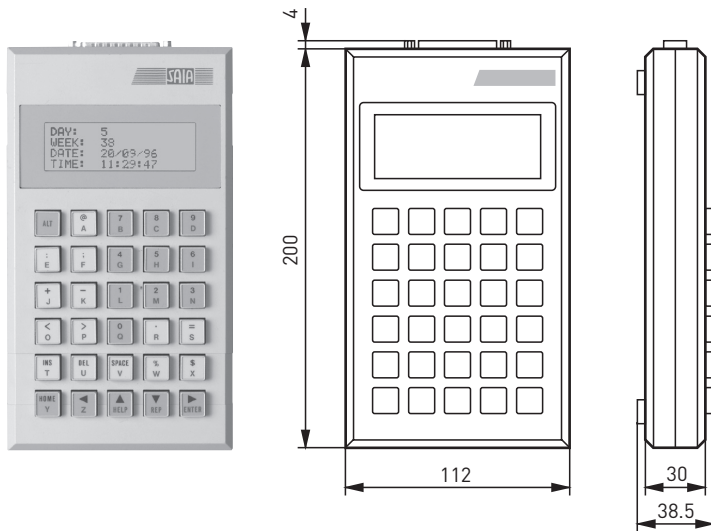
Terminal PCD7.D795, 4 × 20 characters, 6 function and system keys



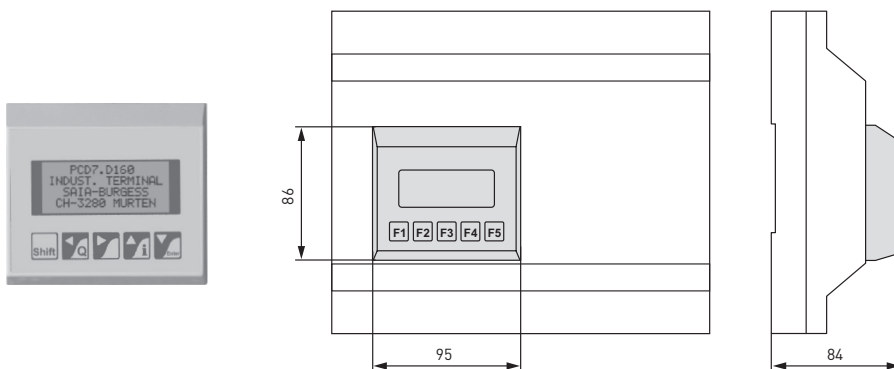
Terminal PCD7.D250, 4 × 20 or 8 × 40 characters, 8 function keys, 9 system keys, 12 numeric keys



Terminal PCD8.P100, 4 × 20 characters, 5 system keys, 25 alphanumeric keys



Terminal PCD7.D16., 4 × 16 characters, 5 function and system keys



The same dimensions also apply for the PCD1. A special cover with a slot is required for the PCD1 (no. 4'104'7338'0) or for any order of configured PCD1 combinations (see ordering details).

Technical data

Type designation	PCD7.D170	PCD7.D202	PCD7.D250
Display			
Type	LCD with LED back-lighting	LCD with LED back-lighting	LCD with LED back-lighting
Display dimensions (w × h)	4 × 16 characters 60 × 24 mm	4 × 20 characters 74 × 24 mm	4 × 20 / 8 × 40 characters ¹⁾ 130 × 36 mm
Character size (w × h)	5 × 7 pixels + cursor 2.95 × 4.75 mm	5 × 7 pixels + cursor 2.95 × 4.75 mm	10 × 14 / 5 × 7 pixels + cursor 5.3 × 7.5 / 2.6 × 3.7 mm
Contrast adjustment	software	software	software
Back-lighting	off/on	on/off	on/off
Character fonts	ASCII + special characters for English, German, French, Scandinavian languages (+ IBM CodePage 437 for ..D250)		
Keyboard			
Function keys, customizable	5	4	8
LEDs for function keys	–	4	8
System keys / numeric keys	[5] ²⁾	9 / 12	9 / 12
Alphanumeric keys	–	–	–
Diagnostic LEDs	–	4	–
Memory			
Text and data	Entire text and data memory of PCD controller, i. e. from max. 140 KBytes for PCD1 to max. 1 Mbytes for PCD2.M17.. and PCD6		
Interfaces			
to SAIA®PCD	RS 232 9-pole, D-type	RS 232 9-pole, D-type	RS 232, with ..F2.. modules RS 422 or TTY
Performance and programming			
Performance features	All performance features of PCD controllers are also available for terminals, such as: up to 8000 texts, data in any format, alarm handling, password protection, real time clock		
Programming software	HMI-Editor	HMI-Editor	HMI-Editor
General data			
Supply voltage U _n	24 VDC, +30 % / -20 % or 19 VAC, ±15 %, full-wave rectified		
Power consumption at U _n	100 mA	200 mA	320 mA
Interference immunity	CE mark according to EN 50 081-1 and 50 082-2		
Protection class (front)	IP 65	IP 65	IP 65
Operating temperature	0...50 °C	0...50 °C	0...50 °C
Storage temperature	-25...+70 °C	-25...+70 °C	-25...+70 °C
Humidity (without condensation) DIN 40040 class F	5...95 %	5...95 %	5...95 %

