

Pricing & Selection Guide
Configuration Guide

Programmable Logic Controllers

K200
CS31
T200

AC 1100

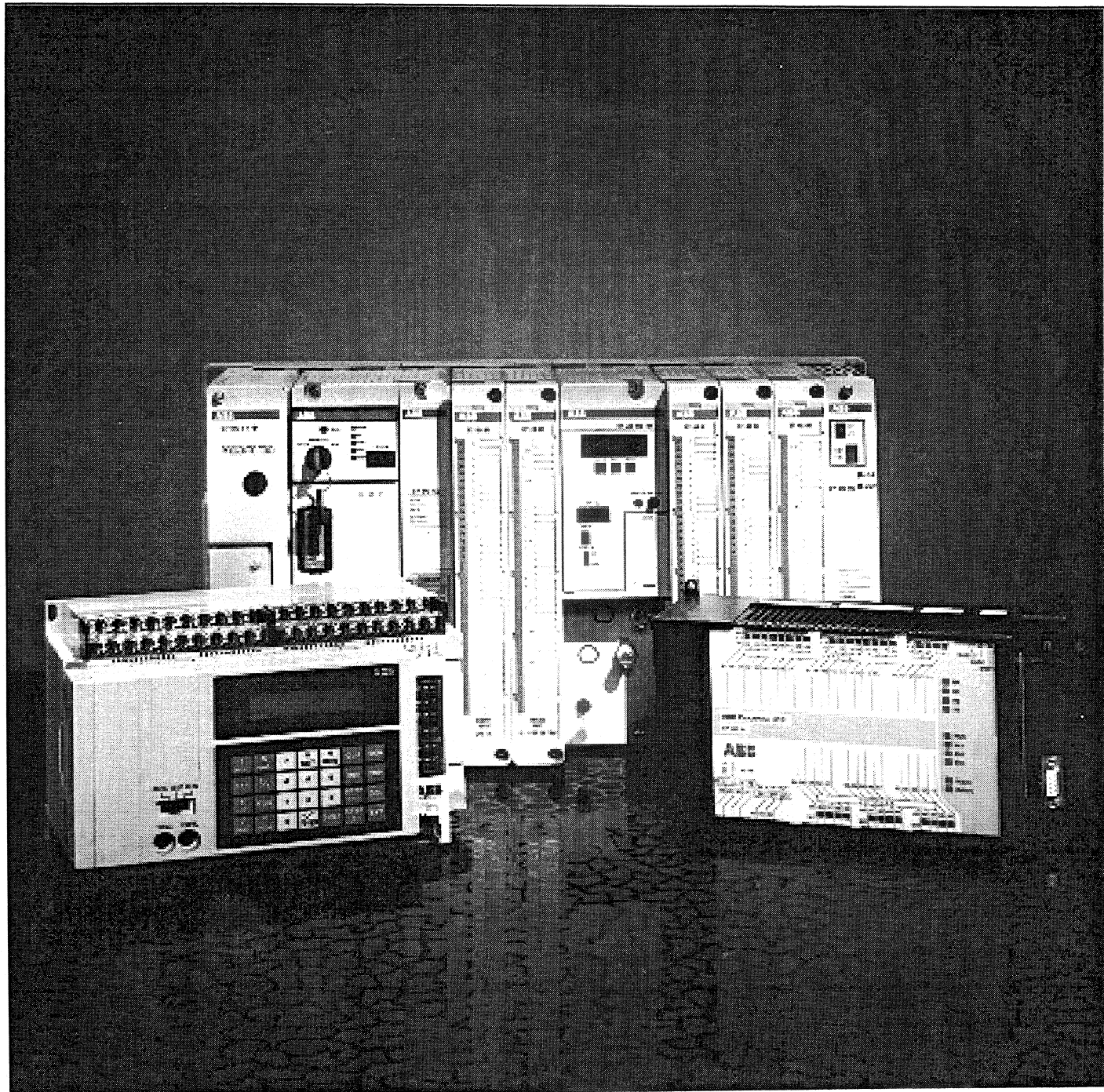
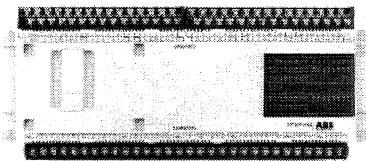


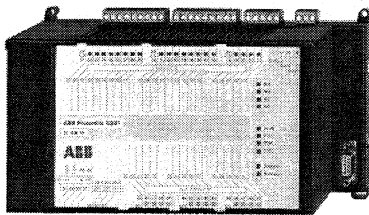
ABB Control Inc.

ABB

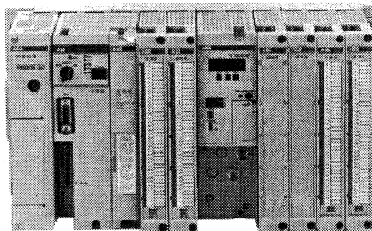
Programmable Logic Controllers



K200 COMPACT CONTROLLER



CS31 DECENTRALIZED CONTROLLER



T200 MODULAR CONTROLLER

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This catalog is published for information purposes only and is not all inclusive. For additional information on products or technical information, consult ABB Control Inc. The installation and use of ABB Control Inc. products should be in accordance with the provisions of the U.S. National Electrical Code and/or other local codes or industry standards that are pertinent to the particular end use. Installation or use not in accordance with these codes and standards could be hazardous to personnel and/or equipment.

ABB Procontic Systems

An ABB Procontic control system may include the following:

- Programmable Logic Controller
- Operator Interface
- Software
- Communications

ABB Procontic is a modular control system. As a member of the control system, each module has been developed and manufactured using advanced design principles and production methods.

ABB provides families of products that are designed to work together as a system and offer you a broad range of products to choose from. The individual products that make up the ABB Procontic are described in this catalog.

Programmable Logic Controllers

ABB offers a complete family of Programmable Logic Controllers (PLC) to achieve your automation needs. The ABB family of controllers consists of K200, CS31, and T200 series. The PLC's from ABB offer a wide range of products from 20 to 3896 binary (discrete) input/output points, in either compact or rack-mount configurations.

Operator Interface

ABB offers a variety of products that are designed to interface the operator with the application. These products include; operating stations for message display, industrial CRT's for panel display, process graphic module for a video interface, portable laptop for programming/testing, and industrial support computers that are IBM PC/AT compatible.

Software

When using the ABB PLC system, you can choose to write the application program in either instruction list, (IL), function block diagram (FBD) with ladder logic (LD), or a mix of both IL and FBD.

Instruction list arranges line-by-line the address, PLC command, absolute variable, symbolic reference, and your comments just like writing a sentence. PLC commands for IL use ASCII characters such as; '&', '/', '+', '-' for 'and', 'or', 'add', 'subtract'. Function block diagrams with ladder logic is a graphic and intuitive language developed for the plant floor.

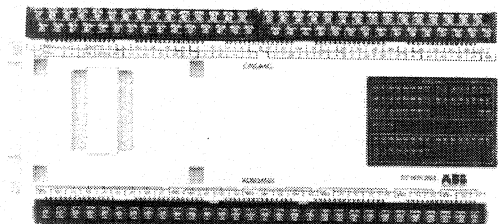
ABB Procontic Programmable System provides a common user interface to the complete family of Programmable Logic Controllers. The software supports both off-line and on-line programming, documentation, and pulldown menus.

Communications

ABB offers a variety of networking options that are designed for the industrial environment. The ZB10 field bus lets you interconnect ABB PLC's including the Procontic b series, T200 series, T300 series. ZB20 field bus is a T200 family communications network supporting up to 64 controllers using COAX, or fiber-optic media. Industry standard communications network is available with ZB50, the ABB field bus that meets PROFIBUS requirements.

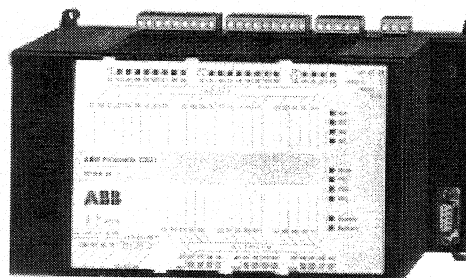
The K200 Compact Controller

A compact controller with basic I/O configurations and I/O modules up to 128 I/O maximum.



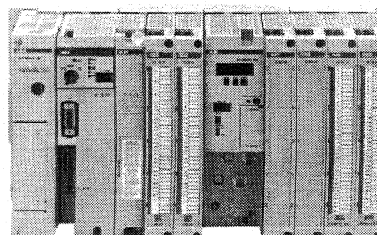
The CS31 Decentralized Controller

A remote controller with up to 496 I/O.















The T200 Modular Controller

A modular controller with up to 3,648 I/O.

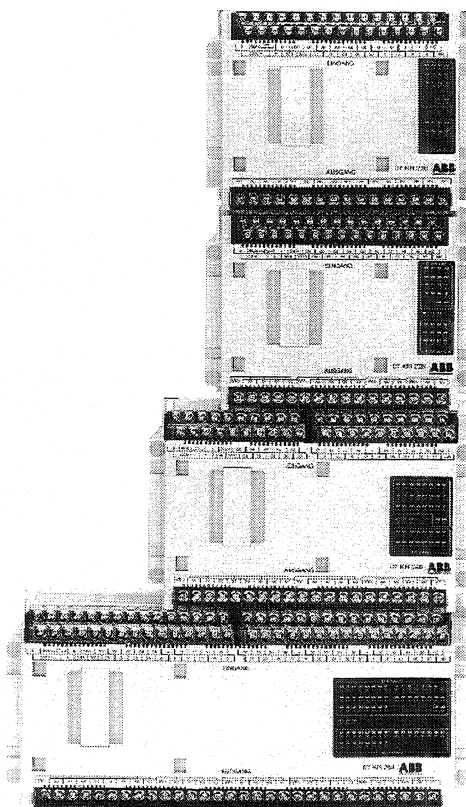


Selection Guide

ABB Procontic Systems

CPU	PROGRAM MEMORY (SIZE, TYPE)	CYCLE TIME FOR 1K BINARY INSTRUCTIONS	NUMBER OF TIMERS	NUMBER OF COUNTERS	INTEGRAL I/O	NUMBER OF BINARY I/O	NUMBER OF ANALOG I/O	I/O RACKS	BUS CONNECTION	CERTIFICATE
07KR220	1K EPROM, 2K with expansion EEPROM	5 ms	40	32	20	84	4	x	x	 UL & CSA  German Lloyd  Lloyd's Register of Shipping  Bureau Veritas
07KR228	1K EPROM, 2K with expansion EEPROM				28	92	4	x	x	
07KR240	1K EPROM, 2K with expansion EEPROM				40	104	4	x	x	
07KR264	1K EPROM, 2K with expansion EEPROM				64	128	4	x	x	
07KR31	2K EEPROM, non-expandable	6.0 ms	any number via the software	any number via the software	20		192	x	system bus CS31	 UL & CSA  German Lloyd  Lloyd's Register of Shipping  Bureau Veritas
07KR91	7K RAM Flash EPROM, non-expandable	1.8 ms, 2.9 ms typical	any number via the software	any number via the software	32	496	192	x	system bus CS31	
07KT92	7K RAM Flash EPROM, non-expandable	1.8 ms, 2.9 ms typical	any number via the software	any number via the software	25	496	197	x	system bus CS31	
UCZA	8K EEPROM, non-expandable	2.5 ms, 80 ms typical	60	16	x	1984	256	x	system bus CS31	
PCZB	2K EEPROM, non-expandable	3 ms, 30 ms typical	16	16	20	516	128	x	system bus CS31	
CS20	2K EEPROM, non-expandable	3 ms, 30 ms typical additional bus cycle time	16	16	20	20	-	x	-	
07ZE60	0, 7.6K RAM/EPROM expandable	2.5 ms, 12 ms typical	256	256	x	256	64	0 local, 40 remote	ZB10, ZB20, ZB50	 UL & CSA  German Lloyd  Lloyd's Register of Shipping  Bureau Veritas
07ZE61	0, 15.7 RAM/EPROM expandable	2.5 ms, 12 ms typical	256	256	x	576	144	1 local, 40 remote	ZB10, ZB20, ZB50	
07ZE62	0, 48.5K RAM/EPROM expandable	1.7 ms, 6.8 ms typical	256	256	x	1856 *	256	5 local, 40 remote	ZB10, ZB20, ZB50	
07ZE63	0, 15.7K RAM/EPROM expandable	2.5 ms, 12 ms typical	256	256	x	1856 *	256	5 local, 40 remote	ZB10, ZB20, ZB50 ZB20 also with fiber optic	

The Compact Controller K200



Today programmable logic controllers are so reasonably priced that their application in the field of modern automation technology is called on for even the smallest tasks.

The compact controller system ABB K200 is available in four basic configurations, each with expansion capability. Often 20 inputs/outputs are adequate for simple applications that can be filled with Model 07KR220. At the upper end of the K200 family is the model with 64 inputs/outputs. Through the use of different expansion modules the system may be expanded to a maximum of 128 inputs/outputs with 07EA264 expander.

Features:

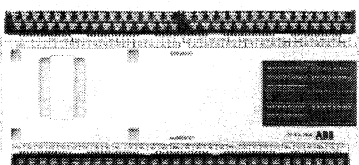
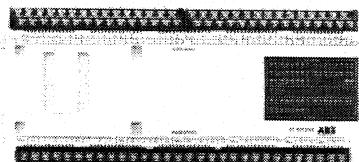
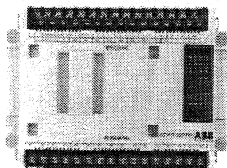
- Bit processing
- Analog value processing
- Storage
- Timers
- Counting
- Basic math functions (+, -, x, ÷) BCD

Special function blocks are available:

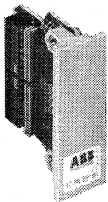
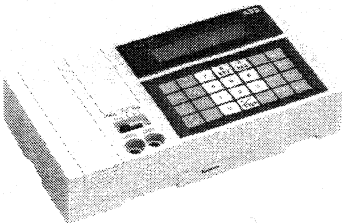
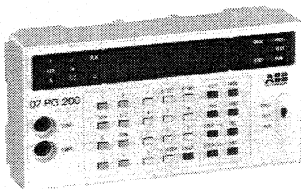
- Shift register (16 bits)
- Memory with dynamic inputs
- Branch instructions

Characteristics:

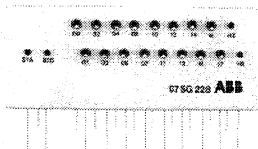
- Simple, space saving systems in compact structure.
- Basic controller configurations are available from 20 to 64 I/O.
- Different input/output expansion modules (compact units or modules) allow the controller to be expanded.
Max. expansion 128 I/O = 80 inputs/48 outputs.
- Inputs are supplied by a built-in 24VDC/0.4A power supply unit.
- A 10kHz counter (4 decades) is an integral part of the system.
- Choice of hand-held terminals.



