

Industrial PC

Customised IPC solutions

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Introduction

Platform strategy

Our philosophy is to provide you with a rapid and economical way of achieving a customised PC solution. Our consistently applied platform strategy makes it possible to configure the industrial PC or the control solution individually and additionally allows you to extend it almost without limit in terms of its performance, display size, functionality, etc.

Industrial PC platform

- ▶ PC unit
 - Designs: Built-in Panel PC, Stand-alone unit or Control cabinet IPCs
 - Centralised or decentralised solution
- ▶ Operating systems
- ▶ Processor modules
- ▶ Front modules: control unit

PC unit

Designs

Industrial PC		available execution
	Panel PC	Built-in version for integration into control cabinet doors, control boards or machine enclosures
	Command Station	Stand-alone version with protection category IP65 for direct installation in close proximity to machines.
	Control cabinet PC	Control cabinet unit for direct installation in plants and machines

Centralised or decentralised solutions

Solutions		
		Depending on the demands placed on the installation of the industrial PCs, both "central" Panel PC solutions and also decentralised "separate solutions" are available.
	centralised solution Industrial PC with display front module	The Panel PCs are compact devices which combine display, operation and electronics in a common housing.
	decentralised solution Control cabinet PC plus a remotely located Monitor Panel	The decentralised solutions consist of separate units: the industrial PC, which is preferably housed in a protected environment in the control cabinet, and the operation unit on site. This solution has advantages in relation to the cabling, operating conditions and accessibility of the drives.

Operating systems

Lenze offers a selection of preconfigured operating systems, which are specially adjusted for the Industrial PC. The operating systems are preinstalled and are configured and tested in a way which can easily be reproduced. The systems are therefore efficiently applicable.

Microsoft® Windows® and Embedded operating systems

► Windows® XP Multilanguage

Plug & Play operating system in Multilanguage execution. Windows® XP Multilanguage contains the preinstalled languages English, German, French, Spanish, Portuguese, Chinese (PRC)

► Windows® XP Embedded

Windows® XP Embedded is the component-based version of Windows® XP Professional, which makes it possible to select precisely those system components which are required for a particular combination of hardware and software.

If suitably configured, Windows® XP Embedded also permits the installation of Compact Flash and in certain applications it is possible to run the system without UPS power backup.

► Windows® CE 5.0

Windows® CE offers real-time capability and is a suitable platform for control tasks and motion control.

Thanks to its miniaturised architecture, the system is easily accommodated on a Compact Flash memory card, producing robust systems for operation in close proximity to machines, with the additional benefit that these can be operated without a cooler fan or a hard disk.

Processor modules

Looking to the future with Pentium M technology

In the laptop sector the Intel® Pentium M processor has redefined mobile computing. This is similarly the technology of the future in the industrial area of applications.

The use of Intel® Core™2 Duo processors makes possible a technological breakthrough, offering yet more performance. At the same time, the integration of control systems, motion control and operation on a single PC produces high-performance standard architectures in the automation area.

Processor modules

Overview

	ETX modules					ATX board		
	LX-800 AMD Geode 500 MHz	Mobile Intel® Celeron M (ULV) 600 MHz or 1 GHz	Mobile Intel® Celeron M 1.5 GHz	Mobile Intel® Pentium M 1.8 GHz	Intel® Core™ 2 Duo 1.66 GHz (L2400 LV)	Mobile Intel® Celeron D 3.2 GHz	Intel® Core™ 2 Duo 1.8 GHz (E4300)	Intel® Core™ 2 Duo 2.13 GHz (E6400)
Cooling	Fanless ^{*)1}		Smart Cool ^{*)2}			Active Cooling		
Memory (max.)	1 GB, DDR	1 GB, DDR			2 GB, DDR2	4 GB, DDR2		
Cache Memory	128 kB L2 Cache	512 kB L2 Cache	1 MB L2 Cache	2 MB L2 Cache	2 MB L2 Cache	512 KB L2 Cache	2 MB L2 Cache	2 MB L2 Cache
Chipset	Geode CS5536	Intel® 82855 GME			Intel® 945 GM	Q 965		
Ethernet (10/100 Base T)	Davicom DM9102D	Intel® 82562			integrated	2 x 10/100/1000 Realtek		
USB	USB 2.0	USB 2.0			USB 2.0	8 x USB 2.0		
Graphics	integrated in Geode CS5536 Companion Chip	integrated in Intel® 82855 GME			integrated in Intel® 945 GM	integrated in Intel® ICH8D0		

^{*)1} depends upon equipment and ambient temperature

^{*)2} Smart Cool: Cooling control with programmable limited temperature

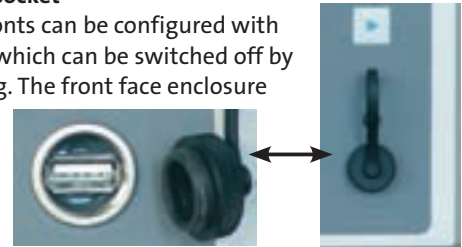
Front modules

In order to correspond to the various requirements, Lenze offers a selection of different standard control units in enclosure IP65.

The basis of these front modules forms a support plate with decorative foil and the integrated industrial TFT display in the diagonals 8.0"- 19.0" with analog resistiv touch sensor.

Front face USB socket

Optional the fronts can be configured with an USB socket, which can be switched off by software setting. The front face enclosure IP65 persists also with this option.



	Control units				
Range of controls	Touch	Touch plus mounting field, 7 control elements and emergency stop	Touch plus F/S keys (Smart Keys)	Touch plus Num, Alpha and F keys	Touch plus Num, Special, F keys and MF2 Layout: German or English
Front example					
	EL- / CS- / MP xx00	CS- / MP xx10	EL- / MP xx20	EL- / CS- / MP xx50	EL- / CS- / MP xx70

Customer-specific solutions

For various industrial sectors and environmental conditions, widely differing requirements apply in relation to the design of IPC and operator panels, and these cannot always be satisfied by using standard components. In addition, it is necessary for these operator devices to match the requirements and design for the customer application.

A consistently applied platform strategy with defined interfaces in electronics and mechanics allows various combinations for modules. We are therefore able to produce the ideal system for almost every application within a short timeframe.

Here are a few examples of customer-specific systems.

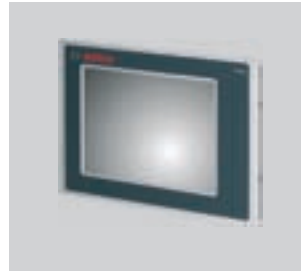


Photo: Bosch



Photo: Satisloh



Photo: Technotrans



Photo: Monforts



Photo: Monforts



Photo: Vaillant



Photo: Markem

In addition to consultancy and the preparation of performance specifications, our services include planning and construction as well as the preparation and modification of software.

Embedded Line

Technology

Industrial PCs of the series Embedded Line (EL) are panel PCs for building into equipment, designed for demanding, continuous deployment in industrial environments. High-performance low-power processors familiar to users of notebooks, including the well known Pentium M and Celeron M processors, which facilitate peak CPU performance with low heat generation, form the technological basis. In consequence, it is possible for us to maintain the compact dimensions of our Embedded Line IPCs whilst offering a robust construction which does not require a cooling fan.

In addition to the thermal advantages, this choice of components and their resistance to EMC interference form criteria which provide for long-lasting problem-free operation under the harshest industrial conditions.

To ensure the availability of the system and the security of your investment, we use without exception chip sets with long-term availability and CPUs from well known manufacturers.

Building our products into equipment

Embedded Line Industrial PCs are designed for building into control cabinets, the casing of machinery or other forms of mounting apertures and are equipped with bolts and clamping screws on the rear face, to ensure simplicity of assembly and assured sealing (IP65), even in aggressive industrial environments.

Equipment

All Embedded Line Industrial PCs are equipped with Ethernet as well as USB and depending upon the model with 1 or 2 serial RS232 interfaces and have in each case a slot for a Compact Flash drive.

A USB connection on the front face with an IP65 cover flap facilitates the rapid and easy connection of peripheral devices, for example for servicing requirements. To protect the data from unauthorised access, this port can be switched off by means of software.

The equipment options include UPS (uninterruptible power supply) and as an alternative a maintenance-free capacitor UPS (CAPS) for data retention (remanence), as well as for "shut down" the system in the case of a loss of power.

The Industrial PCs of the series of Embedded Line are available in two different designs, differing in terms of the slots for modules:

- ▶ EL 870-9700: 2 x MC (PCI module card)
- ▶ EL 2200-9200: 1 x PCI, 1 x PCI/ISA slot card



Front modules of the Embedded Line Industrial PCs

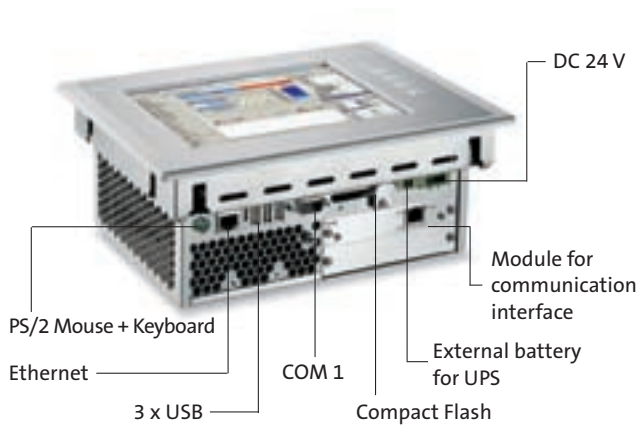
Execution, range of controls, front dimensions and display data

Front modules			Dimensions mm (W x H) ¹⁾	Diagonals	Brightness (cd/m²)	Resolution	MTBF (h)
EL 870 - EL 9700			EL 2200 - EL 9200				
▶ Device designation							
Touch 			Range of controls Front face 4 keys for system control: ▶ 3 programmable keys (F1-F3) ▶ „Service mode“ key for adjustment of display brightness to surroundings and for increased usable life of display (background illumination).				
	▶ EL 870		265 x 200	8.0"	400	640 x 480	50.000
	▶ EL 1700		325 x 240	10.4"	400	640 x 480	40.000
	▶ EL 1700s		325 x 240	10.4"	350	800 x 600	50.000
	▶ EL 2700	▶ EL 2200	390 x 300	12.1"	300	800 x 600	50.000
	▶ EL 5700	▶ EL 5200	450 x 325	15.0"	250	1.024 x 768	50.000
	▶ EL 9700	▶ EL 9200	490 x 400	19.0"	300	1.280 x 1.024	50.000
Touch plus F/S keys (Smart Keys) 			Range of controls ▶ F1...F12 ▶ S1...S14 (smart keys) ▶ ESC ▶ Enter ▶ alternative labelling for S1...S14				
	▶ EL 5720	▶ EL 5220	483 x 310 19"/ 7 HE	15.0"	250	1.024 x 768	50.000
Touch plus Num, Alpha and F keys 			Range of controls (Multiple allocation): ▶ A...Z ▶ 0...9 ▶ F1...F12 ▶ Space ▶ Backspace ▶ Ctrl ▶ Alt ▶ Del ▶ Ins ▶ ESC ▶ TAB ▶ Home ▶ End ▶ PgUp ▶ PgDn ▶ Shift ▶ Enter ▶ level switch key Alpha ▶ symbols + - . , ; \ ▶ cursor keys ▶ print				
	▶ EL 1750		365 x 240	10.4"	400	640 x 480	40.000
	▶ EL 1750s		365 x 240	10.4"	350	800 x 600	50.000
	▶ EL 2750	▶ EL 2250	425 x 310	12.1"	300	800 x 600	50.000
	▶ EL 5750	▶ EL 5250	483 x 310 19" / 7 HE	15.0"	250	1.024 x 768	50.000
Touch plus Num, Special, F keys and MF2 			Range of controls (as above: version „Touch plus Num, Alpha, F keys“) plus ▶ MF2 control keypad, Layout: German or English				
	▶ EL 5770	▶ EL 5270	483 x 399 19" / 9 HE	15.0"	250	1.024 x 768	50.000

See appendix for precise dimensions for building in.

