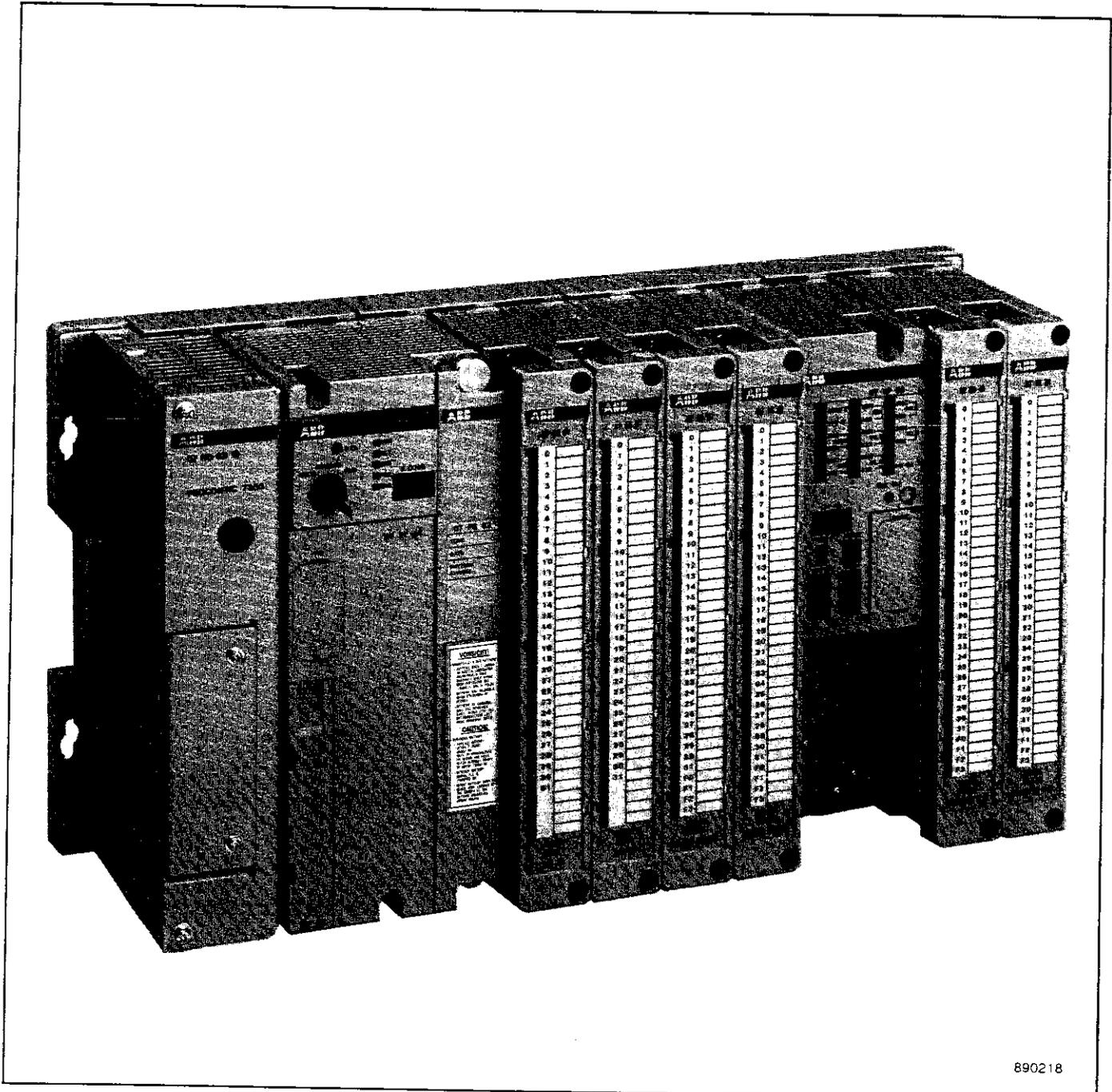


General Part

Order No.
GATS 1314 99 R2001



890218

Regulations Concerning the Setting up of Installations

Apart from the basic "Regulations for the Setting up of Power Installations" DIN VDE* 0100 and for "The Rating of Creepage Distances and Clearances" DIN VDE 0110 Part 1 and Part 2 the regulations "The Equipment of Power Installations with Electrical Components" DIN VDE 0160 in conjunction with DIN VDE 0660 Part 500 have to be taken into due consideration.