DESCRIPTION	CATALOG NUMBER	LIST PRICE
K200 Controllers		
20 I/O Fixed Style - 12 inputs 24VDC, 8 relay outputs, 220VAC power supply	07KR220R1	\$ 880
20 I/O Fixed Style - 12 inputs 220VAC, 8 relay outputs, 220VAC power supply	07KR220R2	1050
28 I/O Fixed Style - 16 inputs 24VDC, 12 relay outputs, 220VAC power supply	07KR228R1	1120
40 I/O Fixed Style - 24 inputs 24VDC, 16 relay outputs, 220VAC power supply	07KR240R1	1350
40 I/O Fixed Style - 24 inputs 24VDC, 16 relay outputs, 24VDC power supply	07KR240R2	1380
64 I/O Fixed Style - 40 inputs 24VDC, 24 relay outputs, 220VAC power supply	07KR264R1	1820
64 I/O Fixed Style - 40 inputs 24VDC, 24 relay outputs, 24VDC power supply	07KR264R2	1750
28 I/O Fixed Style - 16 inputs 24VDC, 12 outputs, Transistor 24VDC/0.5A, 220VAC power supply	07KT228R1	1380
40 I/O Fixed Style - 24 inputs 24VDC, 16 outputs, Transistor 24VDC/0.5 A, 220VAC power supply	07KT240R1	1660
Expansion module		
24 inputs 24VDC, 16 outputs, Transistor 24VDC/0.5A, 220VAC power supply	07EA240R2	1480
24 inputs 24VDC, 16 relay outputs, 24VDC power supply	07EA240R4	1420



DESCRIPTION	CATALOG NUMBER	LIST PRICE
40 inputs 24VDC, 24 relay outputs, 220VAC power supply	07EA264R1	\$ 1560
40 inputs 24VDC, 24 relay outputs, 24VDC power supply	07EA264R5	1490
Binary I/O expansion modules		
8 inputs, 24VDC 110/220VAC	07EB200R1 07EB205R1	230 330
8 relay outputs, 115/230VAC/2A	07AB200R1	240
8 transistor outputs, 24VDC/1A	07AB205R1	420
Analog I/O modules		
2 inputs 0...+10VDC, 4-20 mA, 8 bits	07EA200R1	600
2 outputs 0...+10VDC, 4-20 mA, 8 bits	07AA200R1	750
Programming		
Programming and test unit with a cassette connection	07PG200R1	680
Programming and test unit with a RS-232C interface and EPROM programming	07PG201R1	1380
Programming and test software for K200. IL, LD, FBD languages on 5 1/4 " and 3 1/2" disk for IBM PC/AT including documentation	907PC322R302	1410
Program memory		
EEPROM for the 2K user program	07PR201R1	240
EPROM for the 2K user program	07PR210R1	90



DESCRIPTION	CATALOG NUMBER	LIST PRICE
System cables		
Cable to connect 07PG201 and IBM PC/AT, 25 pin male D shell to 25 pin female D shell, Cable length: 6.5 feet (2m)	07SK202R2	\$ 110
Cable to connect 07PG201 and the printer, 25 pin female D shell to 25 pin male D shell, Cable length: 9.8 feet (3m)	07SK203R1	110
Cable to connect 07PG201 and the printer, 25 pin male D shell to 25 pin male D shell, Cable length: 9.8 feet (3m)	07SK203R2	110
Ribbon cable to connect K200 controller and expansion modules, Cable length: 1.9 feet (0.6m) Cable length: 4.9 feet (1.5m)	07SK200R1 07SK201R2	170 180
Accessories		
DIN rail adapter, 2 items required per unit	07HA200R1	40
Simulation unit for 07KR220, 07KR228, or 07KT228	07SG228R1	420
Simulation unit for 07KR240 and 07KT240	07SG240R1	450

	DESCRIPTION	CATALOG NUMBER	LIST PRICE
	Power Supply Power supply unit: 220VAC/24VDC, 2.5A 220VAC/24VDC, 5A 230VAC(Δ), 400VAC(Y)/24VDC, 10A 230VAC(Δ), 400VAC(Y)/24VDC, 20A	07NG32R1 07NG34R1 07NG35R1 07NG36R1	\$ 290 530 690 830
	Documentation ABB K200 Complete documentation in loose leaf binder. System description (Hardware) and operating manual for programming units (07PG200, 07PG201), System description (Software)	DOCK200	90

Configuration Worksheet

The following configuration guide is to help lead you through assembling a complete K200 system.

1. Determine the total number of I/O for the application, including analog.
2. Choose the processor that will best supply the amount of binary I/O to fulfill the application. If more binary I/O is needed, use an expansion module. If analog I/O is required, use the analog expansion modules. (Use configuration guide)
3. Using the worksheet on the following page, in the first column place the total quantity of each part number that you will need to fulfill the application. Use a separate sheet for each processor. Follow the guidelines set forth in item 4 for maximum binary I/O and analog I/O. Multiply the "number of I/O bits" by the quantity and place the total in the last column.
4. A maximum of 64 binary I/O may be added to a central unit. A maximum of two analog modules representing 32 bits each may be configured to a central unit. The total number of bits for the processor may not exceed 64 and the total number of bits for the expansion I/O may not exceed 64.
5. Include a hand-held unit, or if software for programming and testing of the central unit is used, both a hand-held unit and software will be needed. A cable to connect the hand-held unit to the IBM/AT must be purchased separately.
6. If an expansion module is used, an interface cable may be needed to connect the module to the central unit.

Configuration Worksheet

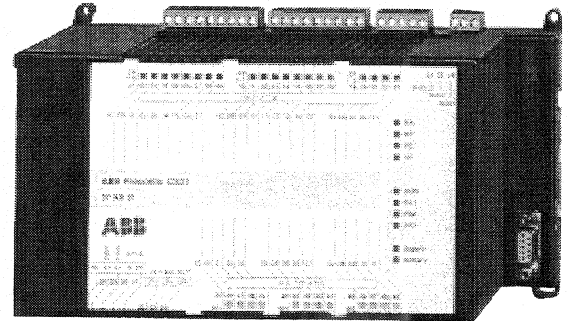
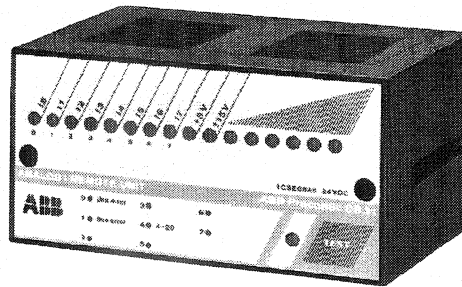
QTY	PART NUMBER	BINARY INPUTS	BINARY OUTPUTS	ANALOG INPUTS	ANALOG OUTPUTS	NUMBER OF I/O BITS	TOTAL BITS
	07KR220R1	12	8	—	—	20	
	07KR220R2	12	8	—	—	20	
	07KR228R1	16	12	—	—	28	
	07KR240R1	24	16	—	—	40	
	07KR240R2	24	16	—	—	40	
	07KR264R1	40	24	—	—	64	
	07KR264R2	40	24	—	—	64	
	07KR228R1	16	12	—	—	28	
	07KT240R1	24	16	—	—	64	
	07EA240R2	24	16	—	—	64	
	07EA240R4	24	16	—	—	64	
	07EA264R1	40	24	—	—	64	
	07EA264R5	40	24	—	—	64	
	07EB200R1	8	—	—	—	8	
	07EB205R1	8	—	—	—	8	
	07AB200R1	—	8	—	—	8	
	07AB205R1	—	8	—	—	8	
	07EA200R1	—	—	2	—	32	
	07AA200R1	—	—	—	2	32	

2.

Configuration Guide

CATALOG NUMBER	DESCRIPTION
Central Units	
07KR220R1	12 in/8 out, 220VAC power
07KR220R2	12 in/8 out, 220VAC power
07KR228R1	16 in/12 out, 220VAC power
07KR240R1	24 in/16 out, 220VAC power
07KR240R2	24 in/16 out, 24VDC power
07KR264R1	40 in/24 out, 220VAC power
07KR264R2	40 in/24 out, 24VDC power
07KT228R1	16 in/12 out, 220VAC power
07KT240R1	24 in/16 out, 220VAC power
Expansion Modules	
07EA240R2	24 inputs/16 outputs, 220VAC power
07EA240R4	24 inputs/16 outputs, 24VDC power
07EA264R1	40 inputs/24 outputs, 220VAC power
07EA264R5	40 inputs/24 outputs, 24VDC power
Binary I/O Modules	
07EB200R1	24VDC input module, 8 in
07EB205R1	110/220VAC input module, 8 in
07AB200R1	Relay output module, 8 in
07AB205R1	Transistor DC output module, 8 in
Analog I/O Modules	
07EA200R1	Analog module, 2 in, 24VDC power
07AA200R1	Analog module, 2 out, 24VDC power

CATALOG NUMBER	DESCRIPTION
Programming	
07PG200R1	Hand-held program unit
07PG201R1	Hand-held program unit
907PC322R302	Programming software for K200
Program Memories	
07PR201R1	2K EEPROM
07PR210R1	2K EEPROM
System Cables	
07SK202R2	Programming cable, 2m, RS-232C
07SK203R1	Print cable, 2m, RS-232C
07SK203R2	Print cable, 3m, RS-232C
07SK200R1	Expansion cable, 0.6m
07SK201R2	Interface cable, 1.5m
Accessories/Power Supplies	
07HA200R1	DIN rail adapter
07SG228R1	I/O simulator, small
07SG240R1	I/O simulator, large
07NG32R1	Power supply, 2.5A
07NG34R1	Power supply, 5A
07NG35R1	Power supply, 10A
07NG36R1	Power supply, 20A
Documentation	
DOCK200	K200 System description



The Decentralized Controller CS31

ABB CS31 is a modular designed programmable logic controller with decentralized architecture.

Today's control and monitoring systems work faster and are more powerful and more complex due to the increasing number of devices, which are controlled by the CPU; contactors, relays, circuit-breakers, transducers, pushbuttons, pilot lamps, intelligent preprocessors. Connecting these units requires an increased expenditure of wiring and labor. The ABB CS31 eliminates and reduces the expenditure of control wiring up to 80%.

The CS31 System Structure includes a small-sized CPU connected to remote modules via a system bus. Signal communication by the RS-485 system bus is automatic without any special programming.

Features:

- Compact I/O units
- Modular—easy expansion
- Decentralized Architecture
- Configurable I/O

Extensive built-in diagnosis:

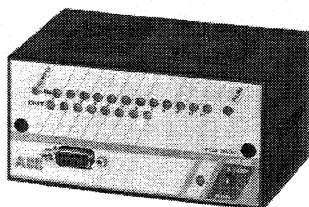
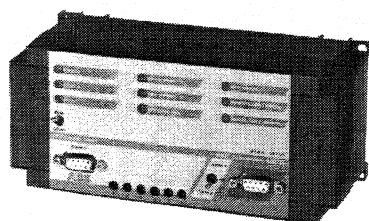
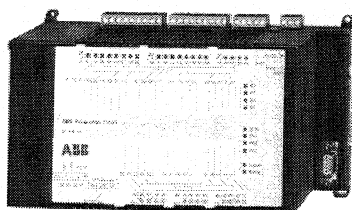
- Reliable detection of errors, both input and output signals
- Locate and display overloads and short-circuits
- All functions of the systems bus are monitored continuously.

Economical solution:

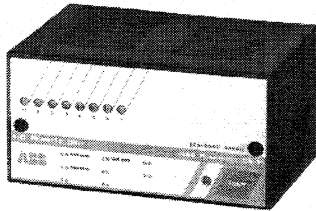
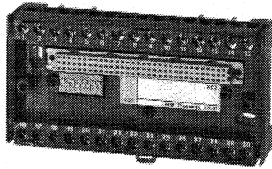
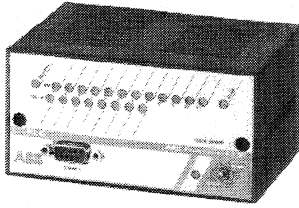
- Reduction of costs in planning and mounting

Characteristics:

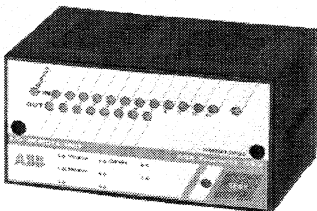
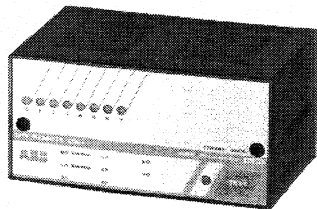
- Easily modified and expanded
- Remote I/O modules can be replaced without rewiring or stopping the process.
- The wiring terminals of the modules are mounted on a base for plugging in the modules.
- Low meantime to repair
- Simple connection to the next remote module
- Expand up to 31 remote I/O modules.