¹⁾ The mounting depth depends on the device type and the system equipment!

Industrial PC series: Embedded Line EL 870 - 9700 with 2 PCI module card slots



Applications

- ▶ Industrial PC for control and visualisation
- ▶ Automation system for machines in the production process, visualisation, PLC and motion control on a single system
- ▶ Plant control, visualisation, measurement and analysis data, control and data gathering system, Web terminal and much more: applications for operations in close proximity to machines

System characteristics

Industrial TFT displays	8.0" - 19.0" with resistive touch/glass screen
Extendable by means of communication interfaces	▶ MC-ETH Ethernet 100/ 1000 MBit, RJ45 ▶ MC-CAN2 Dual CAN Controller ▶ MC-ETC EtherCAT (Master), <i>(only in connection with L-force Logic & Motion)</i> ▶ MC-PBM, MC-PBS Profibus Master, Profibus Slave, MPI ▶ MC-PND ProfiNet Device (Slave)
Interfaces	1 x Ethernet 10/100 MBit, 3 x USB 2.0 on rear face, 1 x USB 2.0 for front module (optional, can be switched off), 1 x PS/2 Mouse + Keyboard (Combi), 1 x serial interface RS232
Processors	ETX module, see page 3-4
Cooling	▶ Passive via cooling radiators: LX800, Celeron M 600 MHz, Celeron M 1 GHz (max. 40°C) ▶ Smart Cool: Temperature-regulated cooling fan with double ball race and function monitoring
Operating systems	▶ Microsoft® Windows® XP Multilanguage ▶ Microsoft® Windows® XP Embedded (XPe) ▶ Microsoft® Windows® CE 5.0 Professional
Mass storage	▶ Insertion slot for Compact Flash ▶ Hard disk (standard, extended temperature range, permanent operation) ▶ Option: DVD writer drive (on rear face)
Power supply	▶ DC 24 V ± 25 % ▶ Option: Integrated UPS module for external battery or (super-CAPS) capacitor pack
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950, UL ▶ Protection category: front face IP65, rear face IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Relative humidity: 10 up to 90 % non condensing ▶ Maximum altitude: 3000 m above sea level

^{*)} Temperature range depends on the equipment

Order data

IPC series: Embedded Line EL 870 – 9700

Version: Windows® XP Multilanguage

alternatively also without operating system

			Ordering code															
	EL 870	„Touch“	8.0" TFT display with touch (640 x 480)	3400-	2													□□□□
	EL 1700		10.4" TFT display (640 x 480)	3401-														□□□□
	EL 1700s		10.4" TFT display (800 x 600)	3402-														□□□□
	EL 2700		12.1" TFT display (800 x 600)	3403-														□□□□
	EL 5700		15.0" TFT display (1.024 x 768)	3404-														□□□□
	EL 9700		19.0" TFT display (1.280 x 1.024)	3405-														□□□□
	EL 5720	„Touch plus F/S keys“	15.0" TFT display (1.024 x 768)	3406-														□□□□
	EL 1750	„Touch plus Num, Alpha, F keys“	10.4" TFT display (640 x 480)	3407-														□□□□
	EL 1750s		10.4" TFT display (800 x 600)	3408-														□□□□
	EL 2750		12.1" TFT display (800 x 600)	3409-														□□□□
	EL 5750		15.0" TFT display (1.024 x 768)	3410-														□□□□
	EL 5770	„Touch plus Num, Special, F keys and MF2“	15.0" TFT display (1.024 x 768)	3411-														□□□□
			- German layout	3412-														□□□□
	Front	Standard layout, non reflective glass screen		1														
		Standard layout, analog resistive touch screen		2														
		Front custom design		X														
	USB socket	Without front side USB socket		0														
		Front side USB socket (IP65)		1														
	Processors	Mobile Intel® Celeron M 600 MHz		8														
	Fanless	Mobile Intel® Celeron M 1 GHz		9														
	„Smart Cool“	Mobile Intel® Celeron M 600 MHz		H														
		Mobile Intel® Celeron M 1 GHz		K														
		Mobile Intel® Celeron M 1.5 GHz		D														
		Mobile Intel® Pentium M 1.8 GHz		E														
		Intel® Core™2 Duo 1.66 GHz		F														
	Active memory	512 MB		4														
		1024 MB		5														
	Mass storage	Hard disk 60 GB 2.5"		2														
		Hard disk 40 GB 2.5", extended temperature range		3														
		Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h		4														
	CD/DVD unit	Without		0														
		DVD writer drive (CD + DVD read/write)		3														
	Communication interface	Without		0														0
		MC-ETH	Ethernet 100/ 1000 MBit, RJ45	1														1
		MC-PBM	Profibus Master	5														5
		MC-PBS	Profibus Slave (+MPI)	6														6
		MC-PND	ProfiNet Device	8														8
	UPS	Without																0
		ACU UPS control unit (please order external battery pack separately, see page 3-46)		1														1
►	Operating system	Without																0000
		Windows® XP Multilanguage																4100
Ordering code			Your solution:															□□□□

Order data

IPC series: **Embedded Line EL 870 – 9700**

Version: Windows® XP Embedded (XPe)

				Ordering code															
	EL 870	„Touch“	8.0" TFT display with touch (640 x 480)	3400-	2													4114	
	EL 1700		10.4" TFT display (640 x 480)	3401-														4114	
	EL 1700s		10.4" TFT display (800 x 600)	3402-														4114	
	EL 2700		12.1" TFT display (800 x 600)	3403-														4114	
	EL 5700		15.0" TFT display (1.024 x 768)	3404-														4114	
	EL 9700		19.0" TFT display (1.280 x 1.024)	3405-														4114	
	EL 5720	„Touch plus F/S keys“	15.0" TFT display (1.024 x 768)	3406-														4114	
	EL 1750	„Touch plus Num, Alpha, F keys“	10.4" TFT display (640 x 480)	3407-														4114	
	EL 1750s		10.4" TFT display (800 x 600)	3408-														4114	
	EL 2750		12.1" TFT display (800 x 600)	3409-														4114	
	EL 5750		15.0" TFT display (1.024 x 768)	3410-														4114	
	EL 5770	„Touch plus Num, Special, F keys and MF2“	15.0" TFT display (1.024 x 768)	3411-														4114	
			- German layout	3412-														4114	
	Front	Standard layout, non reflective glass screen			1														
		Standard layout, analog resistive touch screen			2														
		Front custom design			X														
	USB socket	Without front side USB socket			0														
		Front side USB socket (IP65)			1														
	Processors																		
	Fanless	Mobile Intel® Celeron M 600 MHz			8														
		Mobile Intel® Celeron M 1 GHz			9														
	„Smart Cool“	Mobile Intel® Celeron M 600 MHz			H														
		Mobile Intel® Celeron M 1 GHz			K														
		Mobile Intel® Celeron M 1.5 GHz			D														
		Mobile Intel® Pentium M 1.8 GHz			E														
	Active memory	512 MB			4														
		1024 MB			5														
	Mass storage	Insertion slot for Compact Flash (standard)																1	
		Hard disk 60 GB 2.5"																2	
		Hard disk 40 GB 2.5", extended temperature range																3	
		Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h																4	
	CD/DVD unit	Without																0	
		DVD writer drive (CD + DVD read/write)																3	
	Communication interface	Without																0	0
		MC-ETH Ethernet 100/ 1000 MBit, RJ45																1	1
		MC-PBM Profibus Master																5	5
		MC-PBS Profibus Slave (+MPI)																6	6
		MC-PND ProfiNet Device																8	8
	UPS	Without																0	
		ACU UPS control unit (please order external battery pack separately, see page 3-46)																1	
►	Operating system	Windows® XP Embedded (German/English)																	
	Storage medium of the operating system	Without (hard disk installation)																	0
		Compact Flash 2 GB																	6
		Compact Flash 4 GB																	7
		Compact Flash 8 GB																	8
	Ordering code	Your solution:																4114	

Order data

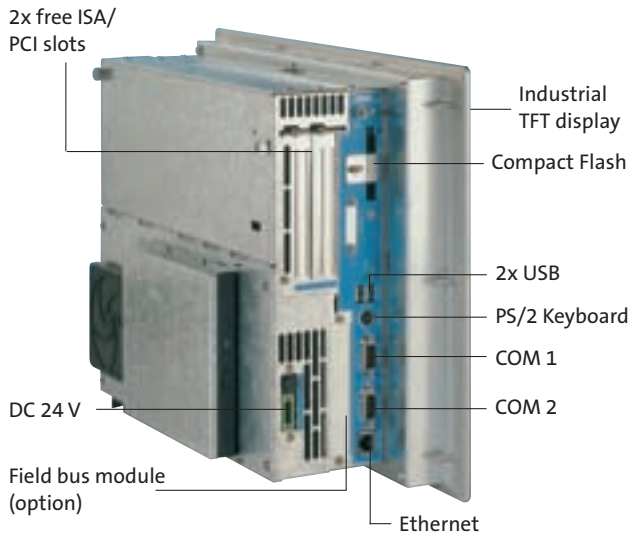
IPC series: Embedded Line EL 870 – 9700

Version: Windows® CE 5.0 Professional

			Orderung code													
	EL 870	„Touch“	8.0" TFT display with touch (640 x 480)	3400-	2				1	0					414	
	EL 1700		10.4" TFT display (640 x 480)	3401-					1	0					414	
	EL 1700s		10.4" TFT display (800 x 600)	3402-					1	0					414	
	EL 2700		12.1" TFT display (800 x 600)	3403-					1	0					414	
	EL 5700		15.0" TFT display (1.024 x 768)	3404-					1	0					414	
	EL 9700		19.0" TFT display (1.280 x 1.024) ¹⁾	3405-					1	0					414	
	EL 5720	„Touch plus F/S keys“	15.0" TFT display (1.024 x 768)	3406-					1	0					414	
	EL 1750	„Touch plus Num, Alpha, F keys“	10.4" TFT display (640 x 480)	3407-					1	0					414	
	EL 1750s		10.4" TFT display (800 x 600)	3408-					1	0					414	
	EL 2750		12.1" TFT display (800 x 600)	3409-					1	0					414	
	EL 5750		15.0" TFT display (1.024 x 768)	3410-					1	0					414	
	EL 5770	„Touch plus Num, Special, F keys and MF2“	15.0" TFT display (1.024 x 768)	3411-					1	0					414	
		- German layout		3412-					1	0					414	
		- English layout														
Front			Standard layout, non reflective glass screen	1												
			Standard layout, analog resistive touch screen	2												
			Front custom design	X												
USB socket			Without front side USB socket	0												
			Front side USB socket (IP65)	1												
Processors																
Fanless			AMD Geode LX800/ 500 MHz		L										2	
			Mobile Intel® Celeron M 600 MHz		8										1	
			Mobile Intel® Celeron M 1 GHz		9										1	
„Smart Cool“			AMD Geode LX800/ 500 MHz		G										2	
			Mobile Intel® Celeron M 600 MHz		H										1	
			Mobile Intel® Celeron M 1 GHz		K										1	
			Mobile Intel® Celeron M 1.5 GHz		D										1	
			Mobile Intel® Pentium M 1.8 GHz		E										1	
Active memory			256 MB		3											
			512 MB		4											
Communication interface			Without								0	0				
			MC-ETH Ethernet 100/ 1000 MBit, RJ45								1	1				
			MC-CAN2 Dual CAN Controller								9	9				
			MC-PBS Profibus Slave (+MPI)								6	6				
			MC-PND ProfiNet Device								8	8				
UPS			Without										0			
			ACU UPS control unit (please order external battery or capacitor pack separately, see page 3-46)										1			
Operating system			Windows® CE 5.0 Professional (English)													
Storage medium of the operating system			Compact Flash 128 MB												2	
			Compact Flash 256 MB												3	
			Compact Flash 512 MB												4	
Ordering code			Your solution:						1	0					414	

¹⁾ Not configurable with processor AMD Geode LX800.