Further attention has to be paid to DIN VDE 0113 Part 1 and Part 200 in case of the control of working and processing machines. If operating elements are to be mounted near parts with dangerous contact voltage DIN VDE 0106 Part 100 is additionally relevant.

If the protection against direct contact according to DIN VDE 0160 is required, this has to be ensured by the user (e.g. by incorporating the elements in a switch-gear cabinet). The devices are designed for pollution severity 2 in accordance with DIN VDE 0110 Part 1. If higher pollution is expected, the devices must be installed in appropriate housings.

The user has to guarantee that the devices and the components belonging to them are mounted following these regulations. For operating the machines and installations, other national and international relevant regulations, concerning prevention of accidents and using technical working means, also have to be met.

The ABB Procontic devices are designed according to IEC 1131 Part 2. Meeting this regulation, they are classified in overvoltage category II which is in conformance with DIN VDE 0110 Part 2.

For the direct connection of ABB Procontic devices, which are powered with or coupled to AC line voltages of overvoltage category III, appropriate protection measures corresponding to overvoltage category II according to IEC-Report 664/1980 and DIN VDE 0110 Part 1 are to install.

Equivalent standards:

DIN VDE 0110 Part 1 \cong IEC 664

DIN VDE 0113 Part 1 \cong EN 60204 Part 1

DIN VDE 0660 Part 500 \cong EN 60439-1 \cong IEC 439-1

All rights reserved to change design, size, weight, etc.

* VDE stands for "Association of German Electrical Engineers".

ABB Schalt- und Steuerungstechnik GmbH Heidelberg

Table of Contents

1	General system description	1- 1
2	Technical system data	2- 1
3	Assortment overview	3- 1
	Assortment overview	3- 2
	Configuration table	3- 3
4	Information on ordering	4- 1
5	Customer training	5- 1
6	Maintenance service and support ...	6- 1
7	Applications department	7- 1
8	Customer support and addresses ...	8- 1
D	Definitions	D- 1

1 General System Description

As a member of the ABB Procontic family, ABB Procontic T200 is a modular programmable control system which has been developed and manufactured using advanced design principles and production methods. ABB Procontic T200 masters a wide range of automation tasks at the lower and medium performance levels from 16 to 1856 inputs/outputs and is used for a great variety of applications such as

- Open-loop control
- Computing
- Closed-loop control
- Communication
- Operating and monitoring
- Event indication, measuring and logging
- Positioning