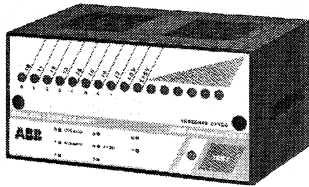
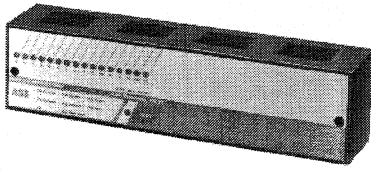
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Central Processing Unit		
Central processing unit with 2K of user memory, real time clock, 1 serial interface, interface to the system bus RS-485, 12 binary inputs @ 24VDC, 8 binary relay outputs rated for 220VAC/2A. Serial interface has Modbus slave protocol integrated.		
24VDC power supply	07KR31-24	730
220VAC power supply	07KR31-220	770
110VAC power supply	07KR31-110	770
Central unit with 7K words of user memory (RAM and FLASH EPROM), realtime clock, bit and word processing, 1 serial interface port, interface to the system bus RS-485, 20 binary inputs @ 24VDC, 1 configurable high speed counter, 10kHz, isolated, 12 binary relay outputs rated for 250V/2A		
24VDC power supply	07KR91-24	1430
220VAC power supply	07KR91-220	1260
Central unit with 7K words of user memory (RAM and Flash EPROM), realtime clock, bit and word processing, 2 serial interface ports, interface to the system bus RS-485, 12 binary inputs @ 24VDC, 1 configurable high speed counter, 10kHz, isolated, 4 analog inputs 0...+10VDC, 0-20mA, 12 bit resolution, non-isolated, 8 binary outputs, transistor, 24VDC/0.5A, isolated, short-circuit-proof, 1 analog output $\pm 10V$, resolution 12 bit, non-isolated		
24VDC power supply	07KT92-24	1710
Central unit with 8K (UCZA) or 16K (UCZB) words of user memory (EEPROM), realtime clock, bit and word processing, 2 serial interface ports, interface to the system bus RS-485		
24VDC power supply UCZA	UCZA-24	1420
220VAC power supply UCZA	UCZA-220	1560
24VDC power supply UCZB	UCZB-24	1840
220VAC power supply UCZB	UCZB-220	1980
Central unit with 2K words of user memory (EEPROM), realtime clock, bit and word processing, 1 serial interface port, interface to the system bus RS-485, 12 binary inputs @ 24VDC, isolated, against bus and 220VAC, input delay, which can be configured 5-45 ms, 8 binary relay outputs rated for 220VAC/2A		
24VDC power supply	PCZB-24	730
220VAC power supply	PCZB-220	770



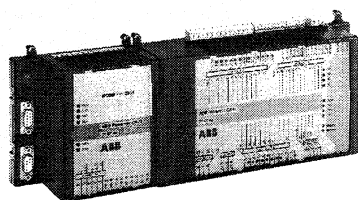
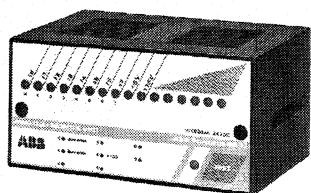
DESCRIPTION	CATALOG NUMBER	LIST PRICE
<p>Central unit without a system bus connection, 2K word user memory (EEPROM), realtime clock, bit processing, 1 serial interface, 12 binary inputs @ 24VDC, 1 configurable high speed counter, 10kHz, isolated, against bus and 220VAC, input delay, which can be configured 5-45 ms, 8 binary relay outputs rated for 220VAC/2A</p> <p>24VDC power supply 220VAC power supply</p>	<p>CS20-24 CS20-220</p>	<p>\$ 620 640</p>
<p>Module carriers</p> <p>Plug-in base for I/O modules, PCZB and CS20. Mounts on DIN rail or by means of screws.</p>	ECZ	100
<p>Binary input modules</p> <p>Input module, 8 inputs @ 24VDC, isolated against bus and 220VAC, input delay, which can be configured 2-32 ms</p> <p>24VDC power supply 220VAC power supply 110VAC power supply</p> <p>Input module, 8 inputs @ 24VDC, isolated, input delay, which can be configured 2-32 ms</p> <p>24VDC power supply 220VAC power supply 110VAC power supply</p> <p>Input module, 8 inputs @ 110VAC 110VAC power supply</p> <p>Input module, 8 inputs @ 220VAC 220VAC power supply</p> <p>Input module, 16 inputs @ 24VDC, isolated against bus and 220VAC, input delay, which can be configured 2-32 ms</p> <p>24VDC power supply 220VAC power supply 110VAC power supply</p>	<p>ICS108D1-24 ICS108D1-220 ICS108D1-110</p> <p>ICS108E1-24 ICS108E1-220 ICS108E1-110</p> <p>ICS108E3-110</p> <p>ICS108E4-220</p> <p>ICS16DI-24 ICS16DI-220 ICS16DI-110</p>	<p>340 370 370</p> <p>380 410 410</p> <p>470</p> <p>460</p> <p>410 440 440</p>



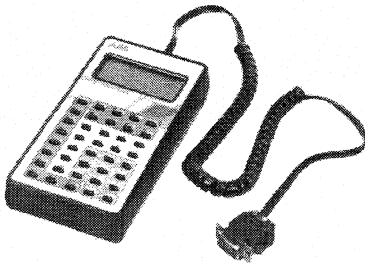
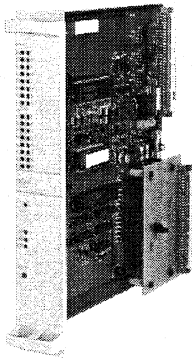
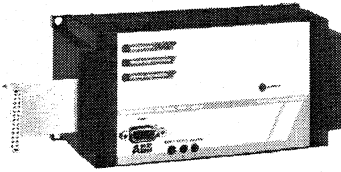
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Input module, 16 inputs @ 24VDC, isolated, input delay, which can be configured 2-32 ms 24VDC power supply 220VAC power supply 110VAC power supply	ICS16E1-24 ICS16E1-220 ICS16E1-110	\$ 470 510 510
Safety input module, 8 inputs @ 24VDC In case of errors, system will pass into save state	07EB90-S	1340
Binary output modules Output module, 8 relay outputs, contacts rated for 250VAC/2A 24VDC power supply 220VAC power supply 110VAC power supply Output module, 8 transistor outputs, @ 24VDC/2A, max. 8A for 8 outputs, isolated, short-circuit-proof 24VDC power supply 220VAC power supply 110VAC power supply Safety output modules, 8 outputs @ 24VDC/500mA. In case of errors, system will pass into save state: all outputs are forced into zero state	ICSO08R1-24 ICSO08R1-220 ICSO08R1-110 ICSO08Y1-24 ICSO08Y1-220 ICSO08Y1-110 07AB90-S	430 450 450 880 930 930 1450
Binary I/O modules I/O module, 12 inputs @ 24VDC, input delay, which can be configured 2-32 ms, isolated against bus and 220VAC, 8 relay outputs, contact rated for 220VAC/2A 24VDC power supply 220VAC power supply 110VAC power supply I/O module, 8 configurable channels @ 24VDC input signals or @ 24VDC/0.5A output signals, max. 2A for 8 outputs, short-circuit-proof, isolated against bus and 220VAC, input delay, which can be configured 2-32 ms 24VDC power supply 220VAC power supply 110VAC power supply	ICSK20F1-24 ICSK20F1-220 ICSK20F1-110 ICSC08L1-24 ICSC08L1-220 ICSC08L1-110	550 580 580 410 440 440



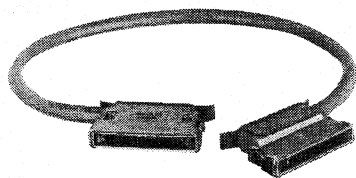
DESCRIPTION	CATALOG NUMBER	LIST PRICE
<p>I/O module, 16 configurable channels @ 24VDC input signals or @ 24VDC/0.5A output signals, max. 4A for 16 outputs, short-circuit-proof, isolated against bus and 220VAC, input delay, which can be configured 2-32 ms, flat modules, 2 module carriers ECZ are required</p> <p>24VDC power supply</p>	ICFC16L1-24	\$ 650
Analog input modules		
<p>Input module, 8 inputs @ 0...+10VDC, 4-20mA, 0-20mA signals, 8 bit resolution, isolated against bus and 220VAC</p> <p>24VDC power supply</p> <p>220VAC power supply</p> <p>110VAC power supply</p>	<p>ICSE08A6-24</p> <p>ICSE08A6-220</p> <p>ICSE08A6-110</p>	<p>840</p> <p>860</p> <p>860</p>
<p>Input module, 8 inputs @ -10...+10VDC, 4-20mA, 0-20mA signals, 12 bit resolution, isolated against bus and 220VAC</p> <p>24VDC power supply</p> <p>220VAC power supply</p> <p>110VAC power supply</p>	<p>ICSE08B5-24</p> <p>ICSE08B5-220</p> <p>ICSE08B5-110</p>	<p>1050</p> <p>1080</p> <p>1080</p>
<p>Safety analog output, 4 input channels, 4-20mA. In case of errors, system will pass into save state: All outputs are forced to the zero state.</p>	07EA90-S	1560
<p>Temperature input, 8 inputs, -50°...+150°C</p> <p>24VDC power supply</p> <p>220VAC power supply</p> <p>110VAC power supply</p>	<p>ICST08A8-24</p> <p>ICST08A8-220</p> <p>ICST08A8-110</p>	<p>1020</p> <p>1050</p> <p>1050</p>
<p>Temperature input, 8 input, 0°...+300°C</p> <p>24VDC power supply</p> <p>220VAC power supply</p> <p>110VAC power supply</p>	<p>ICST08A9-24</p> <p>ICST08A9-220</p> <p>ICST08A9-110</p>	<p>1020</p> <p>1050</p> <p>1050</p>
Analog output modules		
<p>Output module, 4 outputs @ -10V...+10V, 4-20mA, 0-20mA signals, 12 bit resolution, isolated against bus and 220VAC</p> <p>24VDC power supply</p> <p>220VAC power supply</p> <p>110VAC power supply</p>	<p>ICSA04B5-24</p> <p>ICSA04B5-220</p> <p>ICSA04B5-110</p>	<p>1120</p> <p>1150</p> <p>1150</p>



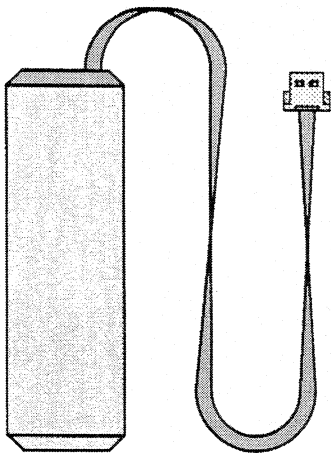
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Analog I/O modules		
I/O module, 4 inputs @ 0-10VDC, 4-20mA, 0-20mA signals, 8 bit resolution, isolated against bus and 220VAC, 2 outputs @ -10...+10VDC, 0-20mA, 4-20mA signals, 8 bit resolution, isolated against bus and 220VAC		
24VDC power supply	ICSM06A6-24	\$ 890
220VAC power supply	ICSM06A6-220	910
110VAC power supply	ICSM06A6-110	910
Counter Modules		
High-speed counter 50kHz, mode 1 with 32 bit resolution for incremental encoder, mode 2 with 3 counters each with 16 bit resolution, isolated against bus and 220VAC		
24VDC power supply	ICSF08D1-24	940
220VAC power supply	ICSF08D1-220	1090
110VAC power supply	ICSF08D1-110	1090
Communication modules		
Side car modules with 1 serial programming interface (RS-232C) and 1 serial interface for communication via RCOM protocol (RS-232C). Only usable with 07KT92, 07KR91R0151		
24VDC power supply	07KP90-24	1170
Communication module with RCOM interface usable with 07KR91, 07KT92R0151	NCJA	2610
Communication module with UCZA interface, 5VDC	NCJB	2610
Communication module with UCZA interface, 5VDC	NCJC	2610



DESCRIPTION	CATALOG NUMBER	LIST PRICE
Coupler modules		
Coupler module for the system bus RS-485, with a connection to the central unit UCZA, interface for 1 System bus, mounting to the installation plate via a DIN rail or by means of screws, with a connection cable to the central unit UCZA, power supplied by the UCZA.	SCZ	\$ 1010
I/O module to connect to ROBOT-S3, mountable into rack ROBOT-S3 16 inputs, 16 outputs 32 inputs, 32 outputs	ICBG32L7 ICBG64L7	2350 2770
Single slot IBM PC/AT card that allows interface to CS31 bus. Supports ANSI-C driver functions	07CM90	1550
Positioning Module		
Module for 3 independent axis, nominal value of output $\pm 10\text{VDC}$, incremental position sensor, control time 4ms, 24VDC power supply.	07GV93R101	4220
Programming		
Programming and test software in IL, LD, and FBD language on disc for IBM PC/AT, special system part for ABB Procontic CS31 (07KR91, 07KT92) and for the ABB Procontic T200 communication processor 07KP62, including documentation. Necessary general part 907PC33	907PC331R102	760
Programming and test software documentation in IL, LD, and FBD languages for IBM PC/AT, general part, discs included in special system part	907PC33	320
Programming and test software in IL, LD, and FBD languages on disc for ABB Procontic b and Procontic CS31 (UCZA) for IBM PC/AT including documentation	907PC323R102	1340
Special programming software when using safety modules. For use with CS31 and T200.	907PC326	1560
Programming and diagnosis unit for bus-diagnostic with UCZA, 07CS61 or 35CS91, programming and test for PCZB and CS20, service device for 07KR91 and 07KT92, comes with system cable, power supplied by the system, or battery module.	TCZ	1810



DESCRIPTION	CATALOG NUMBER	LIST PRICE
System cables		
Cable to connect 07KR91, 07KT92, 07KP62 to IBM PC/AT, 07PM11, 35BS93 (active mode) and 07KP64 with terminal Cable length: 16.4 feet (5m)	07SK90	\$ 160
Cable to connect 07KR91, 07KT92, 07KP62 to cable 35SK42 for 35BS40, 07PM11, 35BS93 (passive mode) Cable length: 16.4 feet (5m)	07SK91	160
Cable to connect UCZA, PCZB, CS20 and 07PC31/32 9 pin male to 25 pin female Cable length: 6.5 feet (2m)	FPTN48R1	180
Cable to connect UCZA, PCZB, CS20 to IBM PC/AT 9 pin male to 9 pin female connection Cable length: 6.5 feet (2m)	FPTN48R2	180
Cable to connect NCJ and UCZA Cable length: 1.6 feet (0.5m)	FPTN48R3	180
Cable to connect TCZ and printer 25 pin male to 25 pin female Cable length: 6.5 feet (2 m)	FPTN48R4	180
Cable to connect UCZA, with 07PM11, 35BS93 9 pin male to 25 pin female Cable length: 9.8 feet (3m)	FPTN48R5	180
Cable to connect UCZA to external serial device, 9 pin Cable length: 9.8 feet (3m)	FPTN48R6	180
Accessories		
Battery module (plug with battery) for TCZ (offline programming) and an adapter for the printer cable	FPTN58R2	410
Lithium battery for 07KR91, 07KT92, 07KP62	07LE90R1	70
Simulation unit for 07KR91, 07KT92	07SG90R1	320



DESCRIPTION	CATALOG NUMBER	LIST PRICE
Power Supply		
Power supply unit:		
220VAC/24VDC, 2.5A	07NG32R1	\$ 290
220VAC/24VDC, 5A	07NG34R1	530
230VAC(Δ), 400VAC(Y)/24VDC, 10A	07NG35R1	690
230VAC(Δ), 400VAC(Y)/24VDC, 20A	07NG36R1	830
Spare parts		
Lithium battery for UCZA	FPTN49R1	60
Lithium battery for TCZ	FPTN49R2	60
5V Battery for battery module	FPTN49R3	40
Spare cable to connect TCZ with UCZA, PCZB, CS20, 07KR91, 07KT92, 07CS61, 35CS91 and battery module	FPTN75R1	160
Documentation		
ABB Procontic CS31 Complete documentation in a file General part, hardware, operating manual TCZ	DOCCS31	170
ABB Procontic CS31 07KR91 PLC, operating instructions	DOC07KR91	40
ABB Procontic CS31 07KT92 PLC operating instructions	DOC07KT92	On Request
ABB Procontic 07CM90 operating instructions	DOC07CM90	70
ABB Procontic 07GV93 Positioning module operating instructions	DOC07GV93	70

Configuration Worksheet

The following configuration guide is to help lead you through assembling a complete CS31 system.