Industrial PC series: Embedded Line EL 2200 - 9200 with ISA/PCI- and module slot (MOD-104)



Applications

- ▶ Industrial PC for control and visualisation
- ▶ Automation system for machines in the production process and visualisation
- ▶ Control operations in close proximity to machines, Web terminal: Web-based solutions via Internet Explorer (HTML, Java Virtual Machine), measurement data logging, etc.

System characteristics

Industrial TFT displays	12.1" - 19.0" with resistive touch/glass screen
Extendable by means of communication interface (MOD-104 module)	Field bus: ▶ IFC-MPI MPI adapter ▶ IFC-PB Profibus Master incl. Sycon ▶ IFC-PBS Profibus Slave ▶ IFC-COM CANopen Master incl. Sycon ▶ IFC-COS CANopen Slave ▶ IFC-PB/CAN Profibus Master with CAN node, incl. Sycon ▶ FC-CAN CAN node SJA 1000 ▶ FC-DUAL CAN CAN node SJA 1000 Interfaces: ▶ DISI industrial interface RS232, RS422, RS485, 20 mA (complete galvanic insulation) ▶ Ethernet module 10 Mbit BNC + RJ 45 ▶ PSI parallel/serial interfaces
Extendable by means of 2-off ISA/PCI slots	▶ 1 free combined slot for ISA or PCI ▶ 1 free PCI slot ▶ for card lengths up to 290 mm
Interfaces	1 x Ethernet 10/100 Mbit, 2 x USB 2.0 (max. 12 Mbit/s) on rear face, 1 x USB 2.0 (max. 12 Mbit/s) for front module (optional, can be switched off), 1 x PS/2 keyboard, 2 x serial interface RS232
Processors	ETX module, see page 3-4
Cooling	Filter fan with monitoring
Operating systems	▶ Microsoft® Windows® XP Multilanguage ▶ Microsoft® Windows® XP Embedded (XPe)
Mass storage	▶ Insertion slot for Compact Flash ▶ Hard disk (standard, extended temperature range, permanent operation) ▶ Option: DVD writer drive (on rear face)
Power supply	▶ DC 24 V ± 25 % ▶ Option: external 24 V UPS
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: front face IP65, rear face IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Relative humidity: 10 up to 90 % non condensing ▶ Maximum altitude: 3000 m above sea level

^{*)} Temperature range depends on the equipment

Order data

IPC series: Embedded Line EL 2200 - 9200

Version: Windows® XP Multilanguage

alternatively also without operating system

			Ordering code											
	EL 2200	„Touch“	3300-											
	EL 5200	12.1" TFT display (800 x 600)	3304-											
	EL 9200	15.0" TFT display (1.024 x 768)	3308-											
	EL 5220	„Touch plus F/S keys“	3305-											
		15.0" TFT display (1.024 x 768)												
	EL 2250	„Touch plus Num, Alpha, F keys“	3302-											
	EL 5250	12.1" TFT display (800 x 600)	3306-											
		15.0" TFT display (1.024 x 768)												
	EL 5270	„Touch plus Num, Special, F keys and MF2“	3307-											
		15.0" TFT display (1.024 x 768)	3309-											
		- German layout												
		- English layout												
Front		Standard layout, non-reflective glass screen	1											
		Standard layout, analog resistive touch screen	2											
		Front custom design	X											
USB socket		Without front side USB socket	0											
		Front side USB socket (IP65)	1											
Processors		Mobile Intel® Celeron M 600 MHz	8											
		Mobile Intel® Celeron M 1.5 GHz	D											
		Mobile Intel® Pentium M 1.8 GHz	E											
Active memory		512 MB	4											
		1024 MB	5											
Mass storage		Hard disk 60 GB 2.5"	2											
		Hard disk 40 GB 2.5", extended temperature range	3											
		Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h	4											
CD/DVD unit		Without	0											
		DVD writer drive (CD + DVD read/write)	3											
Communication interface (MOD-104 module)		Without	0											
		IFC-MPI MPI adapter	1											
		IFC-PB Profibus Master, incl. Sycon	2											
		IFC-PBS Profibus Slave	3											
		IFC-COM CANopen Master, incl. Sycon	4											
		IFC-COS CANopen Slave	5											
		IFC-PB/CAN Profibus Master with CAN node, incl. Sycon	6											
		FC-CAN CAN node SJA 1000, incl. driver	A											
		FC-DUAL CAN CAN node SJA 1000, incl. driver	B											
		DISI industrial interface RS232/ 422/ 485, 20 mA	D											
		Ethernet module 10 MBit BNC + RJ 45	E											
		PSI parallel/serial interfaces	F											
Operating system		Without	0000											
		Windows® XP Multilanguage	4100											
Ordering code		Your solution:	□□□□- □ □ □ □ □ □ □ □ □□□□											

Order data

IPC Serie: Embedded Line EL 2200 – 9200

Version: Windows® XP Embedded (XPe)

			Ordering code											
	Front module EL 2200 EL 5200 EL 9200	„Touch“ 12.1" TFT display (800 x 600) 15.0" TFT display (1.024 x 768) 19.0" TFT display (1.280 x 1.024)	3300- 3304- 3308-	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	EL 5220	„Touch plus F/S keys“ 15.0" TFT display (1.024 x 768)	3305-	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	EL 2250 EL 5250	„Touch plus Num, Alpha, F keys“ 12.1" TFT display (800 x 600) 15.0" TFT display (1.024 x 768)	3302- 3306-	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	EL 5270	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	3307- 3309-	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design	1 2 X											
	USB socket	Without front side USB socket Front side USB socket (IP65)	0 1											
	Processors	Mobile Intel® Celeron M 600 MHz Mobile Intel® Celeron M 1.5 GHz Mobile Intel® Pentium M 1.8 GHz	8 D E											
	Active memory	512 MB 1024 MB	4 5											
	Mass storage	Insertion slot for Compact Flash (standard) Hard disk 60 GB 2.5" Hard disk 40 GB 2.5", extended temperature range Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h	1 2 3 4											
	CD/DVD unit	Without DVD writer drive (CD + DVD read/write)	0 3											
	Communication interface (MOD-104 module)	Without IFC-MPI MPI adapter IFC-PB Profibus Master, incl. Sycon IFC-PBS Profibus Slave IFC-COM CANopen Master, incl. Sycon IFC-COS CANopen Slave IFC-PB/CAN Profibus Master with CAN node, incl. Sycon FC-CAN CAN node SJA 1000, incl. driver FC-DUAL CAN CAN node SJA 1000, incl. driver DISI industrial interface RS232/ 422/ 485, 20 mA Ethernet module 10 MBit BNC + RJ 45 PSI parallel/serial interfaces	0 1 2 3 4 5 6 A B D E F											
	► Betriebssystem	Windows® XP Embedded (German/English)												
	Storage medium of the operating system	Without (hard disk installation) Compact Flash 2 GB Compact Flash 4 GB Compact Flash 8 GB	0 6 7 8											
	Ordering code	Your solution:	□□□□-	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐



Industrial PC: AL 5000

with ATX main board, 1 x PCI-Express 4x and 5 x PCI slots



Applications

- ▶ Industrial PC for control and visualisation as a built-in device for control cabinets, machine casings, pedestal housings, etc.
- ▶ Industrial PC for measurement, control and regulation tasks, extendable up to 1 x PCI-Express 4x and 5 x PCI slots
- ▶ Image processing, quality control
- ▶ Industrial server

System characteristics

Industrial TFT displays	15" TFT with resistive touch screen
Graphics	max. 256 MB dynamically allocated memory
Extendable by means of PCI	Free slots: 1 x PCI-Express 4x, 5 x PCI, max. 210 mm card length
Interfaces	2 x Ethernet 10/100/1000 MBit, 8 x USB 2.0 on rear face, Audio AC97, PS/2 keyboard & mouse, 1 x serial interface RS232 (COM1), 1 x VGA Option 1 x USB for front module
Processors	ATX board, see page 3-4
Cooling	Active cooling
Operating systems	Microsoft® Windows® XP Multilanguage
Mass storage	▶ Hard disk 80 GB ▶ DVD writer drive (CD + DVD read/write), SATA
Power supply	▶ AC 115-230 V, 50-60 Hz, 300 W ▶ Option: UPS AC 115/230 V, 47-63 Hz, 350 W
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: front face IP65, rear face IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Filter fan for over-pressure ventilation with monitoring ▶ Relative humidity: 10 up to 90 % non condensing ▶ Maximum altitude: 3000 m above sea level
Dimensions	(H x W x D): 450 x 330 x 220 mm

^{*)} Temperature range depends on the equipment

Order data

IPC: AL 5000

			Ordering code									
	AL 5000 H	„Touch“ 15" TFT display (1.024 x 768)	3600-	☐	☐	☐	☐	☐	☐	3	☐	☐
	Front	Standard layout, analog resistive touch screen Front custom design		2	X							
	USB socket	Without front side USB socket Front side USB socket (IP65)		0	1							
	Processors	Mobile Intel® Celeron D 3.2 GHz Intel® Core™2 Duo 1.8 GHz Intel® Core™2 Duo 2.13 GHz		5	7	8						
	Active memory	1024 MB 2048 MB 4096 MB		7	8	9						
	Power supply	AC 115-230 V, 300 W PFC UPS AC 115/230 V integrated, 350 W incl. shutdown software and lead-gel batteries 2 x 12 V (external mounting)						1	2			
	▶ Operating system	Without Windows® XP Multilanguage									0000 4100	
Ordering code		Your solution:	3600-	☐	☐	☐	☐	☐	☐	3	☐	☐

Command Station

Description

The Command Station (CS) is a stand-alone operator station, which is totally protected (IP65) against dust and water spray incursion, in an attractive designer housing. The flat enclosure is machined from a solid aluminium block and is fitted with a stainless steel mounting frame at the rear edge, which is intended for support arm mounting or for direct fixing to a wall.

To allow the flexible implementation of individual operator concepts, the system offers numerous options and add-on operator consoles, including touch screens, functional and alphanumeric keyboards, operator consoles with switch elements and an emergency stop button or MF2 keyboards in a variety of different versions.

Solution

The Command Station is available as either a

- ▶ **Panel Industrial PC** with a low-power Pentium processor
 - ▶ **Thin Client**
- or a
- ▶ **DVI monitor Panel.**

Areas of use

An appealing housing, high-quality finish, flexible mounting possibilities and the easy implementation of customer-specific input concepts make the Command Station the ideal readily adaptable operator concept for a wide range of varied applications, e.g.