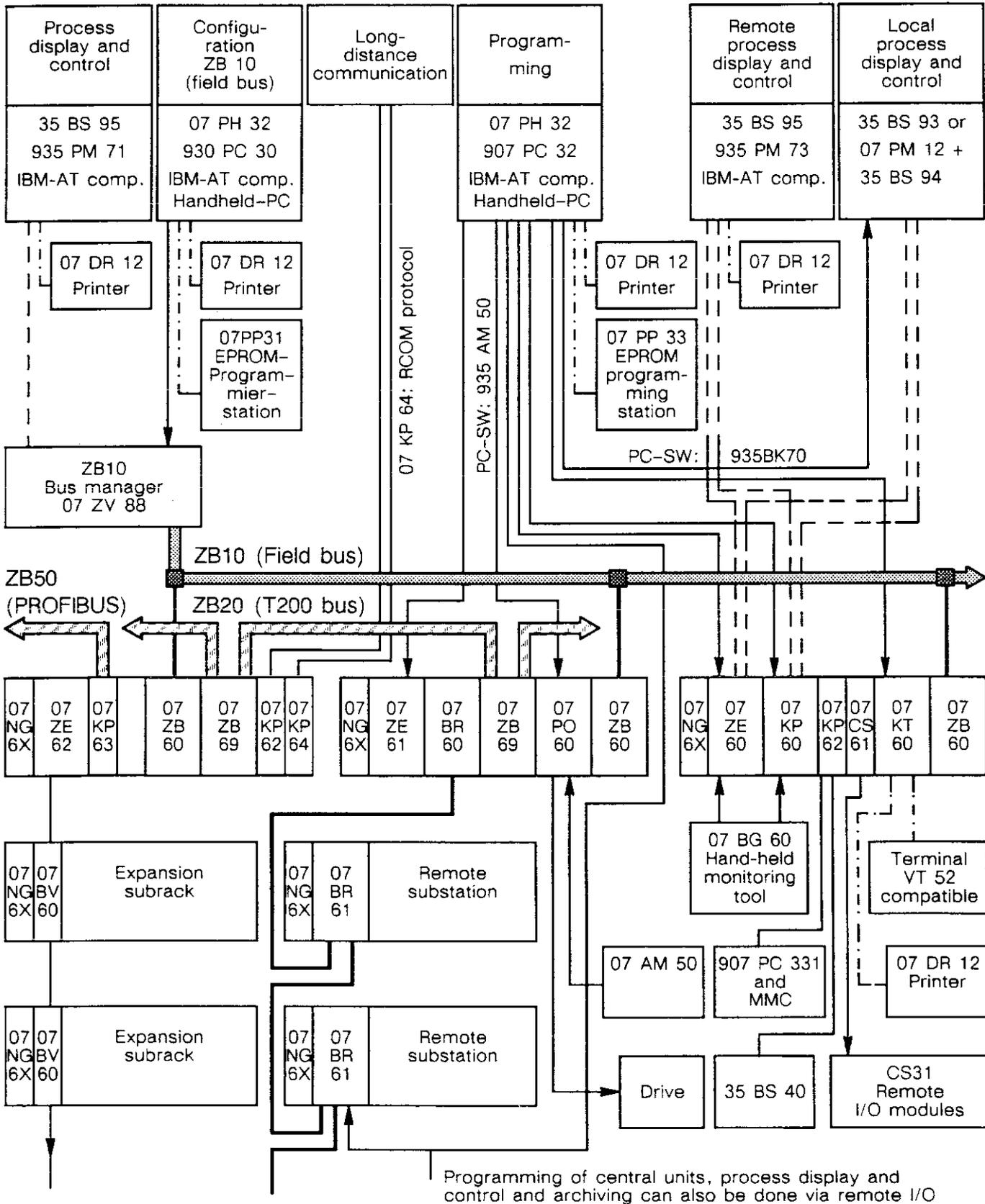
Because of its sturdy modular design ABB Procontic T200 can readily be used even under onerous industrial conditions.

ABB Procontic T200 is characterized by a compact design. Terminal blocks and electronic components are protected by enclosures.

By the adoption of modern gate-array technology and the provision of optimized configuration capabilities the user gets a powerful automation system with the following features:

- Ease of handling
- Simple construction and wiring
- Fast processing
- Adaptable to several input and output voltages
- Appropriate modularity (I/O modules with 4, 8, 16 and 32 channels)
- Provision for clear labeling
- Ease of servicing due to comprehensive diagnostics and error monitoring
- Simple communication also with alien systems by using a standard protocol
- Powerful preprocessors relieve the central unit of tasks such as positioning, communication, logging and visualization.
- Efficient programming by powerful commands, user-friendly structuring with standardized functions (function program blocks)
- Reliable and field-tested programming software allows programming in the form of function block diagram (FBD), ladder diagram (LD), instruction list (IL) and sequential function chart (SFC).

ABB Procontic T200, Configuration of the Entire System



5 expansion subracks maximum

max. 10 substations per line;
max. 4 lines per central unit

2 Technical System Data

The relevant product standard for the ABB Procontic T200 control system is EN 61131-2 \cong IEC 1131-2.

Operating and environmental conditions

Voltages

Process voltages UP

UP1 (incl. ripple)	or	24 V DC (+ 25 %, - 20 %)
UP3		48 V DC (+ 25 %, - 20 %)
UP5		12 V DC (\pm 10 %)
	or	120 V AC (+ 10 %, - 15 %)
UP7		230 V AC (+ 10 %, - 15 %)
UP8		24 V AC
		48 V AC

Ripple	U_{pp}	UP1 = 24 V DC	< 4 V
		UP1 = 48 V DC	< 8 V

Reference potential ZP

ZP 0 V for process voltage UP

Line voltages UN

UN1	230 V AC (+ 10 %, - 15 %)
UN2	120 V AC (+ 10 %, - 15 %)