1. Determine the total number of I/O for the application including specialty modules.
2. Choose the I/O modules that coincide with the application. (Use Configuration Guide.)
3. Choose a processor that will accomplish the application's requirements such as number of serial ports, total number of I/O, or how many I/O you will need on the central unit.
4. Using the worksheet on the following page, in the first column, place the total quantity of each part number that you will need to fulfill the application. Next, calculate the total number of either binary or analog points by multiplying column number 1 by column number 3. Total columns 4, 5, and 6 to be certain the numbers are within the specifications for the central unit you have chosen.
5. Many of the modules will need a module carrier. Multiply column number 1 by column number 7 to obtain the total number of module carriers that will be needed for that particular module. Place this number in column 8. Total column number 8 to obtain the number of ECZ's that will be needed for this application.
6. Extra cabling may need to be added for software programming or interface.
7. Include the hand-held unit or software for programming and testing of the central unit. General part 907PC33 needs to be included with the program and test software. Check for software that may be needed to program specialty modules.



Configuration Worksheet

QUANTITY	PART NUMBER	I/O POINTS	TOTAL BINARY	ANALOG INPUTS	ANALOG OUTPUTS	ECZ'S REQ	TOTAL ECZ'S
	07KR31-24	20		—	—	1	
	07KR31-110	20		—	—	1	
	07KR31-220	20		—	—	1	
	07KR91-220	32		—	—	—	—
	07KR91-24	32		—	—	—	—
	07KT92-24	25				—	—
	UCZA-24	—	—	—	—	—	—
	UCZA-220	—	—	—	—	—	—
	UCZB-24	—	—	—	—	—	—
	UCZB-220	—	—	—	—	—	—
	PCZB-24	20		—	—	1	
	PCZB-220	20		—	—	1	
	CS20-24	20		—	—	1	
	CS20-220	20		—	—	1	
	ICSI08D1-24	8		—	—	1	
	ICSI08D1-220	8		—	—	1	
	ICSI08E1-24	8		—	—	1	
	ICSI08E1-220	8		—	—	1	
	ICSI08E3-110	8		—	—	1	
	ICSI08E4-220	8		—	—	1	
	ICSI16D1-24	16		—	—	1	
	ICSI16D1-220	16		—	—	1	
	ICSI16E1-24	16		—	—	1	
	ICSI16E1-220	16		—	—	1	
	07EB90-S	8		—	—	—	
	ICSO08R1-24	8		—	—	1	
	ICSO08R1-220	8		—	—	1	
	ICSO08Y1-24	8		—	—	1	
	ICSO08Y1-220	8		—	—	1	
	07AB90-S	8		—	—	—	
	ICSK20F1-24	20		—	—	1	
	ICSK20F1-220	20		—	—	1	
	(CONTINUED NEXT PAGE)						

Configuration Worksheet

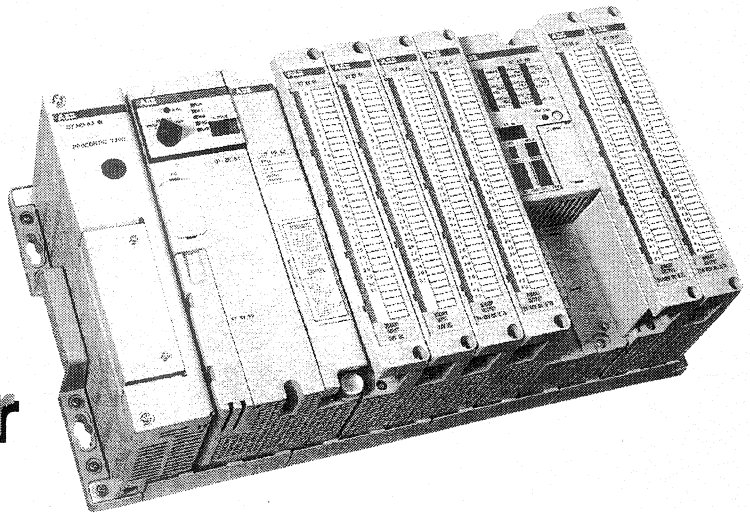
QUANTITY	PART NUMBER	I/O POINTS	TOTAL BINARY	ANALOG INPUTS	ANALOG OUTPUTS	ECZ'S REQ	TOTAL ECZ'S
	ISCO08L1-24	8		—	—	1	
	ISCO08L1-220	8		—	—	1	
	ICFC16L1-24	16		—	—	2	
	ICSE08A6-24	8	—		—	1	
	ICSE08A6-220	8	—		—	1	
	ICSE08B5-24	8	—		—	1	
	ICSE08B5-220	8	—		—	1	
	07EA90-S	—	—		—	—	—
	ICSA04B5-24	4	—	—		1	
	ICSA04B5-220	4	—	—		1	
	ICSM06A6-24	6	—			1	
	ICSM06A6-220	6	—			1	
	ICST08A8-24	8	—		—	1	
	ICST08A8-110	8	—		—	1	
	ICST08A8-220	8	—		—	1	
	ICST08A9-24	8	—		—	1	
	ICST08A9-110	8	—		—	1	
	ICST08A9-220	8	—		—	1	
	ICSF08D1-24	16	—			1	
	ICSF08D1-220	16	—			1	
	07KP90-24	—	—	—	—	—	—
	SCZ	—	—	—	—	1	
	ICBG32L7	32		—	—	1	
	ICBG64L7	64		—	—	—	—
	NCJA	—	—	—	—	—	—
	NCJB	—	—	—	—	—	—
	NCJC	—	—	—	—	—	—
						TOTAL ECZ'S	

CATALOG NUMBER	DESCRIPTION	CATALOG NUMBER	DESCRIPTION
Central Units			
07KR31-24	2K Memory, 1 serial port, 12 in/8 out, 24VDC power	ICSI16D1-24	24VDC Input module, non-isolated, 16 in, 24VDC power
07KR31-110	2K Memory, 1 serial port, 12 in/8 out, 110VAC power	ICSI16D1-220	24VDC Input module, non-isolated, 16 in, 220VAC power
07KR31-220	2K Memory, 1 serial port, 12 in/8 out, 220VAC power	ICSI16E1-24	24VDC Input module, isolated, 16 in, 24VDC power
07KR91-220	7K Memory, 1 serial port, 20 in/12 out, 220VAC power	ICSI16E1-220	24VDC Input module, isolated, 16 in, 220VAC power
07KR91-24	7K Memory, 1 serial port, 20 in/12 out, 24VDC power	07EB90-S	24VDC Safety input module, 8 in
07KT92-24	7K Memory, 2 serial ports, 12 binary in/8 binary out, 4 analog in/1 analog out, 24VDC power	Binary Output Modules	
UCZA-24	8K Memory, 2 serial ports, 24VDC power	ICSO08R1-24	Relay output module, 2A, 8 out, 24VDC power
UCZA-220	8K Memory, 2 serial ports, 220VAC power	ICSO08R1-220	Relay output module, 2A, 8 out, 220VAC power
UCZB-24	8K Memory, 2 serial ports, 24VDC power	ICSO08Y1-24	Transistor output module, 2A, 8 out, 24VDC power
UCZB-220	8K Memory, 2 serial ports, 220VAC power	ICSO08Y1-220	Transistor output module, 2A, 8 out, 220VAC power
PCZB-24	2K Memory, 1 serial port, 12 in/8 out, 24VDC power	07AB90-S	Safety output module, 500mA, 8 out
PCZB-220	2K Memory, 1 serial port, 12 in/8 out, 220VAC power	Combination Input/Output Modules	
CS20-24	2K Memory, 1 serial port, 12 in/8 out, no bus, 24VDC power	ICSK20F1-24	12 Input, 8 relay out, 24VDC power
CS20-220	2K Memory, 1 serial port, 12 in/8 out, no bus, 220VAC power	ICSK20F1-220	12 Input, 8 relay out, 220VAC power
Module carriers		ICSC08L1-24	Configurable, either 8-24VDC input, or 8 transistor 24VDC out, 24VDC power
ECZ	CS31 I/O plug-in base	ICSC08L1-220	Configurable, either 8-24VDC input, or 8 transistor 24VDC out 220VAC power
Binary Input Modules		ICFC16L1-24	Configurable, either 8-24VDC input, or 16 transistor 24VDC out, 24VDC power
ICSI08D1-24	24VDC Input module, non-isolated, 8 in, 24VDC power	Analog Input Modules	
ICSI08D1-220	24VDC Input module, non-isolated, 8 in, 220VAC power	ICSE08A6-24	8 Inputs, 0-10VDC, 4-20mA, 0-20ma, 8 bit, 24VDC power
ICSI08E1-24	24VDC Input module, isolated, 8 in, 24VDC power	ICSE08A6-220	8 Inputs, 0-10VDC, 4-20mA, 0-20ma, 8 bit, 220VAC power
ICSI08E1-220	24VDC Input module, isolated, 8 in, 220VAC power	ICSE08B5-24	8 Inputs, 0-10VDC, 4-20mA, 0-20ma, 12 bit, 24VDC power
ICSI08E3-110	110VAC Input module, isolated, 8 in, 110VAC power	ICSE08B5-220	8 Inputs, 0-10VDC, 4-20mA, 0-20ma, 12 bit, 220VAC power
ICSI08E4-220	220VAC Input module, isolated, 8 in, 220VAC power	07EA90-S	4 Inputs, 4-20ma, analog safety module

Configuration Guide

CATALOG NUMBER	DESCRIPTION
Analog Output Modules	
ICSA04B5-24	4 Outputs, 0-10VDC, 4-20mA, 0-20ma, 12 bit, 24VDC power
ICSA04B5-220	4 Outputs, 0-10VDC, 4-20mA, 0-20ma, 12 bit, 220VAC power
Combination Analog/Output Modules	
ICSM06A6-24	4 inputs, 2 outputs, 0-10VDC, 4-20mA, 0-20ma, 8 bit, 24VDC power
ICSM06A6-220	4 inputs, 2 outputs, 0-10VDC, 4-20mA, 0-20ma, 8 bit, 220VAC power
Temperature Input Modules	
ICST08A8-248	Inputs, -50°...+150°C, 24VDC power
ICST08A8-110	8 Inputs, -50°...+150°C, 110VAC power
ICST08A8-220	8 Inputs, -50°...+150°C, 220VAC power
ICST08A9-24	8 Inputs, 0°...+300°C, 24VDC power
ICST08A9-110	8 Inputs, -50°...+150°C, 110VAC power
ICST08A9-220	8 Inputs, -50°...+150°C, 220VAC power
Counter Modules	
ICSF08D1-24	50kHz, 1 quadrature or 3 @ 16 bit inputs, 24VDC power
ICSF08D1-220	50kHz, 1 quadrature or 3 @ 16 bit inputs, 220VAC power
Communication	
07KP90-24	RCOM/CS31 interface, RS-232
Positioning Unit	
07GV93-R101	3 axis positioning unit, ±10VDC output, 24VDC power
Coupler Modules	
SCZ	Additional CS31 system bus for UCZA/UCZB
ICBG32L7	Robot interface/CS31 I/O module, 32 channel
ICBG64L7	Robot interface/CS31 I/O module, 64 channel
NCJA	Communication between KR91/KT92 and Modbus network as a slave

CATALOG NUMBER	DESCRIPTION
NCJB	Communication with UCZA interface, 5A
NCJC	Communication with UCZA interface, 5A
07CM90	CS31 bus coupler for IBM PC
Programming	
907PC33	General part, program documentation
907PC331	Programming software for CS31
907PC326	Special software for safety modules
TCZ	CS31 hand-held program unit
System Cables	
07SK90	Programming cable, 16.4 ft. (5m), RS-232
07SK91	MMI cable, 16.4 ft. (5m),
FPTN48R1	Print cable for UCZA, 6.5 ft. (2m)
FPTN48R2	Programming cable for UCZA, 6.5 ft. (2m)
FPTN48R3	Interface cable, UCZA, 1.6 ft. (.5m)
FPTN48R4	Print cable for TCZ, 6.5 ft. (2m)
FPTN48R5	Programming cable for UCZA, 9.8 ft. (3m)
FPTN48R6	Print cable for UCZA, 9.8 ft. (3m)
Accessories	
FPTN58R2	Battery module for TCZ
07LE90R1	Lithium battery
07SG90R1	I/O simulator
07NG32R1	Power supply, 2.5A
07NG34R1	Power supply, 5A
07NG35R1	Power supply, 10A
07NG36R1	Power supply, 20A
Spare Parts/Documentation	
FPTN49R1	Lithium battery for UCZA
FPTN49R2	Lithium battery for TCZ
FPTN49R3	Battery module battery
FPTN75R1	Interface cable to TCZ
DOCCS31	System description
DOC07KR91	07KR91 operating manual
DOC07KT92	07KT92 operating manual
DOC07CM90	07CM90 operating manual
DOC07GV93	07GV93 operating manual



The Modular Controller T200

The ABB Procontic T200 programmable logic controller is a modular control system, able to meet the requirements of a broad range of applications.

The ABB T200 has been completely integrated into the ABB PLC family. T200 programming software possesses the same user interface as the other PLC families from ABB. The software is IBM PC/AT compatible and has facilities for efficient process display and control. T200 supports connectivity to the ABB field bus ZB10, ZB20 and ZB50.

ABB PLC systems are designed for demanding industrial application and are sturdy and insensitive to interference (EMC). Various diagnostic functions of the ABB T200 simplify start-up.

Core system of the ABB T200 consists of one rack, one central unit, one program memory, several inputs/outputs and one power supply.

Central expansion racks (near the central unit) or remote expansion racks allow more space for future input/output modules. Four central units, classified according to the expansion requirements and a series of preprocessors and bus interface modules allow the ABB T200 to be adapted to various control tasks.