- ▶ Machine control
- ▶ IPC in production areas
- ▶ Process technology equipment in the chemical industry
- ▶ PDA applications
- ▶ CNC machine tools
- ▶ Airport, railway station, information terminals
- ▶ Building maintenance systems
- ▶ Control stations, information points, testing stations
- ▶ Access control systems

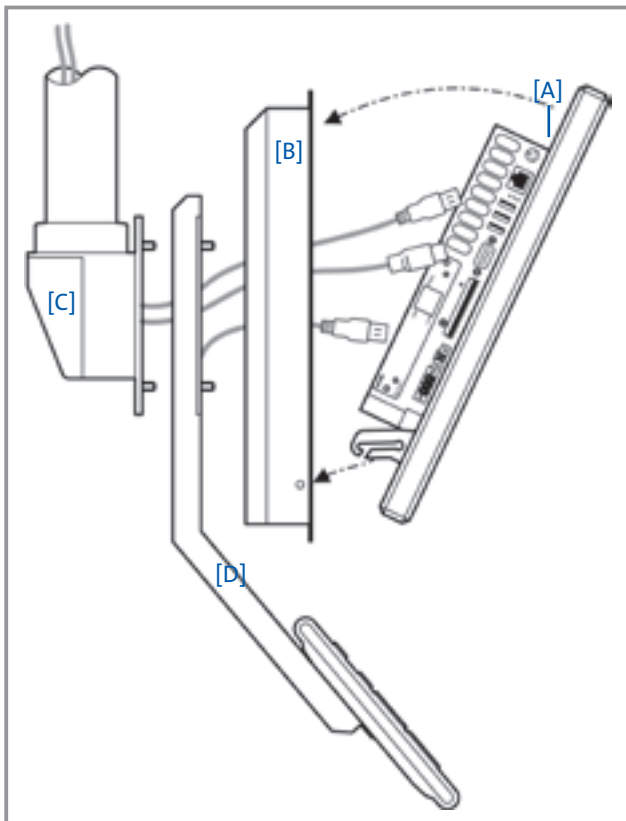


Front modules of the Command Station

Execution, range of controls, front dimensions and display data

Front modules	CS 5700 - CS 9700	Dimensions mm (W x H x D)	Diagonals	Brightness (cd/m²)	Resolution	MTBF (h)
	► Device designation					
Touch		Range of controls Front face 4 keys for system control: ► 3 programmable keys (F1-F3) ► „Service mode“ key for adjustment of display brightness to surroundings and for increased usable life of display (background illumination).				
	► CS 5700	466 x 335 x 68	15.0"	250	1.024 x 768	50.000
	► CS 9700	506 x 410 x 78	19.0"	300	1.280 x 1.024	50.000
Touch plus mounting field, 7 control elements and emergency stop		Range of controls (as above: version „Touch“) plus ► mounting field for 7 control elements (Ø 22.5mm) ► emergency stop				
	► CS 5710	466 x 430 x 78	15.0"	250	1.024 x 768	50.000
Touch plus Num, Alpha and F keys		Range of controls (Multiple allocation):: ► A...Z ► 0...9 ► F1...F12 ► Space ► Backspace ► Ctrl ► Alt ► Del ► Ins ► ESC ► TAB ► Home ► End ► PgUp ► PgDn ► Shift ► Enter ► level switch key Alpha ► symbols + - . , ; \ ► cursor keys ► print				
	► CS 5750	500 x 330 x 68	15.0"	250	1.024 x 768	50.000
Touch plus Num, Special, F keys and MF2		Range of controls (as above: version „Touch plus Num, Alpha, F keys“) plus ► MF2 control keypad, Layout: German or English				
	► CS 5770	499 x 410 x 78	15.0"	250	1.024 x 768	50.000

Modular assembly



[A] Front module

The combination of an insertable front module (in aluminium) with PC unit [A] and a fixed mounting frame (in stainless steel) [B] ensures easy mounting and cabling of the system and facilitates problem-free maintenance activities when servicing is required.

[B] Mounting frame

with optional cable connection entry points, located on the lower surface of the CS mounting frame

- ▶ Universal double cable entry point (KDL 2)
- ▶ USB socket with closure cap to IP 65
- ▶ Connection plate (customer-specific)

[C] Installation, Adapter

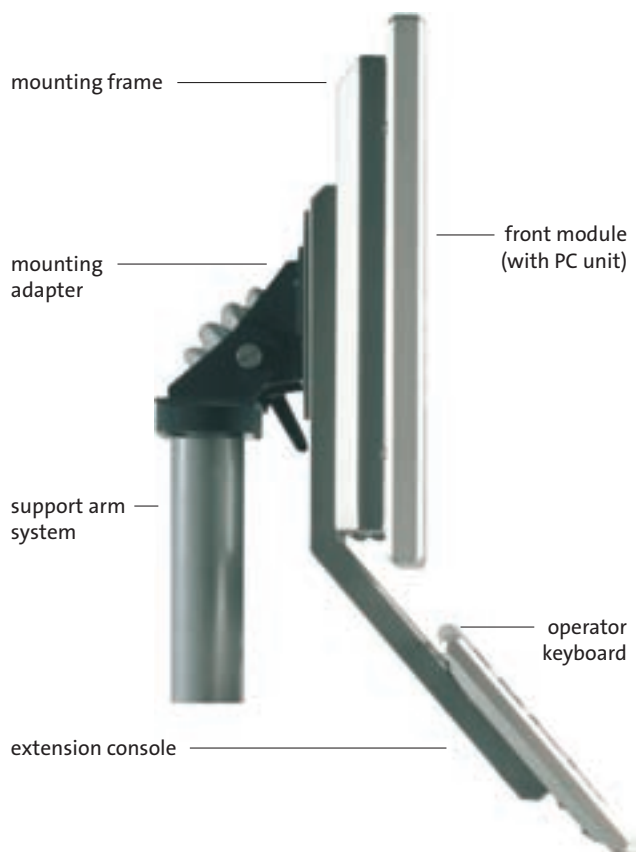
Suitable fixing adapters are available for various mounting arm systems.

- ▶ VESA adapter / wall mounting
- ▶ Support arm Rittal CP-L, CP-S and Accessories
- ▶ Customer-specific

[D] Extension console

made of stainless steel for the optional extension of additional keyboards and control elements.

- ▶ Extension elements see next page





Extension elements

Additional keyboards and control elements can easily be connected with the Command Station by means of an extension console

- ▶ MF2 keyboard in stainless steel (IP65)
- ▶ Universal switch box with 7 or 14 control elements and emergency stop
- ▶ Customer-specific versions

Universal switch box

CSB 7 or CSB 14

control console with 7 or 14 switch elements and emergency stop

- ▶ Switches can be labelled by means of exchangeable labels
- ▶ Switch level/lighting
 - CSB 7: for each switching element, 2 switching levels and lighting are possible
 - CSB 14: for each switching element, 1 switching level and lighting is possible
- ▶ Direct cabling into the CS enclosure

MF2 keyboard in stainless steel (IP65)

CSB MF2 E - MF2 stainless steel keyboard

MF2 keyboard with long-throw keys in stainless steel finish, protection category IP65

- ▶ USB interface
- ▶ Direct cabling into CS enclosure, internal

Order data

Extension elements			Ordering code	
	CSB 7	fully prepared for mounting of elements, without switch contacts and command elements, including extension console	6120	
		with customer-specific allocation of elements ^{*)}	on request	
	CSB 14	fully prepared for mounting of elements, without switch contacts and command elements, including extension console	6121	
		with customer-specific allocation of elements ^{*)}	on request	
	CSB MF2 E	MF2 keyboard stainless steel with NUM block (IP65) including extension console	6160-100	□□
		MF2 keyboard stainless steel with touch pad (IP65) including extension console	6160-300	□□
		MF2 keyboard stainless steel with track ball (IP65) including extension console	6160-400	□□
	Country version	German English French US Other version available on request		DE GB FR US
Ordering code		Your solution:	□□□□ / -□□□	□ □

^{*)} Configuration software for the individual assembly of CSB7 or CSB14 with switch elements (NC+NO), light signal, key switch, emergency stop available on request.

Industrial PC series: Command Station CS 5700 - 9700 IPC with PCI module card slot in completely enclosed housing (IP65)



Applications

- ▶ Attractive aluminium operator housing, protection category IP65, extendable operation consoles with command elements
- ▶ Industrial PC for control and visualisation
- ▶ Automation system for machines in the production process, visualisation, PLC and motion control on a single system
- ▶ Control operations in close proximity to machines, Web terminal: Applications under Windows® CE, measurement, control and regulation tasks

System characteristics

Industrial TFT displays	15.0" - 19.0" with resistive touch/glass screen
Extendable by means of communication interface	▶ MC-ETH Ethernet 100/ 1000 MBit, RJ45 ▶ MC-CAN2 Dual CAN Controller ▶ MC-ETC EtherCAT (Master) <i>(only in connection with L-force Logic & Motion)</i> ▶ MC-PBM, MC-PBS Profibus Master, Profibus Slave, MPI ▶ MC-PND ProfiNet Device (Slave)
Interfaces	1 x Ethernet 10/100 MBit, 3 x USB 2.0 on rear face, 1 x USB 2.0 for front module (optional, can be switched off), 1 x PS/2 mouse + keyboard (Combi), 1 x serial interface RS232
Processors	ETX module, see page 3-4
Operating systems	▶ Microsoft® Windows® XP Multilanguage ▶ Microsoft® Windows® XP Embedded (XPe) ▶ Microsoft® Windows® CE 5.0 Professional
Mass storage	▶ Insertion slot for Compact Flash ▶ Hard disk (standard, extended temperature range, permanent operation)
Power supply	▶ DC 24 V ± 25 % ▶ Option: Integrated UPS module for external battery or (super-CAPS) capacitor pack
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: IP65 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Relative humidity: 10 up to 90 % non condensing ▶ Maximum altitude: 3000 m above sea level

^{*)} Temperature range depends on the equipment

Order data

IPC series: Command Station CS 5700 – 9700

Version: Windows® XP Multilanguage

alternatively also without operating system

			Ordering code											
	CS 5700 IPC CS 9700 IPC	„Touch“ 15.0" TFT display (1.024 x 768) 19.0" TFT display (1.280 x 1.024)	6400- 6401-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5710 IPC	„Touch plus mounting field, 7 control elements and emergency stop“ 15.0" TFT display (1.024 x 768)	6402-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5750 IPC	„Touch plus Num, Alpha, F keys“ 15.0" TFT display (1.024 x 768)	6403-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5770 IPC	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	6404- 6405-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Front	Standard layout, non-reflective glass screen		1											
	Standard layout, analog resistive touch screen		2											
	Front custom design		X											
USB socket	Without front side USB socket		0											
	Front side USB socket (IP65)		1											
Mounting frame (below)	Without cable aperture		0											
	2-way universal cable aperture (KDL-2) ¹⁾		1											
	USB connection in mounting frame IP65		3											
	Customer-specific connection		X											
Fixing adapter	VESA 100		0											
	VESA adapter, closed		1											
	Rittal CP-L		2											
	Rittal CP-S SS		3											
	Customer-specific version		X											
Processors	Mobile Intel® Celeron M 600 MHz		8											
	Mobile Intel® Celeron M 1 GHz		9											
Active memory	512 MB		4											
	1024 MB		5											
Mass storage	Hard disk 60 GB 2.5" (for max. ambient temperature up to 40°)		2											
	Hard disk 40 GB 2.5", extended temperature range		3											
	Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h		4											
Communication interface	Without		0											
	MC-ETH	Ethernet 100/ 1000 MBit, RJ45	1											
	MC-PBM	Profibus Master	5											
	MC-PBS	Profibus Slave (+MPI)	6											
	MC-PND	ProfiNet Device	8											
UPS	Without		0											
	ACU UPS control unit (please order external battery pack separately, see page 3-46)		1											
Operating system	Without													
	Windows® XP Multilanguage													
Ordering code	Your solution:			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

¹⁾ Delivery includes 1 blind grommet. Depending upon cable diameter, it may be necessary to order additional grommets. (see page 3-47).