Internal voltages UB

UB1	5 V DC
UB4	24 V DC

Reference potential ZB

ZB 0 V for internal voltages UB

Temperature

operation	0 °C ... + 55 °C
storage	- 25 °C ... + 75 °C
transport	- 25 °C ... + 75 °C

Humidity

5...95 %, without condensation

Air pressure

operation	\geq 800 hPa/ \leq 2000 m
storage	\geq 660 hPa/ \leq 3500 m

Creepage distances and clearances

The creepage distances and clearances meet

Overvoltage category II, pollution degree 2

Insulation test voltages

230 V circuits (mains, 230 V inputs/outputs) against other circuitry	2500 V
120 V circuits (mains) against other circuitry	1500 V
24 V circuits (supply, 24 V inputs/outputs), if electrically isolated against other circuitry	500 V
bus against other circuitry	500 V

Electromagnetic compatibility

- Immunity
against electrostatic discharge (ESD) according to EN 61000-4-2
 - electrostatic voltage in case of air discharge 8 kV
 - electrostatic voltage in case of contact discharge 6 kV
- Immunity against
the influence of radiated interference (CW radiated) according to ENV 50140
 - test field strength 10 V/m
- Immunity
against transient interference voltages (burst) according to EN 61000-4-4
 - supply voltage units (AC/DC) 2 kV
 - binary inputs/outputs (24 V DC) 1 kV
 - binary inputs/outputs (120/230 V AC) 2 kV
 - analog inputs/outputs 1 kV
 - CS31 system bus 2 kV
- Immunity against the influence
line-conducted interferences (CW conducted) according to ENV 50141
 - test voltage 10 V
- Radio disturbance according to EN 55011 radio interference level A *) and
according to EN 55022 radio interference level A *) (only
for communication modules)

*) If the power supply unit 07 NG 66 R1 is to be used, an EMC filter (FN 680-2,5/06 made by Schaffner or equivalent) must be used in order to meet the radio interference level A.

Mechanical data

Conductor cross section of process terminals

power supplies	L1, N	max. 1.5 mm ²
	PE	max. 2.5 mm ²
I/O modules		max. 1.5 mm ²
subbracks, ground terminals		max. 6.0 mm ²