Features:

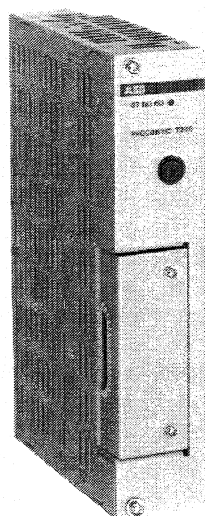
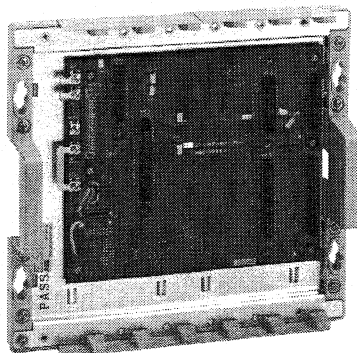
- Flexible system
- Easily expanded
- Wide range of modules
- Programming by IBM compatible personal computers
- Extensive diagnostics capability without auxiliary modules
- Easy access to the controller by means of a personal computer

Powerful serial bus systems connect remote stations in different configurations:

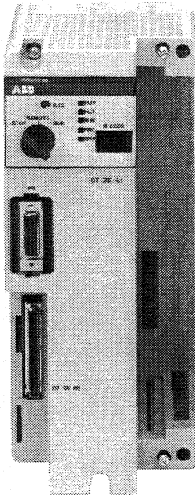
- The ABB field bus ZB10 exchanges data with other ABB PLC systems.
- The ABB T200 field bus ZB20 is designed specifically for data transfer between ABB T200 stations. It can also exchange process data, programs and parameters. It can also be supplied with fiber optic interface.
- Coupling to ABB field bus ZB50 (PROFIBUS)

Characteristics:

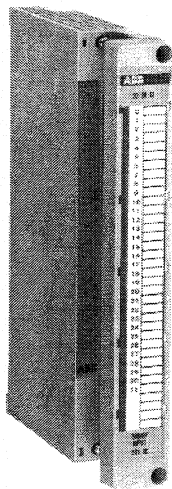
- Four central units with increasing capacity, integral PID
- RAM- and EPROM memory, separately housed, is available with different memory capacities
- 3 basic expansion racks with 2, 5 and 8 I/O slots
- Binary input/output modules for all common voltages and currents
- Analog input/output modules for all common values
- Temperature input module
- Interrupt input modules, high-speed counter, positioning unit
- Units for remote connection of expansion racks
- Bus interface units, text processor
- Units for connection with ABB field bus ZB10, field bus ZB20 and field bus ZB50 (PROFIBUS)



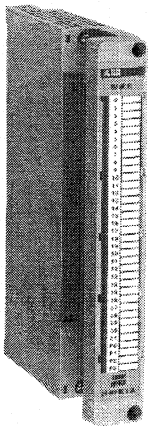
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Basic Racks		
Basic subrack with 1 slot for a power supply unit, 1 slot for a central unit, 2 I/O slots	07BT60R1	\$ 320
Basic subrack with 1 slot for a power supply unit, 1 slot for a central unit, 5 I/O	07BT61R1	400
Basic subrack with 1 slot for a power supply unit, 1 slot for a central unit, 8 I/O slots	07BT62R1	570
Expansion Racks		
Expansion subrack with 1 slot for a power supply unit, 1 slot for a bus coupler, 4 I/O slots	07BE60R1	290
Expansion subrack with 1 slot for a power supply unit, 1 slot for a bus couplers, 7 I/O slots	07BE61R1	400
Expansion subrack with 1 slot for a power supply unit, 1 slot for a bus coupler, 10 I/O slots	07BE62R1	570
Expansion subrack with 1 slot for a power supply unit, 1 slot for a bus coupler, 4 slots for 07BR60	07BE69R1	410
Power supply		
Power supply unit: 110/220VAC power, output 5 VDC/2A, 24VDC/2A, for expansion subracks only	07NG60R1	490
Power supply unit: 110/220VAC power, output 5VDC/4A, 24VDC/1.5A	07NG61R1	490
Power supply unit: 110/220VAC power, output 5VDC/9A, 24VDC/0.5A	07NG63R1	760
Power supply unit: 24VDC power, output 5VDC/4A, 24VDC/1.5A	07NG66R1	720
Power supply unit: 24VDC power, output 5VDC/9A, 24V DC/0.5A	07NG68R1	940



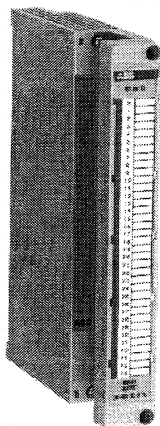
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Central Processing Units		
Central unit for max. 256 I/O, max. 7.6K program memory and max. 2K word flags, 1 serial interface, realtime clock	07ZE60R302	\$ 1150
Central unit for max. 576 I/O, max. 15.7K program memory and max. 16K word flags, 1 serial interface, realtime clock	07ZE61R302	1330
Central unit for max. 1856 I/O, max. 48.5K program memory and max. 50K word flags, 1 serial interface, realtime clock	07ZE62R302	5140
Central unit for max. 1856 I/O, max. 15.7K program memory and max. 16K word flags, 1 serial interface, realtime clock	07ZE63R302	2210
Program Memories		
Program memory (CMOS-RAM) for 3.5K instructions, data memory for 2K word flags	07PS60R2	390
Program memory (CMOS-RAM) for 7.6K instructions, data memory for 2K word flags	07PS61R2	630
Program memory (CMOS-RAM) for 15.7K instructions, data memory for 16K word flags	07PS62R2	860



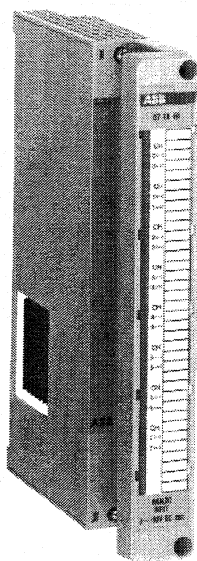
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Program memory (CMOS-RAM) for 48.5K instructions, data memory for 50K word flags	07PS63R2	\$ 2,390
Program memory (CMOS-RAM) for 7.6K instructions, data memory for 2K word flags	07PS61R3	1330
Program memory (CMOS-RAM) for 15.7K instructions, data memory for 16K word flags	07PS62R3	1730
Program memory (CMOS-RAM) for 48.5K instructions, data memory for 50K word flags	07PS63R3	5130
Program memory (EPROM) for 15.7K instructions, data memory for 16K word flags	07PR62R2	530
Program memory (EPROM) for 48.5K instructions, data memory for 50K word flags	07PR63R2	1960
Binary input modules		
Front connector with screw-type terminals		
Input module 16 binary inputs @ 24VAC/DC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB60R1	400
Input module 32 binary inputs @ 24VAC/DC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB61R1	520
Input High-speed module 32 binary inputs @ 24VDC, isolated, input signal delay: max. 1ms, 1 I/O slot	07EB62R1	660
Input module 16 binary inputs @ 48VAC/DC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB63R1	550



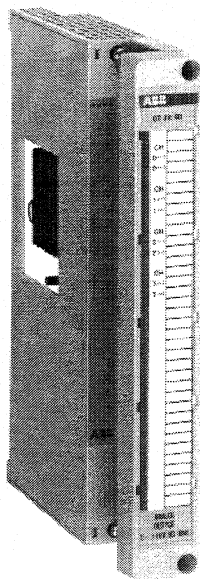
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Binary input modules Front connector with screw-type terminals		
Input module 32 binary inputs @ 48VAC/DC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB64R1	\$ 550
Input module 16 binary inputs @ 110VAC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB66R1	420
Input module 16 binary inputs @ 220VAC, isolated, input signal delay: max. 16ms, 1 I/O slot	07EB67R1	420
Interrupt input module 16 interrupt inputs @ 24VDC, isolated, input signal delay: max. 1ms, 1 I/O slot	07EI60R1	910
Input Module 32 binary inputs @ 110VAC, 1 I/O slot	07EB68	830
Binary output modules Front connector with screw-type terminals		
Output module 16 binary outputs, 24/48VDC 2A, isolated, transistor output, 1 I/O slot	07AB60R1	530



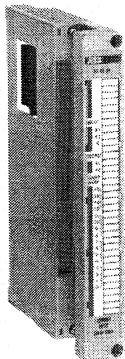
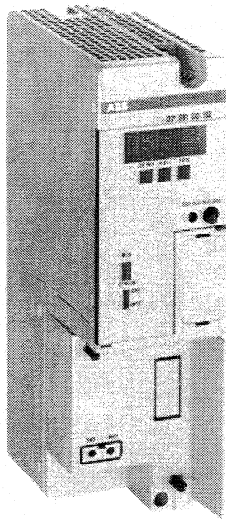
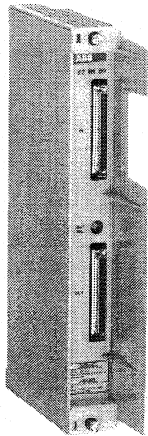
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Output module 32 binary outputs: 24/48VDC, 0.5A, isolated, transistor output, 1 I/O slot	07AB61R1	\$ 740
Output module 16 binary outputs: 24VDC, 1A, isolated, transistor output, short-circuit-proof 1 I/O slot	07AB62R1	1090
Output module 32 binary outputs: 24VDC, 500mA, isolated, transistor output, short-circuit-proof 1 I/O slot	07AB63R1	1330
Output module 16 binary outputs: 240VAC, 24VDC, isolated, relay output, 1 I/O slot	07AB67R1	730
Output module 32 binary outputs: 120VAC, 1 I/O slot	07AB69	1370



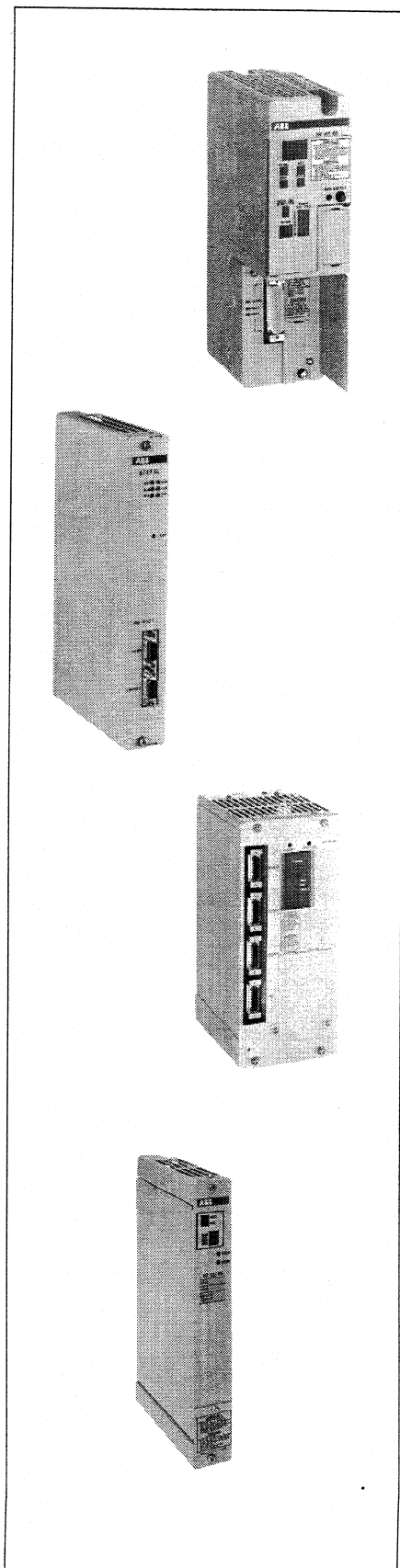
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Analog input modules		
Front connector with screw-type terminals		
Input module 8 analog inputs, 0-10VDC, 8 bit resolution, isolated, 1 I/O slot	07EA60R1	\$ 870
Input module 8 analog inputs, 4-20mA 8 bit resolution, isolated, 1 I/O slot	07EA61R1	870
Input module 8 analog inputs, -10V...+10V 12 bit resolution, isolated, 1 I/O slot	07EA62R1	1650
Input module 8 analog inputs, 4-20mA 12 bit resolution, isolated, 1 I/O slot	07EA63R1	1570
Input module 8 analog inputs, 0-20mA 8 bit resolution, isolated, 1 I/O slot	07EA64R1	760
Input module 8 analog inputs, 0-20mA and 12 bit resolution, isolated, 1 I/O slot	07EA65R1	1520



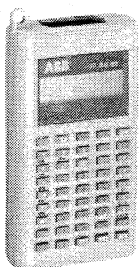
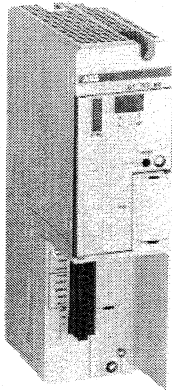
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Input module 8 RTD inputs, Pt 100 transducer, temperature range: -50°...400°C, 13 bit resolution, isolated, 1 I/O slot	07EA66R1	\$ 1510
Input module 8 thermocouple inputs, Fe-CuNi, Ni-CrNi, Pt Rh-Pt temperature range 0°...1600° C, 13 bit resolution, isolated, 1 I/O slot	07EA67R1	2120
Analog output modules Front connector with screw-type terminals		
Output module 4 analog outputs, 0-10VDC 8 bit resolution, isolated, 1 I/O slot	07AA60R1	870
Output module 4 analog outputs, 4-20 mA 8 bit resolution, isolated, 1 I/O slot	07AA61R1	870
Output module 4 analog outputs, -10V...+10VDC 12 bit resolution, isolated, 1 I/O slot	07AA62R1	1660
Output module 4 analog outputs, 4-20mA 12 bit resolution, isolated, 1 I/O slot	07AA63R1	1660



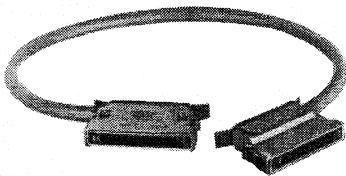
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Bus connectors Bus connector for central I/O expansions 1 bus connector slot System cables to connect the 07BV60; 07SV60R1/R2 07SV61R1/R2 see "System cables" Coupler to system bus ABB Procontic CS31, 1 I/O slot	07BV60R1 07CS61R101	\$ 420 1350
I/O system expansion Remote I/O coupler used in basic subracks, TRIAX-cable, 2 I/O slots Remote I/O coupler used in basic subracks, Fiber-optic cable, 2 I/O slots Remote I/O coupler used in expansion subrack, TRIAX cable, occupies 2 slots, 1 bus connector slot and 1 I/O slot. Remote I/O coupler used in expansion subrack, fiber-optic, occupies 2 slots, 1 bus connector slot and 1 I/O slot.	07BR60R1 07BR60R2 07BR61R1 07BR61R2	2090 2860 2610 5180
Counters Front connector with screw-type terminals High-speed counter 16 bits, 50kHz, 1 I/O slot	07ZG60R1	1270