Order data

IPC series: Command Station CS 5700 – 9700

Version: Windows® XP Embedded (XPe)

			Ordering code													
	CS 5700 IPC	„Touch“ 15.0" TFT display (1.024 x 768)	6400-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	CS 9700 IPC	19.0" TFT display (1.280 x 1.024)	6401-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	CS 5710 IPC	„Touch plus mounting field, 7 control elements and emergency stop“ 15.0" TFT display (1.024 x 768)	6402-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	CS 5750 IPC	„Touch plus Num, Alpha, F keys“ 15.0" TFT display (1.024 x 768)	6403-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
	CS 5770 IPC	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	6404-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
			6405-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐
Front		Standard layout, non-reflective glass screen	1													
		Standard layout, analog resistive touch screen	2													
		Front custom design	X													
USB socket		Without front side USB socket	0													
		Front side USB socket (IP65)	1													
Mounting frame (below)		Without cable aperture	0													
		2-way universal cable aperture (KDL-2) ¹⁾	1													
		USB connection in mounting frame IP65	3													
		Customer-specific connection	X													
Fixing adapter		VESA 100	0													
		VESA adapter, closed	1													
		Rittal CP-L	2													
		Rittal CP-S SS	3													
		Customer-specific version	X													
Processors		Mobile Intel® Celeron M 600 MHz	8													
		Mobile Intel® Celeron M 1 GHz	9													
Arbeitsspeicher		512 MB	4													
		1024 MB	5													
Active memory		Insertion slot for Compact Flash (standard)	1													
		Hard disk 60 GB 2.5" (for max. ambient temperature up to 40°)	2													
		Hard disk 40 GB 2.5", extended temperature range	3													
		Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h	4													
Communication interface		Without	0													
		MC-ETH Ethernet 100/ 1000 MBit, RJ45	1													
		MC-PBM Profibus Master	5													
		MC-PBS Profibus Slave (+MPI)	6													
		MC-PND ProfiNet Device	8													
UPS		Without	0													
		ACU UPS control unit (please order external battery pack separately, see page 3-46)	1													
► Operating system		Windows® XP Embedded (German/English)														
Storage medium of the operating system		Without (hard disk installation)														0
		Compact Flash 2 GB														6
		Compact Flash 4 GB														7
		Compact Flash 8 GB														8
Ordering code	Your solution:			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	4114	☐

¹⁾ Delivery includes 1 blind grommet. Depending upon cable diameter, it may be necessary to order additional grommets. (see page 3-47).

Order data

IPC series: Command Station CS 5700 – 9700

Version: Windows® CE 5.0 Professional

			Ordering code																
	CS 5700 IPC CS 9700 IPC	„Touch“ 15.0" TFT display (1.024 x 768) 19.0" TFT display (1.280 x 1.024) ¹²	6400- 6401-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5710 IPC	„Touch plus mounting field, 7 control elements and emergency stop“ 15.0" TFT display (1.024 x 768)	6402-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5750 IPC	„Touch plus Num, Alpha, F keys“ 15.0" TFT display (1.024 x 768)	6403-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	CS 5770 IPC	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	6404- 6405-	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design	1 2 X																
	USB socket	Without front side USB socket Front side USB socket (IP65)	0 1																
	Mounting frame (below)	Without cable aperture 2-way universal cable aperture (KDL-2) ¹¹ USB connection in mounting frame IB65 Customer-specific connection	0 1 3 X																
	Fixing adapter	VESA 100 VESA adapter, closed Rittal CP-L Rittal CP-S SS Customer-specific version	0 1 2 3 X																
	Processors	AMD Geode LX800/500 MHz Mobile Intel® Celeron M 600 MHz Mobile Intel® Celeron M 1 GHz	L 8 9																2 1 1
	Active memory	256 MB 512 MB	3 4																
	Communication interface	Without MC-ETH Ethernet 100/ 1000 MBit, RJ45 MC-CAN2 Dual CAN Controller MC-PBS Profibus Slave (+MPI) MC-PND ProfiNet Device	0 1 9 6 8																
	UPS	Without ACU UPS control unit (please order external battery or capacitor pack separately, see page 3-46)	0 1																
	▶ Operating system	Windows® CE 5.0 Professional (English)																	
	Storage medium of the operating system	Compact Flash 128 MB Compact Flash 256 MB Compact Flash 512 MB																	
	Ordering code	Your solution:	□□□□- □ □ □ □ □ □ □ □ 1 □ □ □ 414□ □																

¹¹ Delivery includes 1 blind grommet. Depending upon cable diameter, it may be necessary to order additional grommets. (see page 3-47).

¹² Not configurable with processor AMD Geode LX800.

Control cabinet PC

Technology

Industrial PCs in the CPC series (control cabinet PCs) are intended for demanding, continuous deployment in industrial applications. Depending on the device series, the computers are based on different processor families:

► **CPC 2700, CPC 3200/ 3400**

ETX module with high performance low-power processors. Compact design and robust construction which does not require a cooling fan (CPC 2700).

► **CPC 5100, CPC 9100 (19")**

Intel® Pentium® and Core™2 Duo Processors on ATX main board with industrial design characteristics. We use without exception chip sets with long-term availability and CPUs from well-known manufacturers.

Equipment

CPC Industrial PCs, depending upon the model, are equipped with Ethernet, USB and serial RS232 interfaces as well as different extension slots.

The equipment options include various drives, memory equipment, etc., and also UPS (uninterruptible power supply). The CPC 2700 has available as an alternative a maintenance-free capacitor UPS (CAPS) for data retention (remanence), as well as for "shut down" the system in the case of a loss of power.

Installation

The CPC Industrial PCs are covered by protection category IP20, and they are in all cases intended for installation into a control cabinet or appropriate integrated housing. They should be fixed in place by boring screw holes into the relevant mounting plate in the control cabinet. The devices are provided with an earthing screw for central equalisation of potentials.



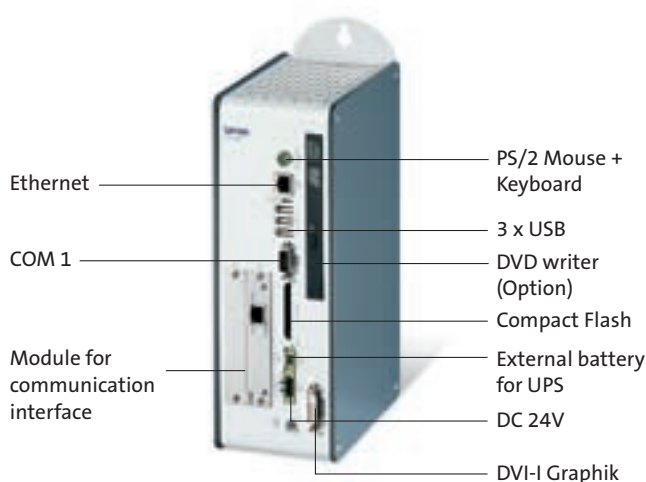
Overview - CPC Control cabinet systems

	CPC 2700	CPC 3200 CPC 3400	CPC 5100	CPC 9100
				
Form factor	ETX	ETX	ATX	ATX
Processor				
ETX LX-800 500 MHz Celeron M 600 MHz Celeron M 1 GHz Celeron M 1.5 GHz Pentium M 1.8 GHz Intel® Core™2 Duo 1.66 GHz	X ¹ X ¹ X ¹ X X X	X X X X		
ATX Celeron D 3.2 GHz Intel® Core™2 Duo 1.8 GHz Intel® Core™2 Duo 2.13 GHz			X X X	X X X
Power supply	DC 24 V ± 25 % Option: USV with external battery or CAPS	DC 24 V ± 25 % Option: external UPS	AC 115-230 V Option: UPS	AC 115-230 V Option: UPS
Drives				
Compact Flash (Typ II) Hard disk Hard disk extended temperature range (-20° up to 80°C) Hard disk permanent operation 24h exchange frame RAID 0/1 CD/DVD ROM (Slim Line) CD/DVD R/W (Slim Line) Mounting space available for 5 ¼" drive	Standard 1 x 2.5" Option Option Option Option	Standard 1 x 2.5" Option Option Option Option	1 or 2 x 2.5" Option Option Option Option	1 or 2 x 2.5" Option Option Option Option
Insertion slots	2 x PCI module card slot	1 x MOD-104 ¹² 1 x ISA / PCI 1 x PCI (CPC-3200) or 3 x PCI (CPC-3400)	1 x PCI-Express 4x, 5 x PCI	1 x PCI-Express 4x, 5 x PCI
Maximum slot card length	-	290 mm	290 mm	Full length (360 mm)
Interfaces	1 x Ethernet 3 x USB 1 x PS2 1 x RS232 1 x DVI-I	1 x Ethernet 2 x USB 1 x PS2 2 x RS232 1 x DVI-I	2 x Ethernet 8 x USB 2 x PS2 1 x RS232 1 x VGA/DVI	2 x Ethernet 8 x USB 2 x PS2 1 x RS232 1 x VGA/DVI

¹ Fanless device, depending on equipment and ambient temperature

¹² MOD 104: PC 104 similar module slot

Industrial PC: Control cabinet PC CPC 2700 with 2-way PCI module card slot



Applications

- ▶ Industrial PC for control and visualisation
- ▶ Automation system for machines in the production process, visualisation, PLC and motion control on a single system
- ▶ Industrial PC for decentralised operations and monitoring (PC protected in control cabinet, operation on site)

System characteristics

Housing / mounting	▶ Metal housing, system labelling on front face ▶ Vertical installation using keyhole mounting system
Extendable by means of communication interfaces	▶ MC-ETH Ethernet 100/ 1000 MBit, RJ45 ▶ MC-CAN2 Dual CAN Controller ▶ MC-ETC EtherCAT (Master) <i>(only in connection with L-force Logic & Motion)</i> ▶ MC-PBM, MC-PBS Profibus Master, Profibus Slave, MPI ▶ MC-PND ProfiNet Device (Slave)
Interfaces	1 x Ethernet 10/100 MBit, 3 x USB 2.0, 1 x PS/2 mouse + keyboard (Combi), 1 x serial interface RS232, 1 x DVI-I video interface
Processors	ETX module, see page 3-4
Cooling	▶ Passive via cooling radiators: LX800, Celeron M 600 MHz, Celeron M 1 GHz (max. 40°C) ▶ Smart Cool: Temperature-regulated cooling fan with double ball race and function monitoring
Operating systems	▶ Microsoft® Windows® XP Multilanguage ▶ Microsoft® Windows® XP Embedded (XPe) ▶ Microsoft® Windows® CE 5.0 Professional
Mass storage	▶ Insertion slot for Compact Flash ▶ Hard disk (standard, extended temperature range, permanent operation) ▶ Option: DVD writer drive (on rear face)
Power supply	▶ DC 24 V ± 25 % ▶ Option: Integrated UPS module for external battery or (super-CAPS) capacitor pack
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950, UL ▶ Protection category: IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Relative humidity: 10 up to 90 % non condensing
Dimensions	▶ Housing (H x W x D): 280 x 100 x 180 mm

^{*)} Temperature range depends on the equipment

Order data

IPC: CPC 2700

Version: Windows® XP Multilanguage
alternatively also without operating system

			Ordering code											
	CPC 2700	Control cabinet PC	1160-											
Processors														
Fanless														
„Smart Cool“														
Active memory														
Mass storage														
CD/DVD unit														
Communication interface														
UPS														
Operating system														
Ordering code														

Order data

IPC: CPC 2700

Version: Windows® XP Embedded (XPe)