Degree of protection IP 20

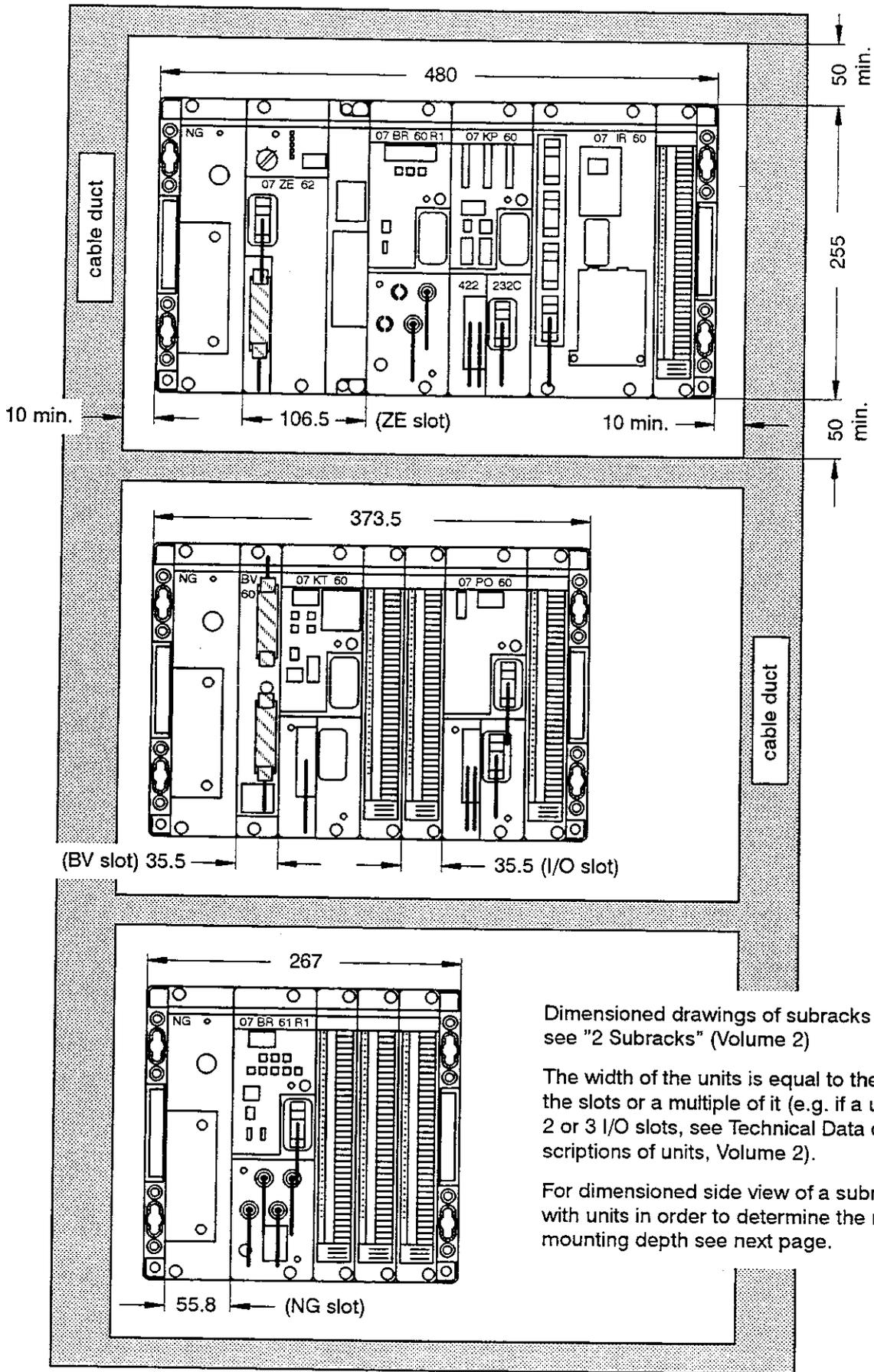
Vibration resistance

all three axes		
10 Hz...57 Hz	continuous	0.0375 mm
	peak	0.075 mm
57 Hz...150 Hz	continuous	0.5 g
	peak	1.0 g

Shock test

all three axes
15 g, 11 ms, half-sinusoidal

Mechanical data, mounting dimensions



Dimensioned drawings of subracks in detail see "2 Subracks" (Volume 2)

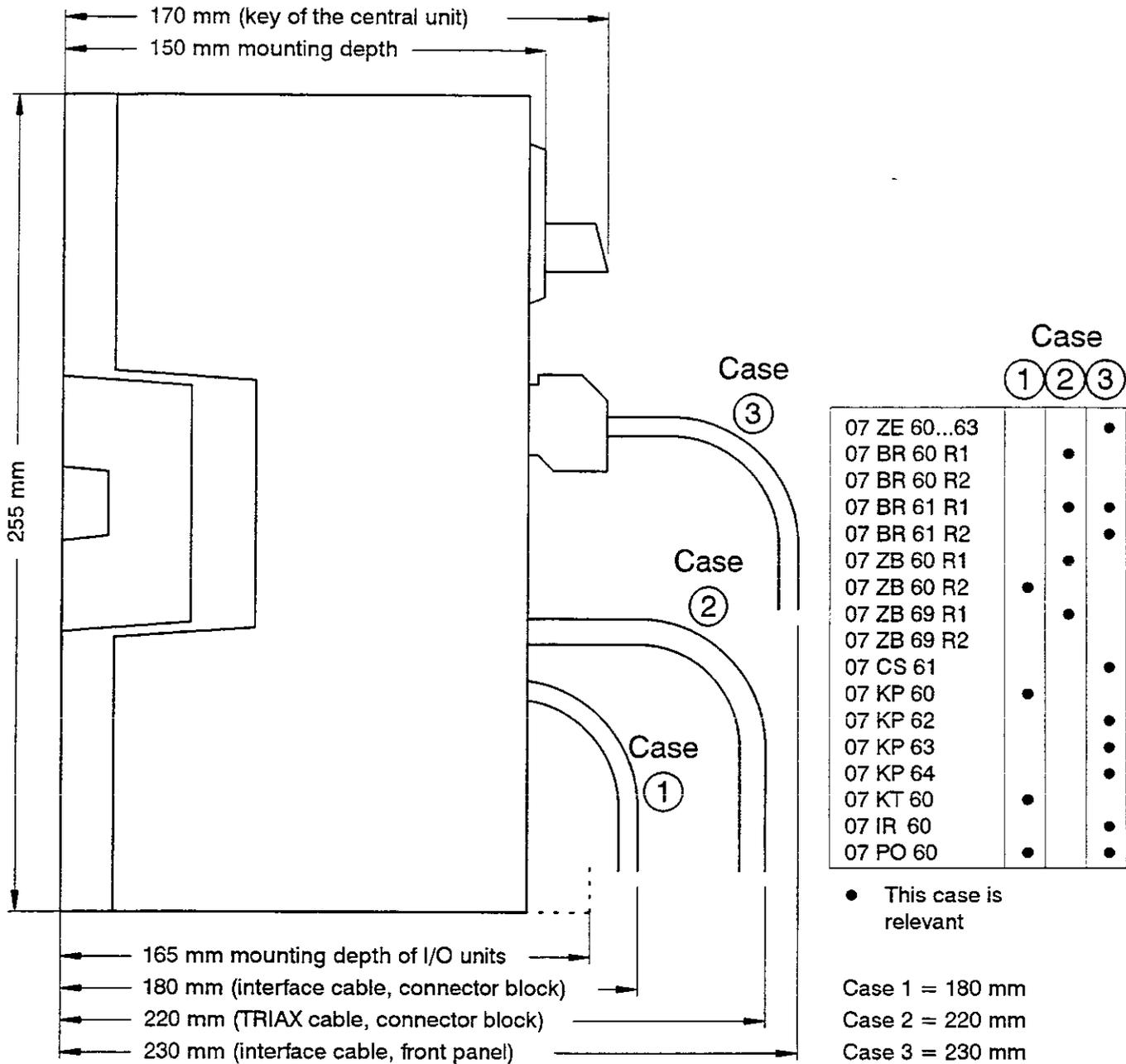
The width of the units is equal to the width of the slots or a multiple of it (e.g. if a unit needs 2 or 3 I/O slots, see Technical Data of the descriptions of units, Volume 2).