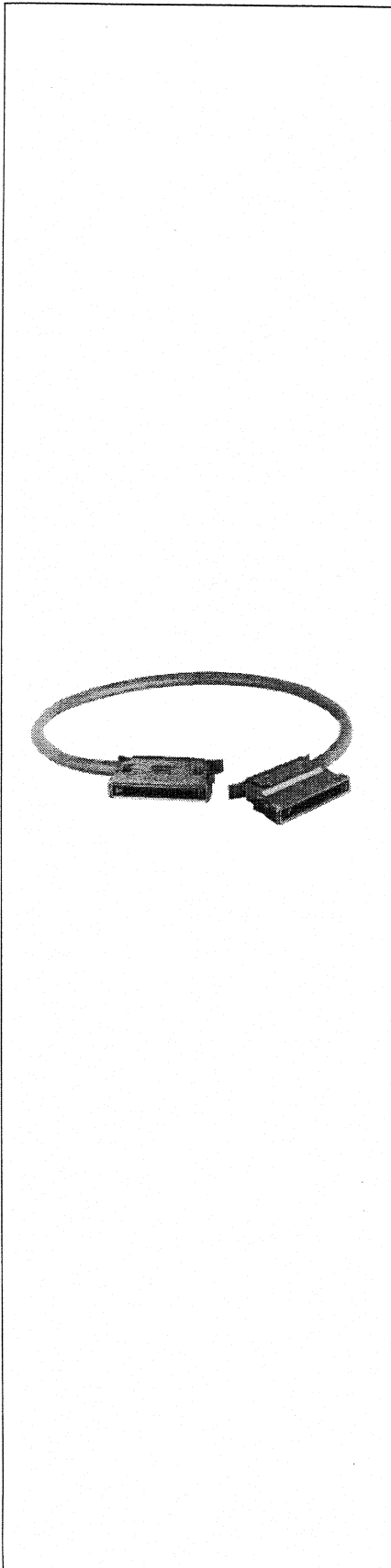
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Communication processors		
Communication processor with 2 serial interfaces (RS-232C/RS-422), 2 I/O slots, basic subrack only	07KP60R101	\$ 1670
Communication processor with 1 serial programming interface (RS-232C) and 1 serial ASCII interface (RS-232C) 1 I/O slot, basic subrack only	07KP62R101	1670
Text processor with 1 serial interface (RS-232C or RS-422), 2 I/O slots	07KT60R101	3120
Communication processor with 1 serial programming interface (RS-232C), and 1 serial interface to communication via RCOM-protocol, 1 I/O slot, basic subrack only	07KP64R101	1670
Industrial computers		
Industrial computer BASIC with 4 serial interfaces (RS-232C), including 1 programming interface, 3 I/O slots, basic subrack only	07IR60R101	9030
Real-time clock		
Real-time clock for the time and date, 7 timers, time resolution: 1 sec, 1 I/O slot	07UD60R1	1710



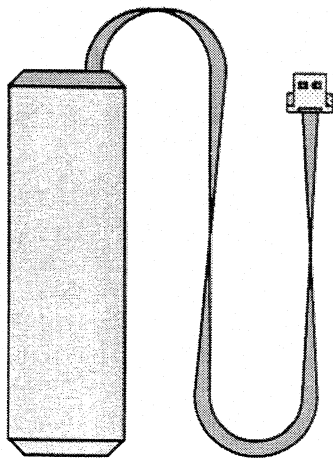
DESCRIPTION	CATALOG NUMBER	LIST PRICE
Positioning units		
Positioning unit for 1 axis with NC data memory, 1 serial interface, input for incremental measuring systems, output: $\pm 10V$, 2 I/O slots	07PO60R201	\$ 3370
Programming		
Programming software for 07IR60, including documentation	907IR60R102	1180
Programming and test software documentation IL, LD, and FBD languages for IBM PC/AT, general part, discs included in special system part	907PC33R102	320
Programming and test software in IL, LD, and FBD languages for IBM PC/AT, special system part for ABB Procontic T200, including documentation Necessary general part 907PC33	907PC332R102	1340
Block library expansion for ABB Procontic T200, modules: AMELD, BMELD, COPY, FIFOB, LIFO, LIZU, can only be used together with 907PC32, including documentation	907PB360R102	540
Block library expansion for ABB Procontic T200, modules: FKG, PI PID, can only be used together with 907PC32, including documentation	907PB361R102	440
Block library expansion for ABB Procontic T200, modules to address 07PO60, 07UD60, 07KT60, can only be used together with 907PC32, including documentation	907PB362R302	630
Special programming software when using safety modules. For use with T200 and CS31.	907PC326	1560
Hand-held monitoring tool to display and alter timer and counter nominal values	07BG60R101	930



DESCRIPTION	CATALOG NUMBER	LIST PRICE
System cables		
System expansion cable for the hand-held monitoring tool, 07BG60 15 pin female to 15 pin male Cable length: 6.5 feet (2m) Cable length: 16.4 feet (5m)	07SK60R2 07SK60R5	\$ 250 310
Cable to connect 07ZE60/61/62/63, 07BR61, 07KP60 to 07PC31/32, 35BS95, 35BS93, 07PM11 25 pin female to 15 pin male Cable length: 9.8 feet (3m)	07SK61R1	130
Cable to connect 07ZE60/61/62/63, 07BR61, 07KP60 to IBM PC/AT 9 pin female to 15 pin male Cable length: 9.8 feet (3m)	07SK62R1	130
Cable to connect 07IR60 and 07PC31/32 25 pin female to 15 pin male Cable length: 9.8 feet (3m)	07SK63R1	130
Cable to connect 07KT60 and 07PC31/32, 07DR12 25 pin female to 25 pin male Cable length: 9.8 feet (3m)	07SK64R1	130



DESCRIPTION	CATALOG NUMBER	LIST PRICE
Cable to connect 07PO60 and 35AB50/PC 15 pin male to 25 pin female Cable length: 9.8 feet (3m)	07SK65R1	\$ 130
Cable to connect 07PO60 and 35US50 2-15 pin male to 9 pin female Cable length: 3.2 feet (1m)	07SK66R1	130
Cable to connect 07KT60 and 07DR12 25 pin male to 25 pin male Cable length: 9.8 feet (3m)	07SK67R1	130
Cable to connect 07KT60 and 35BS40 25 pin male to 25 pin male Cable length: 9.8 feet (3m)	07SK68R1	120
Cable for the bus coupler 07BV60, between the CPU and the expansion subrack Cable length: 1.6 feet (0.5 m) Cable length: 3.2 feet (1m)	07SV60R1 07SV60R2	220 220
Cable for the bus coupler 07BV60, between two expansion subracks Cable length: 1.6 feet (0.5 m) Cable length: 3.2 feet (1m)	07SV61R1 07SV61R2	220 220



DESCRIPTION	CATALOG NUMBER	LIST PRICE
Accessories		
Lithium battery for 07PS60, 07PS61, 07PS62, 07PS63, 07PR62, 07PR63, 07KT60, 07IR60, 07UD60	07LB60R1	\$ 40
Set of system cables to increase the distance between the LED plug of the I/O units and the front cover	07SZ60R1	90
Empty housing/Dummy Module 1 slot	07BA60R1	170
Power supply unit: 220VAC/24VDC, 2.5A 220VAC/24VDC, 5A 230VAC(Δ), 400VAC(Y)/24VDC, 10A 230VAC(Δ), 400VAC(Y)/24VDC, 20A	07NG32R1	400
	07NG34R1	740
	07NG35R1	690
	07NG36R1	830
Fiber-optic cable for direct connection between couplers, Cable length: 32.8 feet (10m)	07LK60R1	670
Fiber-optic cable for connection of couplers to an external optical fiber, Cable length: 32.8 feet (10m)	07LK61R1	380
Fiber-optic coupling device for cable-to-cable connection and test and measurement purposes	07LV60R1	60
Spare parts		
Type – 20-pole terminal strip for an I/O unit	TS20	50
Type – 40-pole terminal strip for an I/O unit	TS40	70

DESCRIPTION	CATALOG NUMBER	LIST PRICE
Type – Terminal strip cover	07TS93R3	\$ 10
Type – Relay for 07AB67	07RY94R1	20
Type – 5A fuse	07FS50R1	20
Type – 7.5A fuse	07FS75R2	20
Type – Key for the central unit	07KY00R1	10
EPROM memory IC for 07PR62R2	07PR67R1	100
EPROM memory IC for 07PR63R12	07PR68R1	160
Documentation		
ABB Procontic T200 Complete documentation in a file General part, hardware, operating instructions for 07BG60, configuration instructions	DOCT200	90
ABB Procontic T200 Operating instructions for 07KT60R0101	DOC07KT60	70

Configuration Worksheet

The following configuration guide is to help lead you through assembling a complete T200 system.

1. Determine the total number of I/O for the application, including specialty modules.
2. Determine where the I/O will be placed, locally or remotely. If needed, choose local I/O coupler or if the distance is further, a remote coupler.
3. Will this T200 need to communicate with other ABB PLCs? If needed, choose an appropriate Procontic Network BUS coupler.
4. Choose the I/O modules that coincide with the application. (Use configuration guide)
5. Add total number of I/O and special modules, then determine the location that each will need to be placed.
6. Begin placing modules in the racks using the configuration worksheet on the following page. Mark if this is a Basic Subrack, Basic Expansion or Remote I/O. (Make the first one a Basic Subrack) Use a separate sheet for each rack.
7. Once you have completed the worksheet(s), total the appropriate columns. From this information a power supply can now be chosen. If the application needs further racks, continue until all of the I/O have been placed.
8. Choose a processor according to the information you now have.
9. The memory module can now be selected using the following approximate calculation: Number of Instructions = Number of I/O multiplied by 5 to 10, depending on the complexity of the application.
10. Extra cabling may need to be added for couplers and specialty modules.
11. Include the software for programming and testing of the central unit. General Part 907PC33 needs to be included with the program and test software. Check for software that may be needed to program specialty modules.
12. Include documentation for each site. Suggest multiple copies of the T200 System description when more than 1 location will have T200

BASIC SUBRACK		__07BT60		__07BT61		__07BT62			
EXPANSION SUBRACK		__07BE60		__07BE61		__07BE62		__07BE69	
		I/O POINTS		NO. OF SLOTS		CURRENT CUNSUMPTION IN mA			
QTY	PART NUMBER		TOTAL		TOTAL	5V	24V	TOTAL 5V	TOTAL 24V
	07ZE60R302	——	——	3	——	2050	0		——
	07ZE61R302	——	——	3	——	2050	0		——
	07ZE62R302	——	——	3	——	2750	0		——
	07ZE63R302	——	——	3	——	2050	0		——
	07EB60R1	16		1		120	0		——
	07EB61R1	32		1		150	0		——
	07EB62R1	32		1		150	0		——
	07EB63R1	16		1		120	0		——
	07EB64R1	32		1		150	0		——
	07EB66R1	16		1		120	0		——
	07EB67R1	16		1		120	0		——
	07EB68R1	32		1					
	07EA60R1	128		1		60	70		
	07EA61R1	128		1		60	70		
	07EA62R1	128		1		60	170		
	07EA63R1	128		1		60	190		
	07EA64R1	128		1		60	70		
	07EA65R1	128		1		60	190		
	07EA66R1	128		1		160	100		
	07EA67R1	128		1		160	100		
	07ZG60R1	128		1		300	100		
	07EI60R1	16		1		120	0		——
	07AB60R1	16		1		120	0		——
	07AB61R1	32		1		180	0		——
	07AB62R1	16		1		150	0		——
	07AB63R1	32		1		180	0		——
	07AB67R1	16		1		120	0		——
	07AB69R1	32		1					

Configuration Worksheet

QTY	PART NUMBER	I/O POINTS		NO. OF SLOTS		CURRENT CONSUMPTION IN mA			
			TOTAL		TOTAL	5V	24V	TOTAL 5V	TOTAL 24V
	07AA60R1	64		1		70	80		
	07AA61R1	64		1		70	170		
	07AA62R1	64		1		60	100		
	07AA63R1	64		1		60	190		
	07BV60R1	—	—	1	—	220	0		—
	07BR60R1	—	—	2		600	0		—
	07BR60R2	—	—	2		900	0		—
	07BR61R1	—	—	2		1600	0		—
	07BR61R2	—	—	2		1900	0		—
	07ZB60R1	—	—	2		600	0		—
	07ZB60R2	—	—	2		600	0		—
	07ZB69R1	—	—	2		800	0		—
	07ZB69R2	—	—	2		1100	0		—
	07CS61R202	—	—	1		450	0		—
	07KP60R101	32	—	2		800	0		—
	07KP62R101	128	—	1		500	0		—
	07KP63R101	128	—	1		1000	0		—
	07KP64R101	128	—	1		500	0		—
	07KT60R101	128	—	2		1000	0		—
	07IR60R101	—	—	3		1500	0		—
	07PO60R201	128		2		600	0		—
	07UD60R1	128		1		100	0		—
TOTAL									

CATALOG NUMBER	DESCRIPTION
Subracks	
07BT60R1	Basic subrack, central unit, 2 I/O slots
07BT61R1	Basic subrack, central unit, 5 I/O slots
07BT62R1	Basic subrack, central unit, 8 I/O slots
07BE60R1	Expansion subrack, 4 I/O slots
07BE61R1	Expansion subrack, 7 I/O slots
07BE62R1	Expansion subrack, 10 I/O slots
07BE69R1	Expansion subrack for remote couplers
Power Supply Units	
07NG60R1	Input voltage 110/220VAC, output voltage 5VDC/2A, 24VDC/2A
07NG61R1	Input voltage 110/220VAC, output voltage 5VDC/4A, 24VDC/1.5A
07NG63R1	Input voltage 110/220VAC, output voltage 5VDC/9A, 24VDC/0.5A
07NG66R1	Input voltage 24VDC, output voltage 5VDC/4A, 24VDC/1.5A
07NG68R1	Input voltage 24VDC, output voltage 5VDC/9A, 24VDC/0.5A
Central Units	
07ZE60R302	Maximum 1 basic subrack with 8 I/O slots, only remote expansion
07ZE61R302	Maximum 1 basic subrack with 1 central expansion, remote expansion
07ZE62R302	Maximum 1 basic subrack with 5 central expansions, remote expansion
07ZE63R302	Maximum 1 basic subrack with 5 central expansions, remote expansion
Program Memories	
07PS60R2	CMOS RAM, 3.5K instructions, RAM data memory 2K words
07PS61R2	CMOS RAM, 7.6K instructions, RAM data memory 2K words
07PS62R2	CMOS RAM, 15.7K instructions, RAM data memory 16K words
07PS63R2	CMOS RAM, 48.5K instructions, RAM data memory 50K words
07PR62R2	EPROM RAM, 15.7K instructions, RAM data memory 16K words
07PR63R2	EPROM RAM, 48.5K instructions, RAM data memory 50K words
07PS61R3	CMOS RAM 7.6K instructions, 2K data, on-line program