¹⁾ Text size is switchable and text can also be displayed in reverse [see picture].

²⁾ Software configuration of the 5 keys produces 5 function keys or, with a shift key, 8 key functions.

Type designation	PCD7.D790 ³⁾	PCD7.D795 ³⁾	PCD8.P100
Display			
Type			
Display dimensions (w × h)	2 × 20 characters 74 × 12 mm	4 × 20 characters 70 × 21 mm	4 × 20 characters 74 × 24 mm
Character size (w × h)	5 × 7 pixels 2.95 × 4.75 mm	5 × 7 pixels 2.95 × 4.75 mm	5 × 7 pixels + cursor 2.95 × 4.75 mm
Contrast adjustment	potentiometer	potentiometer	potentiometer
Back-lighting	–	–	–
Character fonts	ASCII (0...127)	ASCII (0...127)	ASCII + special characters for English, German, French, Scandinavian languages
Keyboard			
Function keys, customizable	5	4	–
LEDs for function keys	–	–	–
System keys / numeric keys	8	6	5
Alphanumeric keys	–	–	25
Diagnostic LEDs	–	–	–
Memory			
Text and data	Entire text and data memory of PCD controller, i. e. from max. 140 KBytes for PCD1 to max. 1 Mbytes for PCD2.M17.. and PCD6		
Interfaces			
to SAIA®PCD	RS 232/RS 485 25-pole, D-type	RS 232/RS 485 25-pole, D-type	RS 232 25-pole, D-type ⁴⁾
Performance and programming			
Performance features	All performance features of PCD controllers are also available for terminals, such as: up to 8000 texts, data in any format, alarm handling, password protection, real time clock		
Programming software	HMI-Editor ⁵⁾	HMI-Editor ⁵⁾	–
General data			
Supply voltage U _n	24 VDC –25%/+30 %	24 VDC –25%/+30 %	5VDC from PGU connector of PCD1/2/4 ³⁾
Power consumption at U _n	200 mA	200 mA	120 mA
Interference immunity	CE mark according to EN 50 081-1 and 50 082-2		
Protection class (front)	IP 65	IP 65	IP 40
Operating temperature	0...50 °C	0...50 °C	0...50 °C
Storage temperature	–20...+60 °C	–20...+60 °C	–25...+70 °C
Humidity (without condensation) DIN 40040 class F	≤85 %	≤85 %	5...95 %

³⁾ Version with "free terminal protocol" is required.

⁴⁾ PCD8.K101 cable connects the ..P100 directly to the PGU socket of any SAIA®PCD, which provides it with the 5VDC supply voltage.

⁵⁾ HMI-Editor from V1.1 is required.

The plug-on type small terminals PCD7.D16..

Saia's small terminals take advantage of the high intelligence and ample memory of SAIA®PCD controllers and can therefore be used economically and to optimal effect with industrial control systems or in building automation.

- The terminals plug straight onto the cover of PCD1 or PCD2 controllers. This combination results in an intelligent controller with the capacity for direct display and entry.
- The texts to be displayed are stored in the PCD control device. This means that the same programming tool can be used as for the control program. In addition, access to text and variables is possible at any time via modem.
- The intelligent text output of PCD controllers allows variables to be edited as desired and output to the display in the necessary format.
- Depending on the choice of terminal set and base unit, further communications possibilities arise. The following table gives details of these.