			Ordering code									
	CPC 2700	Control cabinet PC	1160-	☐	☐	☐	☐	☐	☐	☐	4114	☐
	Processors											
	Fanless	Mobile Intel® Celeron M 600 MHz	8									
		Mobile Intel® Celeron M 1 GHz	9									
	„Smart Cool“	Mobile Intel® Celeron M 600 MHz	H									
		Mobile Intel® Celeron M 1 GHz	K									
		Mobile Intel® Celeron M 1.5 GHz	D									
		Mobile Intel® Pentium M 1.8 GHz	E									
	Active memory	512 MB	4									
		1024 MB	5									
	Mass storage	Insertion slot for Compact Flash (standard)	1									
		Hard disk 60 GB 2.5"	2									
		Hard disk 40 GB 2.5", extended temperature range	3									
		Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h	4									
	CD/DVD unit	Without						0				
		DVD writer drive (CD + DVD read/write)						3				
	Communication interface	Without						0	0			
		MC-ETH Ethernet 100/ 1000 MBit, RJ45						1	1			
		MC-PBM Profibus Master						5	5			
		MC-PBS Profibus Slave (+MPI)						6	6			
		MC-PND ProfiNet Device						8	8			
	UPS	Without								0		
		ACU UPS control unit (please order external battery pack separately, see page 3-46)								1		
	Operating system	Windows® XP Embedded (German/English)										
	Storage medium of the operating system	Without (hard disk installation)									0	
		Compact Flash 2 GB									6	
		Compact Flash 4 GB									7	
		Compact Flash 8 GB									8	
Ordering code			Your solution:	1160-	☐	☐	☐	☐	☐	☐	4114	☐

Order data

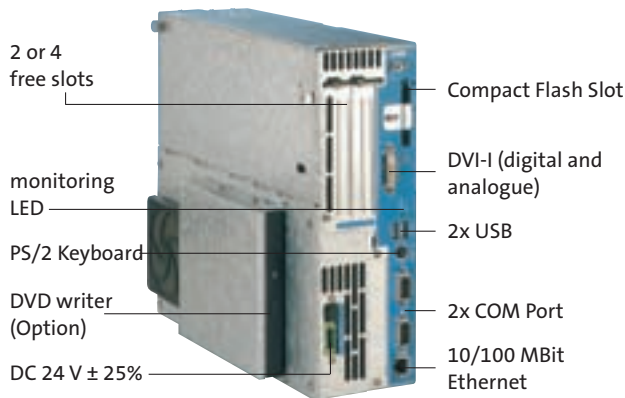
IPC: CPC 2700

Version: Windows® CE 5.0 Professional

			Ordering code											
	CPC 2700	Control cabinet PC	1160-	☐	☐	1	0	☐	☐	☐	☐	414	☐	
	Processors													
	Fanless	AMD Geode LX800/ 500 MHz ¹⁾	L										2	
		Mobile Intel® Celeron M 600 MHz	8										1	
		Mobile Intel® Celeron M 1 GHz	9										1	
	„Smart Cool“	AMD Geode LX800/ 500 MHz ¹⁾	G										2	
		Mobile Intel® Celeron M 600 MHz	H										1	
	Mobile Intel® Celeron M 1 GHz	K										1		
	Mobile Intel® Celeron M 1.5 GHz	D										1		
	Mobile Intel® Pentium M 1.8 GHz	E										1		
Active memory	256 MB		3											
	512 MB		4											
Communication interface	Without								0	0				
	MC-ETH Ethernet 100/ 1000 MBit, RJ45								1	1				
	MC-CAN2 Dual CAN Controller								9	9				
	MC-PBS Profibus Slave (+MPI)								6	6				
	MC-PND ProfiNet Device								8	8				
UPS	Without										0			
	ACU UPS control unit (please order external battery or capacitor pack separately, see page 3-46)										1			
▶ Operating system	Windows® CE 5.0 Professional (English)													
Storage medium of the operating system	Compact Flash 128 MB												2	
	Compact Flash 256 MB												3	
	Compact Flash 512 MB												4	
Ordering code	Your solution:	1160-	☐	☐	1	0	☐	☐	☐	☐	414	☐		

¹⁾ max. resolution XGA (1024 x 768)

Industrial PC: Control cabinet PC CPC 3200/3400 with ISA/PCI- and module slot (MOD-104)



Applications

- ▶ Industrial PC for control and visualisation
- ▶ Automation system for machines in the production process and visualisation
- ▶ Industrial PC for decentralised operations and monitoring (PC protected in control cabinet, operation on site)
- ▶ Industrial PC for measurement and adjustment tasks, image processing, control computer with slot PLC, etc.

Device types

- ▶ CPC 3200 with 2 free slots
- ▶ CPC 3400 with 4 free slots

System characteristics

Housing / mounting	▶ Housing galvanically zinc coated sheet steel, polyester foil front face with system labelling ▶ Vertical installation using keyhole mounting system
Extendable by means of communication interface (MOD-104 Module)	Field bus: ▶ IFC-MPI MPI adapter ▶ IFC-PB Profibus Master incl. Sycon ▶ IFC-PBS Profibus Slave ▶ IFC-COM CANopen Master incl. Sycon ▶ IFC-COS CANopen Slave ▶ IFC-PB/CAN Profibus Master with CAN node, incl. Sycon ▶ FC-CAN CAN node SJA 1000 ▶ FC-DUAL CAN CAN node SJA 1000 Interfaces: ▶ DISI industrial interface RS232, RS422, RS485, 20 mA (complete galvanic insulation) ▶ Ethernet module 10 MBit BNC + RJ 45 ▶ PSI parallel/serial interfaces
ISA / PCI slots	▶ CPC 3200: 1 x ISA/ PCI slot, max. 290 mm, 1 x PCI slot, max. 290 mm card length ▶ CPC 3400: 1 x ISA/ PCI slot, max. 290 mm, 3 x PCI slot, max. 290 mm card length
Interfaces	1 x Ethernet 10/100 Mbit, 2 x USB 2.0 (max. 12 Mbit/s), 1 x PS/2 keyboard, 2 x serial interface RS232, 1 x DVI-I video interface
Processors	ETX module, see page 3-4
Cooling	Filter fan with monitoring
Operating systems	▶ Microsoft® Windows® XP Multilanguage ▶ Microsoft® Windows® XP Embedded (XPe)
Mass storage	▶ Insertion slot for Compact Flash (standard) ▶ Hard disk (standard, extended temperature range, permanent operation) ▶ Option: DVD writer drive (on rear face)
Power supply	▶ DC 24 V ± 25 % ▶ Option: external 24 V UPS, DIN rail mounting
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Relative humidity: 10 up to 90 % non condensing
Dimensions	▶ CPC 3200: Housing (H x W x D): 267 x 100 x 298 mm ▶ CPC 3400: Housing (H x W x D): 267 x 144 x 298 mm

^{*)} Temperature range depends on the equipment

Order data

IPC: CPC 3200/3400

Version: Windows® XP Multilanguage

alternatively also without operating system

			Ordering code									
	CPC 3200	Control cabinet PC (2 Slot)	1150-	☐	☐	☐	☐	☐	☐	☐	1	☐ ☐ ☐ ☐
	CPC 3400	Control cabinet PC (4 Slot)	1151-	☐	☐	☐	☐	☐	☐	☐	1	☐ ☐ ☐ ☐
Mounting				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Processors				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Active memory				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Mass storage				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
CD/DVD unit				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Communication interface (MOD-104 module)				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Operating system				☐	☐	☐	☐	☐	☐	☐		
				☐	☐	☐	☐	☐	☐	☐		
Ordering code			Your solution:	☐ ☐ ☐ ☐	☐	☐	☐	☐	☐	☐	1	☐ ☐ ☐ ☐

Order data

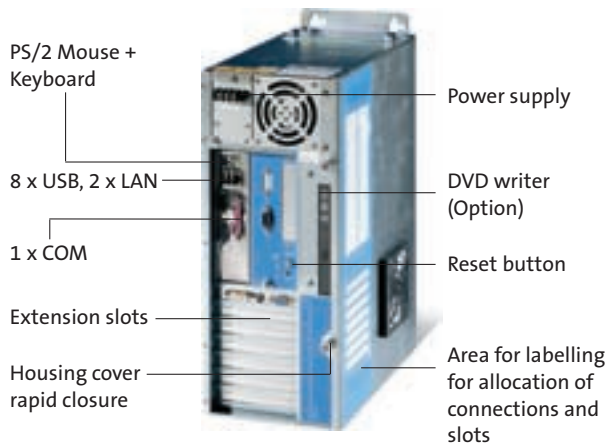
IPC: CPC 3200/3400

Version: Windows® XP Embedded (XPe)

			Ordering code									
	CPC 3200	Control cabinet PC (2 Slot)	1150-	☐	☐	☐	☐	☐	☐	1	4114	☐
	CPC 3400	Control cabinet PC (4 Slot)	1151-	☐	☐	☐	☐	☐	☐	1	4114	☐
Mounting												
Wall mounting, front end fixture												
Wall mounting, side fixture												
Processors												
Mobile Intel® Celeron M 600 MHz												
Mobile Intel® Celeron M 1.5 GHz												
Mobile Intel® Pentium M 1.8 GHz												
Active memory												
512 MB												
1024 MB												
Mass storage												
Without												
Hard disk 60 GB 2.5"												
Hard disk 40 GB 2.5", extended temperature range												
Hard disk 40 GB 2.5", 24/7 for permanent operation 24 h												
CD/DVD unit												
Without												
DVD writer drive (CD + DVD read/write)												
Communication interface (MOD-104 module)												
Without												
IFC-MPI MPI adapter												
IFC-PB Profibus Master incl. Sycon												
IFC-PBS Profibus Slave												
IFC-COM CANopen Master incl. Sycon												
IFC-COS CANopen Slave												
IFC-PB/CAN Profibus Master with CAN node, incl. Sycon												
FC-CAN CAN node SJA 1000, incl. driver												
FC-DUAL CAN CAN node SJA 1000, incl. driver												
DISI industrial interface RS232/ 422/ 485, 20 mA												
Ethernet module 10 MBit BNC + RJ 45												
PSI parallel/serial interfaces												
Operating system												
Windows® XP Embedded (German/English)												
Storage medium of the operating system												
Without (hard disk installation)												
Compact Flash 2 GB												
Compact Flash 4 GB												
Compact Flash 8 GB												
Ordering code												
Your solution:												



Industrial PC: Control cabinet PC CPC 5100 with ATX main board, 1 x PCI-Express 4x and 5 x PCI slots



Illustrations shows system without extension

Applications

- ▶ Industrial PC for control and visualisation (remote operation unit)
- ▶ Industrial PC for measurement and regulation tasks, image processing, control computer with slot PLC, etc.
- ▶ Industrial PC for high computing performance and comprehensive interfaces and extension slots
- ▶ Industrial server

System characteristics

Housing / mounting	▶ Chromed sheet steel housing with very good EMC shielding ▶ Vertical installation using keyhole mounting system
Chassis components	▶ Filter fan with rotation speed monitoring for over-pressure ventilation ▶ Card retention fitting ▶ All connections and operational elements accessible on front face ▶ Status LED for monitoring power, hard disk
Graphics	max. 256 MB dynamically allocated memory
Extendable by means of PCI	Free slots: 1 x PCI-Express 4x, 5 x PCI, max. 210 mm card length
Interfaces	2 x Ethernet 10/100/1000 MBit, 8 x USB 2.0, Audio AC97, PS/2 keyboard & mouse, 1 x serial interface RS232 (COM1), 1 x VGA/DVI
Processors	ATX board, see page 3-4
Cooling	Active cooling
Operating systems	Microsoft® Windows® XP Multilanguage
Mass storage	▶ Hard disk: SATA 80 GB optionally 1 or 2 pieces, RAID 0/1 functionality installable by software ▶ Option: internal exchange frame ▶ Option: DVD ROM or DVD writer drive (CD + DVD read/write), SATA
Power supply	▶ AC 115-230 V, 50-60 Hz, 300 W ▶ Option: UPS AC 115/230 V, 47-63 Hz, 350 W
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: IP20 ▶ Temperature range: 0 up to 45°C operating *), -10 up to 60°C storage ▶ Filter fan for over-pressure ventilation with monitoring ▶ Relative humidity: 10 up to 90 % non condensing
Dimensions	▶ Housing (H x W x D): 408 x 186 x 328 mm