CATALOG NUMBER	DESCRIPTION
07PS62R3	CMOS RAM 15.7K instructions, 16K data, on-line program
07PS63R3	CMOS RAM 48.5K instructions, 50K data, on-line program
I/O Expansions and Couplers	
07BV60R1	Bus connector for central I/O expansion
07BR60R1	Remote I/O coupler for TRIAX cable, 512 I/O points maximum
07BR60R2	Remote I/O coupler for fiber-optic cable, 512 I/O points maximum
07BR61R1	Remote I/O coupler for TRIAX cable, expansion subrack
07BR61 R2	Remote I/O coupler for fiber-optic cable, expansion subrack
07ZB60R1	Coupler for TRIAX cable to ABB Procontic field bus ZB10
07ZB60R2	Coupler for TWINAX cable to ABB Procontic field bus ZB10
07ZB69R1	Coupler for TRIAX cable to ABB Procontic field bus ZB20
07ZB69R2	Coupler for TWINAX cable to ABB Procontic field bus ZB20
07CS61R202	Remote I/O coupler to connect CS31 to T200
Binary Input Modules	
07EB60R1	24VDC/24VAC, 16 inputs
07EB61R1	24VDC/24VAC, 32 inputs
07EB62R1	24VDC, High speed, 32 inputs
07EB63R1	48VDC/48VAC, 16 inputs
07EB64R1	48VDC/48VAC, 32 inputs
07EB66R1	110VAC, 16 inputs
07EB67R1	220VAC, 16 inputs
07EB68R1	110VAC, 32 inputs
Analog Input Modules	
07EA60R1	0-10VDC, 8 bits, 8 channels
07EA61R1	4-20mA, 8 bits, 8 channels
07EA62R1	-10...+10VDC, 12 bits, 8 channels
07EA63R1	4-20mA, 12 bits, 8 channels
07EA64R1	0-20mA, 8 bits, 8 channels
07EA65R1	0-20mA, 12 bits, 8 channels
07EA66R1	-50°...+400°C, RTD, 13 bits, 8 channels

Configuration Guide

CATALOG NUMBER	DESCRIPTION
07EA67R1	0°...1600°C, Thermocouple, 13 bits, 8 channels
Binary Output Modules	
07AB60R1	Transistor, 24VDC/48VDC, 2A, 16 outputs
07AB61R1	Transistor, 24VDC/48VDC, 500mA, 32 outputs
07AB62R1	Transistor, 24VDC, 2A, 16 outputs
07AB63R1	Transistor, 24VDC, 500mA, 32 outputs
07AB67R1	Relay, 220VAC/24VDC, 16 outputs
07AB69R1	110VAC, 32 outputs
Analog Output Modules	
07AA60R1	0-10VDC, 8 bits, 4 channels
07AA61R1	4-20mA, 8 bits, 4 channels
07AA62R1	-10...+10VDC, 12 bits, 4 channels
07AA63R1	4-20mA, 12 bits, 4 channels
Special Input Modules	
07EI60R1	Interrupt input module, 24VDC, 16 interrupt channels
07ZG60R1	High speed counter, 50kHz, 1 channel up, 1 channel down
Communication Modules	
07KP60R101	Intelligent serial interface module for RS-232 and RS-422
07KP62R101	ASCII, 2 interfaces for RS-232C
07KP64R101	RCOM, 2 interfaces for RS-232C
07KT60R101	Text processor, interface for RS-422 or RS-423 (RS-232C)
Preprocessors Modules	
07IR60R101	Industrial computer BASIC
07PO61R1	One-axis positioning unit
Software	
907PC33	General Part, program documentation
907PC332	T200 programming system
907PC326	Special programming software for safety modules
907IR60R102	Industrial computer BASIC software
907KP64R102	Communication software for RCOM
935AM50PC	One-axis positioning software

CATALOG NUMBER	DESCRIPTION
System Cables	
07SV60R1	Central I/O exp. connecting central unit and exp. rack (1.64 ft)
07SV60R2	Central I/O exp. connecting central unit and exp. rack (3.2 ft)
07SV61R1	Central I/O exp. connecting two 07BV60s (1.64 ft)
07SV61R2	Central I/O exp. connecting two 07BV60s (3.2 ft)
07SZ60R1	Extension cable to connect an I/O module to its front panel
07SK60R2	Central unit serial interface to a hand-held program unit (6.4 ft)
07SK60R5	Central unit serial interface to a hand-held program unit (16.4 ft)
07SK61R1	Central unit to IBM/AT programming unit, 25 pin female to 15 pin male
07SK62R1	Central unit to IBM/AT programming unit, 9 pin female to 15 pin male
07SK63R1	Serial interface for connection of the industrial computer BASIC
07SK64R1	Serial interface for connection of the text processor - 07KT60
07SK65R1	Serial interface for connection of the positioning unit - 07PO60
07SK66R1	Serial interface for connection between two positioning units, for connection between electronic switch and control logic - 35US50
07SK67R1	Serial interface for connection between text processor and printer
07SK68R1	Serial interface for connection between text processor and operator interface - 35BS40
07LK60R1	Fiber-optic cables for direct connection between couplers (07BR60/61R2, 07ZB69R2)
07LK61R1	Fiber-optic cables for connection between couplers (07BR60/61R2, 07ZB69R2) to an external optical fiber
07LV60R1	Fiber-optic coupling device for cable to cable connection and test and measurement procedures

CATALOG NUMBER	DESCRIPTION
Accessories	
07PR67R1	EPROM set for program 07PR62R1
07PR68R1	EPROM set for program 07PR63R1
07LB60R1	Replacement lithium battery
07LE60R1	Lithium battery module
07BA60R1	Dummy module for empty I/O slots
07FS50R1	Replacement fuse, 5A, for module 07AB61
07FS75R2	Replacement fuse, 7.5A, for module 07AB60
07KY00R1	Spare key for central units



Operator Interface

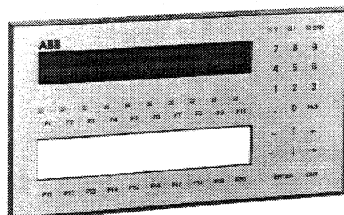
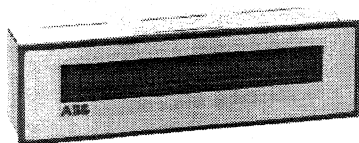
ABB offers a range of operator interface products from a 1 line message display to an IBM/AT compatible computer with software available for on screen graphics to easily visualize and control the process. These operator interfaces are designed to withstand the industrial environment with features such as keypads rated IP 65 protection.

Text Display

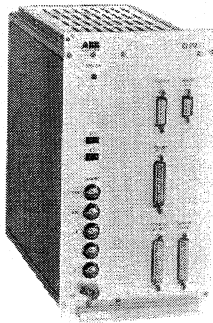
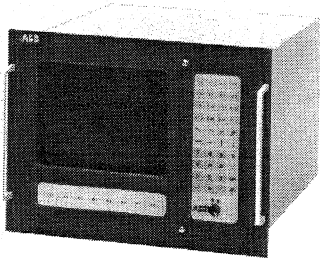
- The 35TA10 is a one line by 40 character display used to receive information such as messages, status or diagnostics promptly to the operator in order that the proper action may be taken.

Operating Stations

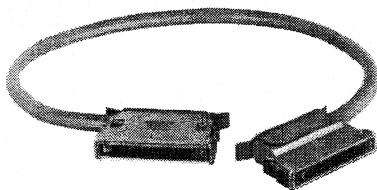
- The operator is clearly informed and instructed with the 35BS40. Information regarding machine and process status's, instructions for operating the machine or maintenance awareness are clearly displayed on this two line, 40 character display. It is also possible to enter or change parameters such as set points, timer counter values or operating modes via the keypad.
- The 35BS93 and 35BS94 are designed for applications that require the operator to monitor and control many operations from a single color screen. This is accomplished by displaying either graphic representation, variable displays, indicators or push buttons and switches.



DESCRIPTION	CATALOG NUMBER	LIST PRICE
<p>Text display</p> <p>Text display for 1 line x 40 characters, character height: 7 mm, 5 x 7 matrix, text memory with max. 400 texts, EPROM 16K (35PR10 accessories) control via process outputs, 24VDC power supply, type of protection: front panel with IP 65 and a seal, including documentation.</p>	35TA10	\$ 1690
<p>Operating stations</p> <p>Operating station with a fluorescent display, 2 lines x 40 characters, character height: 7 mm, 5 x 7 matrix, 20 function keys, 8 control keys, numerical keys, text memory with max. 999 texts, RAM: 32K, battery-backed, optional program memory for 35PR41/42, 1 serial interface, 24VDC power supply, type of protection: front panel IP 65, including documentation</p>	35BS40R1	2620
<p>Operating station with a 12" color monitor and an integrated graphics module for displaying pictures with values (numbers, symbols), process operation via the machine keyboard with 40 keys, 8 soft keys, storing the project data on the unit, 1 serial interface to connect ABB Procontic b, CS31, T300 in the passive mode and ABB Procontic T200, T300 in the active mode, installation in a 19" standard cabinet, 8 height modules, 15.9 in. deep, 220VAC supply voltage.</p> <p>Type of protection: front panel and membrane, IP 65.</p>	35BS93R3	16,130

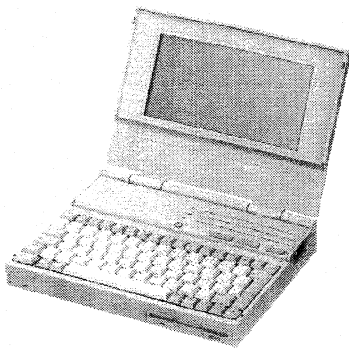


DESCRIPTION	CATALOG NUMBER	LIST PRICE
Operating station with a 12" color monitor and a video interface for RGB, machine keyboard with 40 keys, 8 soft keys and a serial interface to connect 07PM11, installation in a 19" standard cabinet, 8 height modules, 15.9 in. deep, 220VAC power supply. Type of protection: front panel and membrane, IP 65	35BS94R1	\$ 13,670
Process graphic module Process graphic module with 3 serial interfaces for the keyboard, printer and target system, video interface for the RGB, BAS, PC, monitor (TTL), graphics display, operation via a keyboard, which can be connected, output of data logging in the active mode, storing project data on the unit, connection to ABB Procontic b, CS31, T300 in the passive mode and to ABB Procontic T200, T300 in the active mode construction: separate housing, 24VDC supply voltage.	07PM11	6130
Process Graphics Software Graphic Software Configurator Picture configurator to compile the entire project data (pictures, data logging) for 07PM11 and 35BS93, the software can be run on 07PM11 or 35BS93. Picture PROM compilation via an external PROM programmer 07PP31/32, including documentation Software for the process display and control with flow diagrams, trend pictures, records and archives, the graphics configurator and symbol library are integrated, can be run on 35BS95 and IBM PC/AT with the MS-DOS operating system, driver to connect the ABB Procontic T200 and to ABB Procontic field bus ZB10 A serial interface card for the 35BS95 or PC is required, including documentation Communication module for 935PM73	935BK70R402 935PM73R202 35CM73R1	5980 10,320 10,320

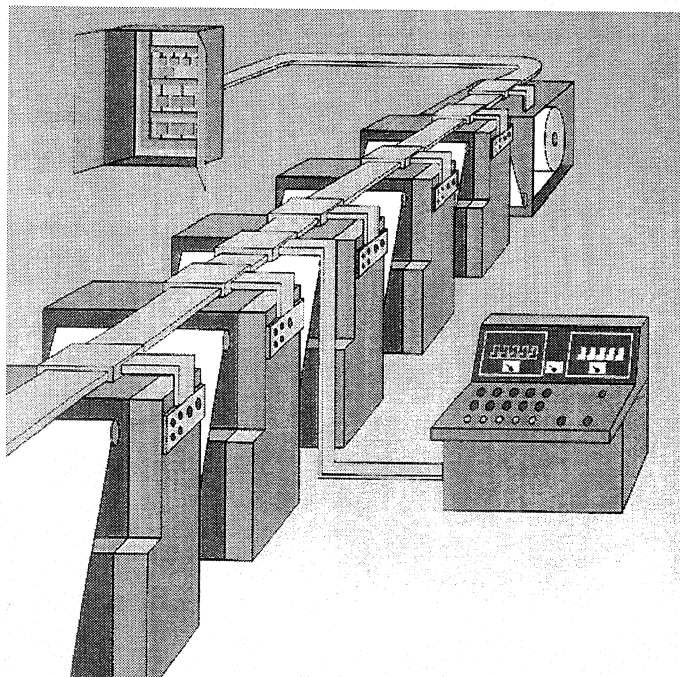


DESCRIPTION	CATALOG NUMBER	LIST PRICE
Editors		
Editor for 35TA10, can be run on 07PC31/32, IBM PC/AT, including documentation	935TA10R102	620
Editor for 35BS40, can be run on 07PC31/32, IBM PC/AT, including documentation	935BS40R102	930
System cables		
Cable to connect the 35BS94 to 07PM11, Cable length: 19.7 feet (6m)	07SK24R1	350
Cable to connect 07PC31/32 and 35BS93, 07PM11 and 07PM11 keyboard with 35BS94 keyboard and 35BS95 with 07ZV86, Cable length: 16.4 feet (5m)	35SK94R2	230
Type 35SK10 System cable for 35TA10 to connect the process outputs Cable length: 6.6 feet (2m) Cable length: 13.1 feet (4m) Cable length: 19.7 feet (6m) Cable length: 26.2 feet (8m)	35SK10R1 35SK10R2 35SK10R3 35SK10R4	\$ 130 170 210 230
System cable to connect 35BS40 and IBM PC/AT Cable length: 9.8 feet (3m)	35SK40R1	150
System cable to connect 35BS40 and 07PC31/32 Cable length: 9.8 feet (3m)	35SK41R1	150
Cable to connect 35BS40 with 07SK88 to Procontic b, with cable FPTN48R5 to Procontic CS31 (UCZA), with 07SK91 to Procontic CS31 (07KR91, 07KT92) and Procontic T200 (07KP62) Cable length: 6.6 feet (2m)	35SK42R1	100

DESCRIPTION	CATALOG NUMBER	LIST PRICE
Accessories		
Type 35PR10 Program memory, EPROM for 35TA10	35PR10	\$ 40
Type 35PR41 Program memory, EPROM for 35BS40	35PR41	300
Type 35PR42 Program memory, EEPROM for 35BS40	35PR42	620
Type – Mounting bracket Wall mounting for 07PM11	07MB01R1	130
Documentation		
ABB Procontic process display and control text display 35TA10R1 System description of the hardware	DOC35TA10R1	40
ABB Procontic process display and control Operating station 35BS40R1 System description of the hardware	DOC35BS40R1	40
ABB Procontic process display and control Process-graphics module 07PM11R2, System description of the hardware	DOC07PM11R2	100
ABB Procontic process display and control Operating station 35BS93R3 System description of the hardware	DOC35BS93R3	100
ABB Procontic process display and control Operating station 35BS94, System description of the hardware	DOC35BS94	100



DESCRIPTION	CATALOG NUMBER	LIST PRICE
ABB Procontic process display and control Software for 07PM11 and 35BS93, system description	DOC35BS93	\$ 150
ABB Procontic process display and control Operating station 35BS95, System description of the hardware	DOC35BS95	100
Personal Computer Portable, 80386 SL processor, 4K RAM main memory 84 Mbyte hard disc, 1.44 Mbyte 3,5" disc drive, 2 serial interfaces, 1 parallel interface, MS-DOS operating system V5.0, VGA screen 9,5", VGA interface, connection for an external bulk storage unit, keyboard with 80 keys, mouse for a fast cursor movement, battery operation, power supply unit, 9-pole to 25-pole adapter, without programming software	07PH32R2	21,350



Procontic Communication Networks

ABB Procontic field bus ZB10

With the ABB Procontic field bus ZB10 it is possible to build up a network between the PLCs ABB Procontic b, ABB Procontic T200 and ABB Procontic T300. The 07ZV86 central bus manager has a serial interface for connection to computers.