Display	
Type	LCD with LED back-lighting
Display dimensions (w×h)	4 × 16 characters / 60 × 24 mm
Character size (w×h)	5 × 7 pixels + cursor / 2.95 × 4.75 mm
Contrast adjustment	software
Back-lighting	off/on
Character fonts	ASCII plus special characters for English, German, French, Scandinavian languages
Keyboard	
Function keys	5 ¹⁾
Memory	
Text and data	entire text and data memory of PCD controller
Interfaces	
to SAIA®PCD	plugged directly onto PCD1/PCD2
Performance and programming	
Performance features	All performance features of the PCDs are available, such as: up to 8000 texts, data in any format, alarm handling, password protection, real time clock
Programming software	HMI-Editor
General data	
Supply voltage	5VDC from PCD1/PCD2 bus
Power consumption at 5V	300 mA or 100 mA ²⁾
Interference immunity	CE mark EN 50081-1/50082-2
Protection class (front)	IP20
Ambient temperature	operating 0...50 °C, storage -25...+70 °C
Humidity (without condensation)	5...95% according DIN 40040 class F

¹⁾ Software configuration of the 5 keys produces 5 function keys or, with a shift key, 8 key functions.
²⁾ 100 mA with back-lighting switched off.

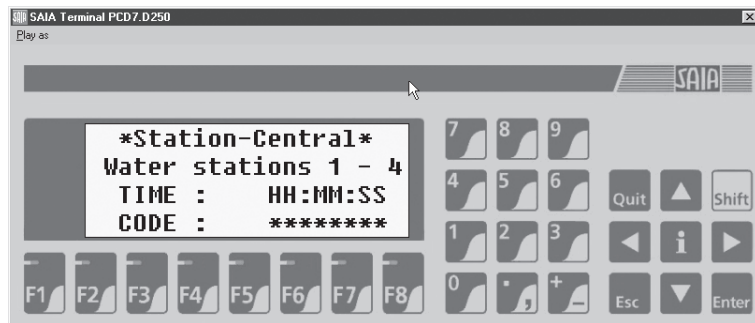
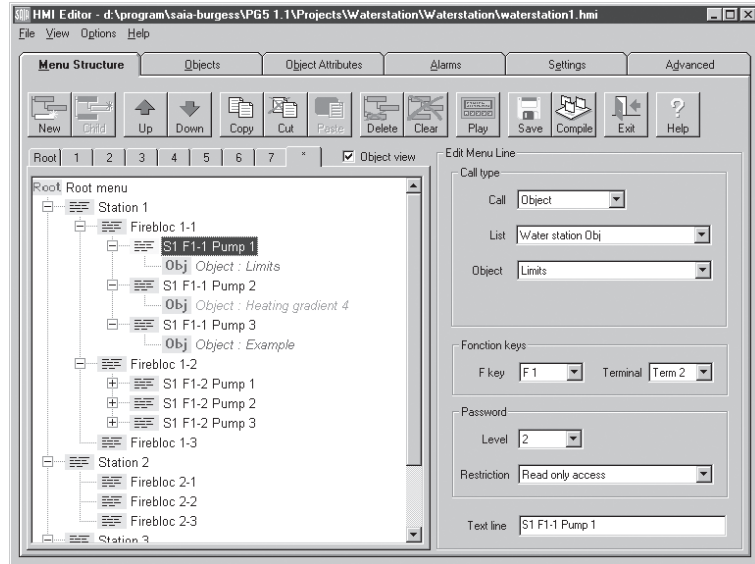
Terminal set	Terminal ..D160	Additional communications channels					Mounting possible on channels			
		RS 422/RS 485	RS 485, gs ²⁾	RS 485, gc ²⁾	PROFIBUS DP	LONWORKS®	PCD1.. ¹⁾		PCD2..	
							..M110	..M120/..M13..	..M110	..M12../..M15.. ..M17..
PCD7.D162	★	-	-	-	-	★	★	★	★	
PCD7.D163	★	★	-	-	-	-	★	-	★	
PCD7.D164	★	-	★	-	⊕	★ ³⁾	★	-	★	
PCD7.D165	★	-	-	★	-	⊕	★ ³⁾	★	★	

¹⁾ Cover required with opening no. 4'104'7338'0
²⁾ gs = galvanically separated, gc = galvanically connected
³⁾ The additional RS485 port is not available here