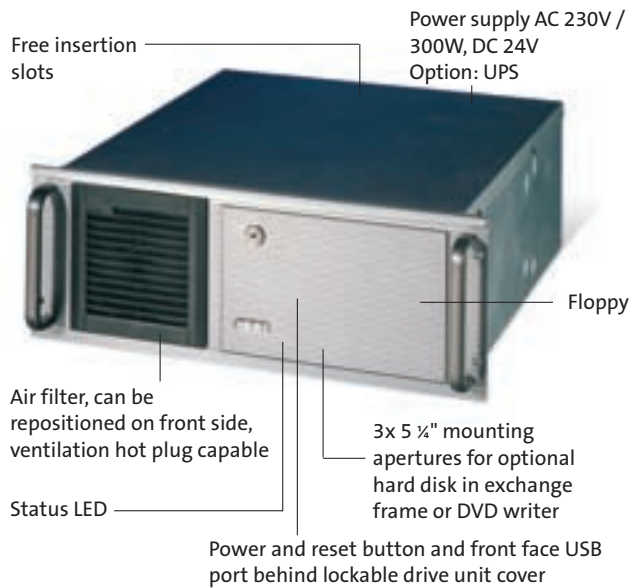
*) Temperature range depends on the equipment

Order data

IPC: CPC 5100

			Ordering code							
	CPC 5100	Control cabinet PC, graphics on board	1170-	☐	☐	1	☐	☐	☐	☐
	Processors	Mobile Intel® Celeron D 3.2 GHz Intel® Core™2 Duo 1.8 GHz Intel® Core™2 Duo 2.13 GHz	5 7 8							
	Active memory	1024 MB 2048 MB 4096 MB	7 8 9							
	Mass storage Mounting	Hard disk 1 x 2.5", fixed mounted Hard disk 2 x 2.5", fixed mounted Hard disk 2 x 2.5" inside the exchange frame				1 2 4				
	Power supply	AC 115-230 V, 300 W PFC UPS AC 115/230 V integrated, 350 W including shutdown software and lead-gel batteries 2 x 12 V					1 2			
	CD/DVD	Without DVD-ROM DVD writer drive (CD + DVD read/write), SATA						0 1 3		
	▶ Operating system	Without Windows® XP Multilanguage							0000 4100	
Ordering code		Your solution:	1170-	☐	☐	1	☐	☐	☐	☐

Industrial PC: Control cabinet PC CPC 9100 with ATX main board



Applications

- ▶ Industrial PC for control and visualisation (remote operation unit)
- ▶ Industrial PC for measurement and regulation tasks, image processing, control computer with slot PLC, etc.
- ▶ Industrial PC for high computing performance and comprehensive interfaces and extension slots
- ▶ Industrial server

System characteristics

Housing / mounting	▶ 19" / 4 HE full insertion, front with carrying handles, sheet steel housing with high EMC resistance
Chassis components	▶ Card retention fitting to retain PC insertion cards ▶ Power / reset key and 2 x USB connection on front face behind lockable drive cover ▶ Status LED on front face for monitoring power, hard disk
Graphics	max. 256 MB dynamically allocated memory
Extendable by means of PCI	Free slots: 1 x PCI-Express 4x, 5 x PCI, max. 210 mm card length
Interfaces	2 x Ethernet 10/100/1000 MBit, 8 x USB 2.0 on rear face, Audio AC97, PS/2 keyboard & mouse, 1 x serial interface RS232 (COM1), 1 x VGA/DVI, 2 x USB behind drive cover
Processors	ATX board, see page 3-4
Cooling	Active cooling
Operating systems	Microsoft® Windows® XP Multilanguage
Mass storage	▶ Hard disk: SATA 80 GB optionally 1 or 2 pieces, RAID 0/1 functionality installable by software ▶ Option: internal exchange frame ▶ Option: DVD writer drive (CD + DVD read/write), SATA
Power supply	▶ AC 115-230 V, 50-60 Hz, 300 W ▶ Option: UPS AC 115/230 V, 47-63 Hz, 350 W
General technical data	▶ EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ▶ Safety: VDE 0805, EN 60950 ▶ Protection category: IP20 ▶ Temperature range: 0 up to 45°C operating ^{*)}, -10 up to 60°C storage ▶ Filter fan for over-pressure ventilation with monitoring ▶ Relative humidity: 10 up to 90 % non condensing
Dimensions	▶ (H x W x D): 172 x 430 x 445 mm

^{*)} Temperature range depends on the equipment

Order data

IPC: CPC 9100

			Ordering code									
	CPC 9100	Control cabinet PC, graphics on Board	1180-	☐	☐	1	☐	☐	☐	☐	☐	☐
	Processors	Mobile Intel® Celeron D 3.2 GHz Intel® Core™2 Duo 1.8 GHz Intel® Core™2 Duo 2.13 GHz	5 7 8									
	Active memory	1024 MB 2048 MB 4096 MB	7 8 9									
	Mass storage Mounting	Hard disk 1 x 2.5", fixed mounted Hard disk 2 x 2.5", fixed mounted Hard disk 2 x 2.5" inside the exchange frame					1 2 4					
	Power supply	AC 115-230 V, 300 W PFC UPS AC 115/230 V integrated, 350 W including shutdown software and lead-gel batteries 2 x 12 V						1 2				
	CD/DVD	Without DVD writer drive (CD + DVD read/write), SATA							0 3			
	▶ Operating system	Without Windows® XP Multilanguage									0000 4100	
	Ordering code	Your solution:	1180-	☐	☐	1	☐	☐	☐	☐	☐	☐

Thin Client Panel

Industrial PC in the form of a Thin Client terminal, offering remote operation via a network multi-operation concept for plants which are distributed over a wide area



The Thin Client terminal can be used for the imaging and operation of applications on a remotely located host computer via a network connection. The Microsoft® RDP (Remote Desktop Protocol) is used for data transmission.

The host computer is provided by a Windows® XP system for a single operator location or a Windows® server operating system for multiple operator locations.

All processes are executed on the linked server, the Thin Client being responsible only for the graphic display or the entry systems for operation of the application. The computing performance of the Client can thus be restricted to an appropriately low level.

Thin Client panels are available as both built-in version and stand-alone terminals.

System characteristics

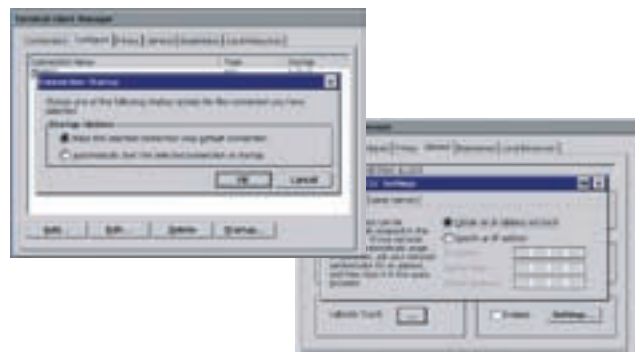
Design	Built-in version: Embedded Line EL 870-9700 TC	Stand-alone Terminal: Command Station CS 5700-9700 TC
Industrial TFT displays	8.0" – 19.0" with resistive touch/glass screen	15.0" – 19.0" with resistive touch/glass screen
Front face configuration	see page 3-7	see page 3-19
Interfaces	3 x USB 2.0, 1 x USB 2.0 front face, Ethernet10/100MB, RS232 (COM), PS/2 mouse + keyboard (Combi), DC 24 V	
Processors	ETX module, see page 3-4	
Operating systems	► Integrated Thin Client software Windows® CE on Compact Flash module Thin Client connection manager	
Power supply	DC 24 V ± 25 %	
Device function	RDP 5.1 Client, „Connection manager“ and Compact Flash included in scope of delivered item	
General technical data	► EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ► Safety: VDE 0805, EN 60950, UL ► Protection category: front face IP65, rear face IP20 ► Temperature range: 0 up to 45°C operating ¹⁾ -10°C to 60° storage ► Relative humidity: 10 up to 90 % non condensing ► Maximum altitude: 3000 m above sea level	► EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ► Safety: VDE 0805, EN 60950 ► Protection category: IP65 ► Temperature range: 0° up to 45°C operating ¹⁾ -10°C up to 60° storage ► Relative humidity: 10 up to 90 % non condensing ► Maximum altitude: 3000 m above sea level

¹⁾ Temperature range depends on the equipment

Thin Client Connection manager

The user interface of the Terminal Client provides the „Terminal Client Manager“ for the purpose of configuration, which allows all the necessary settings to be undertaken. The configuration covers the description of the connection to the desired server and the selected programs.

The Thin Client is delivered in a preconfigured form. All hardware-specific settings, e.g. resolution of screen image, depth of color or touch screen calibration, are preset in our premises.



Order data

Thin Client panel in the form of a built-in version „*Embedded Line*“

			Ordering data			
	EL 870 TC	„Touch“ 8.0" TFT display with touch screen (640 x 480)	3430-	2	☐	☐
	EL 1700 TC	10.4" TFT display (640 x 480)	3431-		☐	☐
	EL 1700s TC	10.4" TFT display (800 x 600)	3432-		☐	☐
	EL 2700 TC	12.1" TFT display (800 x 600)	3433-		☐	☐
	EL 5700 TC	15.0" TFT display (1.024 x 768)	3434-		☐	☐
	EL 9700 TC	19.0" TFT display (1.280 x 1.024)	3435-		☐	☐
	EL 5720 TC	„Touch plus F/S keys“ 15.0" TFT display (1.024 x 768)	3436-		☐	☐
	EL 1750 TC	„Touch plus Num, Alpha, F keys“ 10.4" TFT display (640 x 480)	3437-		☐	☐
	EL 1750s TC	10.4" TFT display (800 x 600)	3438-		☐	☐
	EL 2750 TC	12.1" TFT display (800 x 600)	3439-		☐	☐
	EL 5750 TC	15.0" TFT display (1.024 x 768)	3440-		☐	☐
	EL 5770 TC	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	3441- 3442-		☐	☐
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design		1 2 X		
	USB socket	Without front side USB socket Front side USB socket (IP65) *)1		0 1		
	Processors	AMD Geode LX800/ 500 MHz *)2 Mobile Intel® Celeron M 600 MHz				L 8
Ordering code			Your solution: □□□□- □ □ □ □			

Thin Client panel in the form of a stand-alone terminal „*Command Station*“

			Ordering data			
	CS 5700 TC	„Touch“ 15.0" TFT display (1.024 x 768)	6430-	☐	☐	☐
	CS 9700 TC	19.0" TFT display (1.280 x 1.024)	6431-	☐	☐	☐
	CS 5710 TC	„Touch plus mounting field, 7 control elements and emergency stop“ 15.0" TFT display (1.024 x 768)	6432-	☐	☐	☐
	CS 5750 TC	„Touch plus Num, Alpha, F keys“ 15.0" TFT display (1.024 x 768)	6433-	☐	☐	☐
	CS 5770 TC	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	6434- 6435-	☐	☐	☐
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design		1 2 X		
	USB socket	Without front side USB socket Front side USB socket (IP65) *)1		0 1		
	Mounting frame (below)	Without cable aperture 2-way universal cable aperture (KDL-2) *)3 USB connection in mounting frame IP65 Customer-specific connection		0 1 3 X		
	Fixing adapter	VESA 100 VESA adapter, closed Rittal CP-L Rittal CP-S SS Customer-specific version		0 1 2 3 X		
	Processors	AMD Geode LX800/ 500 MHz *)2 Mobile Intel® Celeron M 600 MHz				L 8
Ordering code			Your solution: □□□□- □ □ □ □			

*)1 The software-based switch-off function of the USB socket is not supported

*)2 Not for EL/CS 9700 TC

*)3 Scope of delivery includes 1 blind grommet

Monitor Panel

Display unit for decentralised IPC solutions (operator unit separated from PC)