ABB Procontic field bus ZB20

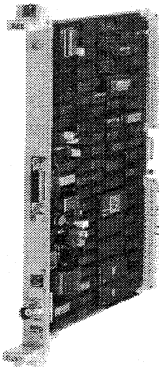
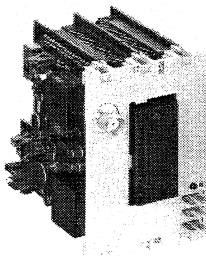
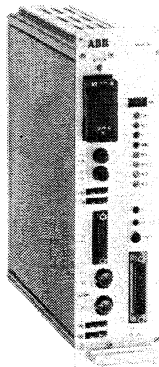
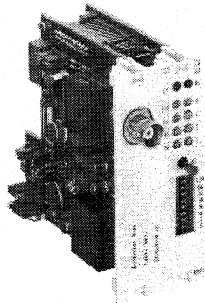
With the ABB Procontic field bus ZB20 it is possible to build up a network between several T200 PLCs. The transmission cables can be of TRIAX or optical fiber type. The bus allows access for the user from any station to other stations connected to the network.

ABB Procontic field bus ZB50

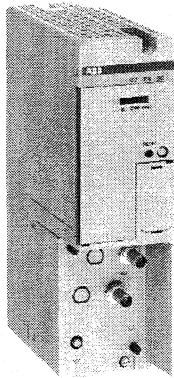
ABB Procontic field bus type ZB50 meets the requirements of the PROFIBUS standard and enables the open communication via standardized interfaces and protocols. It connects ABB Procontic T200 and ABB Procontic T300 via a network.

Communications Software

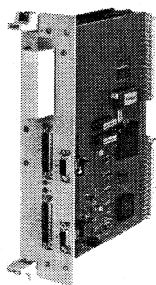
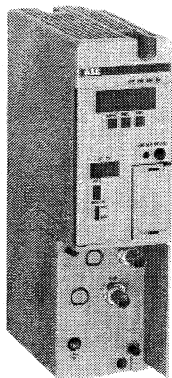
ABB communications software enables dial up networks both leased and dedicated lines.



DESCRIPTION	CATALOG NUMBER	LIST PRICE
ZB10 Network Controller ZB10 Bus controller Mini bus controller for a COAX or TRIAX connection Construction: ABB Procontic b, 2 slots	07ZV80R101	\$1570
Standard bus controller for a COAX, TRIAX or TWINAX connection, 1 serial interface, Construction: separate housing	07V86R1012	5710
ZB10 Couplers ABB Procontic b I/O coupler for a COAX or TRIAX connection. Construction: ABB Procontic b, 3 slot	07ZB80R2	2190
ABB Procontic b coupler for a COAX or TRIAX connection. Construction: ABB Procontic b, 5 slots	07ZB82R2	2890
ABB Procontic T300 coupler for a COAX, TRIAX or TWINAX connection. Construction: ABB Procontic T300, 1 slot	35ZB91R1	4740
ABB Procontic T 200 coupler for a TRIAX-connection. Construction: ABB Procontic T200, 2 slots	07ZB60R1	2780
ABB Procontic T200 coupler for a TWINAX connection. Construction: ABB Procontic T200 2 slots	07ZB60R2	2780



DESCRIPTION	CATALOG NUMBER	LIST PRICE
ZB10 Analog bit converter Analog bit converter Construction: ABB Procontic b 2 slots	07ZB81R1	\$ 560
ZB10 Programming Programming and diagnosis software for the ABB Procontic field bus ZB10, in connection with the above-mentioned couplers. The software can be run on 07PC31/32, including documentation	930PC30R202	4320
ZB10 Program memory Program memory 07ZB80 (1x) 07ZB82 (2x) 07ZV86 (1x)	07PR84R1	200
ZB10 Accessories Type – Fixing angle Wall mounting for 07ZV86	07WMR1	160
ZB10 Documentation ABB Procontic field bus ZB10 Hardware, system description ABB Procontic field bus ZB10 Planning system description	DOCZB10R2001 DOCZB10PR2001	180 180



DESCRIPTION	CATALOG NUMBER	LIST PRICE
ZB20 Network		
ZB20 Couplers		
Coupler in the basic subrack to connect the ZB20 bus, TRIAX cable , 2 I/O slots	07ZB69R1	\$ 3120
Coupler in the basic subrack to connect the ZB20 bus, fiber-optic, 2 I/O slots	07ZB69R2	4870
ZB50 Network		
ZB50 Coupler		
Communication processor to couple ABB Procontic T300 with ZB50 bus, 3 slots	35KP90R101	9090
Communication Software		
Type 907IM60R0102 Communication software for communication via dial up network, documentation and examples, CE-library	907IM60R102	330
Communication software for communication via RCOM-protocol, documentation and examples, CE-library	907 KP64R102	330
Communication software for communication via RCOM-protocol for 07KP90, documentation and examples, CE-library	907KP90R102	430



These terms and conditions govern all sales and shipments of control equipment products (including parts and accessories). ABB Control Inc. hereby gives notice of its objection to any different or additional terms and conditions except for such as may be expressly accepted by it in writing.

Prices

Prices are subject to change without notice. Prices will be the prices in effect at the time of shipment by ABB Control Inc. and include freight, prepaid and allowed to first destination in the continental United States. In the event of a price change, the effective date of the change will be the date shown on the new price discount sheets. However, where a price change is made by letter or telegram, the effective date will be given as part of the announcement.

Taxes

The price does not include any Federal, state or local property, license, privilege, sales, use, excise, gross receipts or other like taxes which may now or hereafter be applicable. Payment by ABB Control Inc. of any such taxes shall be for the account of purchaser.

Standard Terms of Payment

Standard terms of payment are according to the appropriate discount schedule (AC 5000 - AC 5002).

Payment and Late Charges

ABB Control Inc. may require full or partial payment in advance if, in its sole judgement, the financial condition of the purchaser, at any time prior to delivery, does not merit the terms of payment specified.

If shipments are delayed by the purchaser or by reason of any of the causes referred to in the paragraph entitled "Excusable Delay", payments shall become due from the date when ABB Control Inc. is prepared to make shipment. Products held for the purchaser as a result of such delay shall be at the risk and expense of the purchaser.

If the purchaser fails to pay any invoice when due, ABB Control Inc. may defer deliveries under this or any other contract with purchaser, except upon prior receipt of satisfactory security for or cash in payment of any such invoice. Failure on the part of purchaser to pay invoices when due shall at the option of ABB Control Inc. constitute a default under this contract.

A service charge, the lesser of the highest rate allowed by law or 11/2% per month, or fraction thereof, for a maximum charge of 18% per annum will be charged on all overdue accounts.

Delivery

Delivery of products shall be FOB point of shipment regardless of transportation costs being "allowed", "prepaid" or collect. Where the scheduled delivery of products and parts is delayed by the purchaser or by reason of any of the causes referred to in the paragraph entitled Excusable Delay, ABB Control Inc. may deliver such products by moving them to storage for the account of and at the risk of the purchaser. Shipping dates are approximate and are based upon prompt receipt of all necessary information from purchaser. ABB Control Inc. reserves the right to make delivery in installments.

Purchaser Pick-up

No allowance will be made in lieu of transportation charges if the purchaser accepts shipment at the factory, warehouse or freight station. Transportation charges will not be deducted from the purchase price.

Origin, Method of Shipment and Routing

ABB Control Inc. shall determine the point of origin of shipment, the method of transportation and the routing of shipment. Costs for shipment by means requested by purchaser different from

ABB Control Inc.'s standard means of shipment are invoiced to the purchaser as a separate charge.

Freight charges will be added to the price of any order under \$100.

Excusable Delay

ABB Control Inc. shall not be liable for loss, damage, detention or delay, nor be deemed to be in default from causes beyond its reasonable control, including without limitation, fire, flood, strike or other labor difficulty, act or omission of any governmental authority or of the purchaser, insurrection or riot, embargo, delays or shortage in transportation or inability to obtain necessary labor, materials or manufacturing facilities from usual sources.

In the event of delay in performance due to any such cause, the date of delivery will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

Warranty

ABB Control Inc. warrants that that on date of shipment to purchaser, the goods will be the kind and quality described herein, merchantable and free of defects in workmanship and material.

If within one year from date of initial operation, but not more than eighteen months from date of shipment, should any failure to conform with this warranty appear within such time, ABB Control Inc. shall, if given prompt notice by purchaser, correct such nonconformity, at its option, either by repair or replacement F.O.B. repair facility or by refund of the purchase price of the nonconforming product or part. Return of products to ABB Control Inc. pursuant to this paragraph shall be at purchaser's risk and expense. *The foregoing warranty is exclusive and in lieu of all other warranties of quality, expressed or implied, and all other warranties, including any warranty of merchantability or fitness for a particular purpose are hereby disclaimed.*

Correction of nonconformities in the manner and for the period of time provided above shall be purchaser's exclusive remedy and shall constitute fulfillment of all liabilities of ABB Control Inc. whether in warranty, strict liability, contract, negligence, tort or otherwise with respect to any nonconformance or defect in the product.

The foregoing warranty shall not apply to any product which has been: a) improperly repaired or altered, b) subjected to misuse, misapplication, negligence or accident, c) used in a manner contrary to manufacturer's directions.

Limitation of Liability

ABB Control Inc.'s liability to purchaser on any claim in connection with the product shall not exceed the purchase price of the product which gives rise to the claim.

IN NO EVENT SHALL ABB CONTROL INC. BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES whether in warranty, contract, strict liability, tort, negligence or otherwise including but not limited to loss of profits or revenue, loss of use of the product or any associated product, cost of capital, cost of substitute products, facilities or services, downtime costs or claims of customers of the purchaser for such or other damages.

Except as prohibited by law, all causes of action against ABB Control Inc. shall expire unless brought within one year of the time of accrual thereof. **ABB CONTROL INC. NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME FOR IT ANY OTHER OR FURTHER LIABILITY THAN AS SET OUT ABOVE.**

PATENT INDEMNITY

ABB Control Inc. will at its own expense defend any suit which may be brought against the Purchaser based on a claim that any

Terms & Conditions

apparatus or part furnished under contract constitutes an infringement of any United States letter patent (provided ABB Control Inc. is notified promptly of such suit and copies of all papers therein are delivered to ABB Control Inc.), and ABB Control Inc. agrees to pay all judgments and costs recovered in any such suit and to reimburse the Purchaser for costs of expenses incurred in the defense of any such claim or suit. In case said apparatus or any part is held to constitute infringement and the use of the apparatus or part is enjoined, ABB Control Inc. shall at its own expense, either procure for the Purchaser the right to continue using the apparatus or part or replace it with non-infringing apparatus; or modify it so it becomes non-infringing, or remove the apparatus and refund the purchase price and the transportation and installation cost thereof. The foregoing states the entire liability of ABB Control Inc. for patent infringement by apparatus or any part thereof.

SHIPPING LOSS OR DAMAGE

In the event of shipping loss or damage: 1) Notification must be given to ABB Control Inc. within 72 hours of delivery; 2) Written notice of apparent loss or damage must be made on the carrier's delivery receipt; and 3) Concealed damage must be immediately reported to the delivering carrier with a request for inspection. Purchaser shall comply with the foregoing procedure whether or not ABB Control Inc. has the risk of loss at the point of loss or damage to the shipment.

TITLE -- RISK OF LOSS

The products sold hereunder shall remain the property of ABB Control Inc. and shall remain personal property until fully paid for in cash, and purchaser agrees, if requested by ABB Control Inc. to execute a further security agreement covering the products sold, and to perform all acts which may be necessary to perfect and assure retention of title to such products by ABB Control Inc. Notwithstanding any agreement with respect to delivery terms, risk of loss or damage shall pass to the purchaser and delivery shall be deemed to be complete upon delivery to a private or common carrier or upon moving into storage, whichever occurs first, at the point of shipment.

TERMINATION

Any order or contract may be terminated by the purchaser only on written notice and upon payment of reasonable and proper termination charges, including without limitation, all costs identified to the order of contract incurred by ABB Control Inc. up to the date of notice of termination and all charges incurred by ABB Control Inc. in respect of the termination.

RETURNS

In no event will ABB Control Inc. be responsible for unauthorized return of products. Returns will be accepted only at ABB Control Inc.'s option and subject to terms specified by ABB Control Inc. Authorization and shipping instructions for return of products must be obtained from ABB Control Inc. prior to return shipment. Product must be returned with proper identification. When a purchaser requests authorization to return for his own reasons, the return is subject to a minimum restocking charge of 20% for standard inventoried product and for any transportation paid by ABB Control Inc., both out and ingoing. Returns will be accepted up to 60 days after invoice date.

Goods returned for purchaser's reason are subject to inspection and must be in good working condition, as new, and in original cartons.

PURCHASE ORDERS

Except as provided below, all orders must be in writing and show quantities and prices, complete description (including catalog numbers) of products requested and mutually agreed delivery dates.

Verbal orders received via telephone or otherwise must be confirmed within 5 days either by mail, telex or the equivalent. Verbal orders with a purchase price over \$5,000 will not be processed until such written confirmation is received.

Unless otherwise agreed in writing, an addition to a previously entered order will be accepted only at then applicable prices, discount schedules, conditions of sale, etc.

SPECIAL QUOTATIONS

Special quotations will automatically expire 30 days from issuance unless renewed in writing by ABB Control Inc.

ASSIGNMENT

Any assignment of this contract, or any rights hereunder, without prior written consent of ABB Control Inc. by a duly authorized representative thereof shall be void.

PARTIAL INVALIDITY

If any provisions herein or portions thereof conflict with any statute or rule of law of the jurisdiction of applicable law or wherein the contract may be sought to be enforced, then such provisions or portions thereof shall be deemed void to the extent that they may so conflict, but without invalidating the remaining portions of such provisions or other provisions hereof.

REMEDIES

The remedies expressly provided for in the Conditions of Sale shall be in addition to any other remedies which ABB Control Inc. may have under the Uniform Commercial Code or other applicable law.

CHOICE OF LAW

The construction and performance of this contract and the rights and remedies of the parties hereto shall be governed by the laws of the State of Texas.

DIMENSIONS, WEIGHTS AND RATINGS

Dimensions, weights and ratings given in this catalog are approximate. All listed product specifications and ratings are subject to change without notice. Photographs show current production units.

PRICES AND DISCOUNTS

All prices and discounts are subject to change without notice. All orders accepted by ABB Control Inc. are subject to the general terms and conditions as stated above and in AC 5020, Terms and Conditions.



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AC 1100
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