The HMI-Editor Use of multiple terminals

Easy creation of visual displays

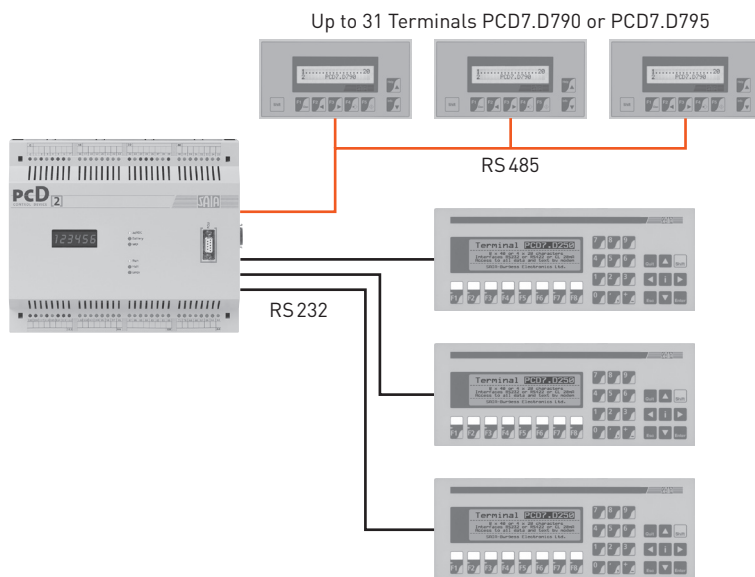
- Add-on tool for the PG5 programming package. Simple structuring of terminal screens for the whole range of SAIA® text terminals.
- Text, variables and system messages generated and edited with just a few clicks. A menu tree includes all the terminal screens that are to be displayed and their accompanying objects (text, connections to PCD data points, formats, etc.).
- Play function for checking a terminal menu. It verifies the display, sequence of menu screens, sub-menus, etc.
- Same terminal menu for different terminals.
- Event controlled alarms are displayed instantly. Several lines for detailed messages in plain text. Special lines with time stamp or status information.
- Password hierarchy of up to 10 levels protects each individual object.
- Function keys and LEDs can be programmed individually for each terminal.
- For details see Technical Information 26/355.



Use of multiple SAIA® terminals

Up to 6 identical terminals can be operated in a star structure via an RS232 serial data port. The same information is displayed on all terminals.

Terminal types PCD7.D790 or ..D795 with "Free terminal protocol" can be operated in a point-to-point network. This means that up to 31 terminals of the same type can be connected to a single RS485 port. Basically, the same information is therefore displayed on all connected terminals. However, with the HMI editor it is possible to define a menu window for each terminal that can instantly be displayed at any time via a function key.



Up to 6 Terminals PCD7.D170 (..D16..) or PCD7.D202 or PCD7.D250 or PCD7.D790 or PCD7.D795

Ordering information

Type	Description	Weight
PCD7.D170	Small terminal for front panel flush mounting with display of 4 × 16 characters	260 g
PCD7.D202	Terminal for front panel flush mounting with display of 4 × 20 characters	400 g
PCD7.D790 ¹⁾	Terminal for front panel flush mounting with display of 2 × 20 characters	500 g
PCD7.D795 ¹⁾	Terminal for front panel flush mounting with display of 4 × 20 characters	500 g
PCD7.D250	Industrial text terminal for front panel flush mounting with display of 8 × 40 or 4 × 20 characters	850 g
PCD7.F210	Interface module RS 422	8 g
PCD7.F231	Interface module 20 mA current loop (TTY)	8 g
PCD8.P100	Hand-held terminal for servicing and text dialogue, with display of 4 × 20 characters	450 g
	Interface connecting cables (shielded, for RS 232)	
PCD7.K412	between ..D170, ..D202 or ..D250 terminals and the PGU connector of PCD CPUs (9-pole D-type connector both ends), length 2.5 m	
PCD7.K422	between ..D170, ..D202 or ..D250 terminals (9-pole D-type connector) and the RS 232 interface of the PCD1, PCD2 or PCD4 (wire ends free), length 2.5 m	
PCD8.K101	between the ..P100 hand-held terminal (25-pole D-type connector) and the PGU connector of PCD CPUs (9-pole D-type connector), length 2 m	
	Small terminal set , consisting of terminal with display of 4 × 16 characters and interface module	
PCD7.D162	without additional interface	
PCD7.D163	with additional RS 422/RS 485 interface	
PCD7.D164	with PROFIBUS DP connection (as slave) + RS 485 interface, galvanically separated	
PCD7.D165	with LONWORKS® connection + RS 485 interface, galvanically connected	
	Order for ready-to-use, configured combinations , consisting of a controller and terminal set: Type of controller + terminal set, e. g. PCD1.M120 D162 or PCD2.M150 D165. Please note possible combinations as set out in the above table.	
26/753 E	Manual PCD7.D16../..D170	
26/746 E	Manual PCD7.D202	
26/770 E	Manual PCD7.D250	
26/780 E	Manual PCD7.D790/..D795 with «Free terminal protocol»	

¹⁾ Version with "free terminal protocol" as well as HMI-Editor from V 1.1 are required.

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