Built-in version



Stand-alone terminal

Monitor Panel

► Operator terminal for remote industrial PC as built-in version or stand-alone terminal

- Touch screen or keyboard operation
- Digital DVI video interface

System characteristics

Design	Built-in version: Embedded Line MP 800-9000 DVI	Stand-alone Terminal: Command Station CS 5000-9000 DVI
Industrial TFT displays	8.0" – 19.0" with resistive touch/glass screen	15.0" – 19.0" with resistive touch/glass screen
Front face configuration	see page 3-7	see page 3-19
Power supply	► DC 24 V ± 25 %	DC 24 V ± 25 %
General technical data	► EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ► Safety: VDE 0805, EN 60950, UL ► Protection category: front face IP65, rear face IP20 ► Temperature range: 0 up to 45°C operating ¹⁾ -10°C up to 60° storage ► Relative humidity: 10 up to 90 % non condensing ► Maximum altitude: 3000 m above sea level	► EMC compatibility: CE, EN 50082 (IEC 1000-2,-3,-4), EN 50081, EN 55022 ► Safety: VDE 0805, EN 60950 ► Protection category: IP65 ► Temperature range: 0° up to 45°C operating ¹⁾ -10°C up to 60° storage ► Relative humidity: 10 up to 90 % non condensing ► Maximum altitude: 3000 m above sea level

¹⁾ Temperature range depends on the equipment

Transmission systems

DVI version	► Interfaces: DVI-D Video connection (digital only) USB up-link port (connection to PC) Integrated USB hub: 2 x USB down-link port (rear face) ► Cable lengths: - MP 800-9000 DVI Standard: 2 m DVI/USB included in the standard delivery - Optional: 5 m DVI/USB passive, max. 35 m DVI/USB active with DVI/USB-Extender ¹⁾ - CS 5000-9000 DVI Standard: 5 m DVI/USB passive, max. 35 m DVI/USB active with DVI/USB-Extender ¹⁾
APL version (VGA analog)	on request

¹⁾ transmission distance at resolution SXGA (1280 x 1024) max. 25 m

Order data

Monitor Panel in the form of a built-in version „MP DVI“

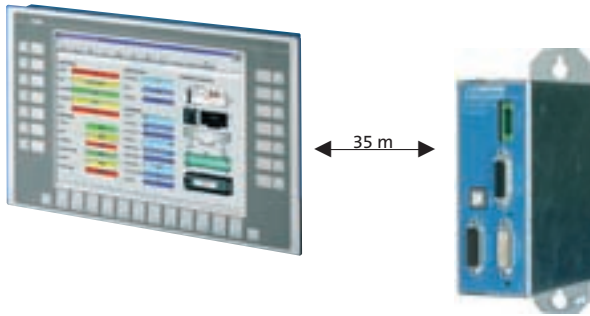
			Ordering code			
   	MP 800 DVI	„Touch“ 8.0" TFT display with touch screen (640 x 480)	5213-	2	☐	1
	MP 1000 DVI	10.4" TFT display (640 x 480)	5201-	☐	☐	1
	MP 1000s DVI	10.4" TFT display (800 x 600)	5202-	☐	☐	1
	MP 2000 DVI	12.1" TFT display (800 x 600)	5203-	☐	☐	1
	MP 5000 DVI	15.0" TFT display (1.024 x 768)	5204-	☐	☐	1
	MP 9000 DVI	19.0" TFT display (1.280 x 1.024)	5205-	☐	☐	1
	MP 5020 DVI	„Touch plus F/S keys“ 15.0" TFT display (1.024 x 768)	5206-	☐	☐	1
	MP 1050 DVI	„Touch plus Num, Alpha, F keys“ 10.4" TFT display (640 x 480)	5207-	☐	☐	1
	MP 1050s DVI	10.4" TFT display (800 x 600)	5208-	☐	☐	1
	MP 2050 DVI	12.1" TFT display (800 x 600)	5209-	☐	☐	1
	MP 5050 DVI	15.0" TFT display (1.024 x 768)	5210-	☐	☐	1
	MP 5070 DVI	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	5211- 5212-	☐ ☐	☐ ☐	1 1
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design		1 2 X		
	USB socket	Without front side USB socket Front side USB socket (IP65)		0 1		
Ordering code			Your solution: □□□□- □ □ □ 1			

Monitor Panel in the form of a stand-alone terminal „Command Station DVI“

			Ordering code			
 	CS 5000 DVI	„Touch“ 15.0" TFT display (1.024 x 768)	6300-	☐	☐	☐
	CS 9000 DVI	19.0" TFT display (1.280 x 1.024)	6301-	☐	☐	☐
	CS 5010 DVI	„Touch plus mounting field, 7 control elements and emergency stop“ 15.0" TFT display (1.024 x 768)	6302-	☐	☐	☐
	CS 5050 DVI	„Touch plus Num, Alpha, F keys“ 15.0" TFT display (1.024 x 768)	6303-	☐	☐	☐
	CS 5070 DVI	„Touch plus Num, Special, F keys and MF2“ 15.0" TFT display (1.024 x 768) - German layout - English layout	6304- 6305-	☐ ☐	☐ ☐	☐ ☐
	Front	Standard layout, non-reflective glass screen Standard layout, analog resistive touch screen Front custom design		1 2 X		
	USB socket	Without front side USB socket Front side USB socket (IP65)		0 1		
	Mounting frame (below)	Without cable aperture 2-way universal cable aperture (KDL-2) *) USB connection in mounting frame IP65 Customer-specific connection		0 1 3 X		
	Fixing adapter	VESA 100 VESA adapter, closed Rittal CP-L Rittal CP-S SS Customer-specific version				0 1 2 3 X
Ordering code			Your solution: □□□□- □ □ □ □			

*) Scope of delivery includes 1 blind grommet

DVI/USB extender



Transmission

The DVI/USB extender makes it possible to extend the distance between the switch enclosure PC and the control panel up to a maximum of 35 m for the requirements of remote operating concepts. All signals – digital real-time image information or inputs from USB peripherals, mouse and keyboard – are transmitted via a TwinLAN cable (2 x CAT-7). In addition, the power supply for the panel (DC 24 V) is provided by means of this cable connection.

- ▶ Transmission of DVI and USB (1.1) signals
- ▶ Transmission distance: max. 35 m (XGA 1.024 x 768) or max. 25 m (SXGA 1.280 x 1.024) plus in each case max. 5 m from PC to TX module
- ▶ Transmission of power supply ^{*)1}
- ▶ Simple installation: plug and play, no software driver required
- ▶ Simple mounting: TX module on mounting plate, RX module can be attached on the rear face of the monitor panel.

System elements

The system consists of a TX module, which is mounted in the proximity of the PC, and of an RX module, which can be attached directly on the rear face of the monitor panel.

▶ Transmitter:

for switch enclosure mounting via keyhole fixing system
 Dimensions: 52 x 140 x 114 mm (W x H x D)
 Mounting surface: 52 x 190 mm (W x H)
 Power supply: DC 24 V
 Enclosed cable for connection to PC 2 m (max. 5 m)

▶ Receiver:

Dimensions: 185 x 100 x 28 mm (W x H x D)
 Power supply: via transmitter
 provision: of 24 V for monitor ^{*)1}
 Connection cable: 0.4 m

Item / Description:	Ordering code
DVI/USB extender: Transmitter and receiver unit	4022-9
Transmission cable: TwinLAN 10 m	4990-6946
TwinLAN 15 m	4990-6947
TwinLAN 20 m	4990-6948
TwinLAN 25 m	4990-6949
TwinLAN 30 m ^{*)2}	4990-6950
TwinLAN 35 m ^{*)2}	4990-6902

^{*)1} Not for MP/CS 9000 DVI

^{*)2} Only up to XGA resolution 1.024 x 768

Simple mounting on the rear wall of the monitor



► click into position



► screw in place



► finished

Accessories

► for Embedded Line PC, Command Station and Control cabinet PC

Item / Description		Ordering code
	Industrial Compact Flash	Compact Flash Card 128 MB
		Compact Flash Card 256 MB
		Compact Flash Card 512 MB
		Compact Flash Card 1 GB
		Compact Flash Card 2 GB
		Compact Flash Card 4 GB
		Compact Flash Card 8 GB
	power supply unit	power supply unit 100-240 AC/24 DC/5 Single-phase, primary clock speed power supply, IP20 Incoming voltage range 85-264V AC / 45-65 Hz Nominal output voltage 24V DC $\pm 1\%$ Nominal values -25°C up to +40°C: 7.5A (Uout = 24V DC) -25°C up to +60°C: 5.0A (Uout = 24V DC) Dimensions (w x h x d) 55 x 130 x 125 Ambient temperature Operation: -25 °C to +70 °C (> +60 °C derating) Storage: -40 °C to +85 °C Humidity up to 95 % at +25 °C, non-condensing Vibration, according to <15 Hz, amplitude ± 2.5 mm/ IEC 68-2-6 15 Hz-150 Hz, 2.3 g, 90 min. Schock, according to 30g all spatial directions IEC 68-2-27
	USB for DIN rail	USV DC 24 V / 100 W External UPS for DIN rail mounting, max. 100 W load Driver software for Windows® 9x, NT, 2000, XP Connection via serial interface, connection cable 1.8 m

► UPS accessories for Panel PC EL-870, 17xx, 27xx, 57xx, 9700, CS 57xx, 97xx, Control cabinet PC CPC 2700

Item / Description		Ordering code
	Battery pack for ACU USV	► Application: Computer shutdown for Windows® XP ► Description: External battery pack for control cabinet mounting, connection cable 2.5 m, usable with ACU internal UPS control unit, buffer time approx. 3 - 10 min (depending on computer equipment).
	Capacitor pack (CAPS) for ACU USV	► Application: Data remanence for L-force Logic & Motion control system as well as Windows® CE (Not suitable for Windows® XP applications!) ► Description: CAPS capacitor pack for ACU internal UPS control unit, connection cable approx. 2.5 m, buffer time approx. 5 - 20 s
	Extension cable	10 m, e. g. for Command Station

► for Embedded Line and Control cabinet PC with PCI slots

Item / Description:		Ordering code
	Field bus controller	
	PROFIBUS-PB Master CIF 50 PCI Bus	4990-5099
	INTERBUS-S Master CIF 50 PCI Bus	4990-5098
	CANopen Master CIF 50 PCI Bus	4990-5100
	Device-Net Master CIF 50 PCI Bus	4990-5101

► for Command Station

Item / Description:		Ordering code
	Cable apertures	
	Accessories for KDL-2: The equipment variant „KDL-2“, a 2-way universal cable aperture, is supplied as standard with a blind grommet. The second aperture grommet, which is available to accommodate various different cable diameters, must be ordered separately.	
	Cable aperture blind grommet	4990-8070
	Cable aperture grommet 3.0 up to 4.0 mm	4990-8065
	Cable aperture grommet 4.0 up to 5.0 mm	4990-8066
	Cable aperture grommet 5.0 up to 6.0 mm	4990-8067
	Cable aperture grommet 6.0 up to 7.0 mm	4990-8068
	Cable aperture grommet 7.0 up to 8.0 mm	4990-8069
	Support arm adapter	
	CP-L connection console (Rittal # CP6508.010)	4010-6508010
	Swivel arm connection console (Rittal # IW6902.670)	4010-6902670
	CP-S stainless steel frame attachment (Rittal # CP6664.000)	4990-6664000

► Freely configurable software keyboard

Item / Description:		Ordering code
	Software keyboard	
	SoftKey virtual software keyboard for touch system Alternative entry tool - German - US When using a touch screen, it is possible to replace a real keyboard by means of a software keyboard. Customer-specific variants are available on request.	4020-DT 4020-US