For dimensioned side view of a subrack fitted with units in order to determine the necessary mounting depth see next page.

Fig. 2.1: Mounting dimensions of ABB Procontic T200

All dimensions in mm

Mechanical data, determination of mounting depth



The connection of optical fibres as well as the use of system cables 07 SV 60 and 07 SV 61 for central expansion do not influence the mounting depth.

Width of slots or units respectively:

Power supply slot	NG	55.8 mm
Central unit slot	ZE	106.5 mm
Bus connector slot	BV	35.5 mm
I/O module slot	I/O	35.5 mm

Fig. 2.2: Side view of a subrack fitted with units, determination of mounting depth

3 Assortment Overview

Assortment overview
Configuration table

Assortment Overview

Configuring your application the following table can help you to take an overview of the total requirement as well as to prepare an order list.

You find more detailed information about the assortment on the following pages.

Configuring Table (see next page)

Explanations for Using of the Table

1. Make copies of the configuring table.
2. Take the first configuring sheet and fill in all modules and units (accept central units and coupler) used in your application (quantity and type).
3. Enter the occupied I/O points in column "Σ I/O points" and sum them up below. This helps you to select the appropriate central unit(s).

4. Decide depending on type and quantity of modules and units whether a basic subrack is sufficient or a central or remote I/O expansion is required or several central stations connected via bus system are necessary.

5. Create the total configuration, select central unit(s), coupler and communication units as well as quantity and type of subracks.

6. Use for each subrack a separate configuring table. Enter all modules and units into both the drawing(s) of the subrack and the table(s).

7. In each table:
 - Fill in the current consumptions of 5 V and 24 V and sum them up.
 - Depending on the total current consumption select the appropriate power supply unit.

Quantity	Type	Order No.	Quantity	Type	Order No.	Quantity	Type	Order No.
07	BT 60 R1	GJV3074301R1	07	PR 62 R2	GJV3074336R2	07	KT 60	GJV3074381
07	BT 61 R1	GJV3074302R1	07	PR 63 R2	GJV3074337R2		R101	R101
07	BT 62 R1	GJV3074303R1	07	EB 60 R1	GJV3074340R1	07	I R 60	GJV3074385
07	BE 60 R1	GJV3074304R1	07	EB 61 R1	GJV3074341R1		R101	R101
07	BE 61 R1	GJV3074305R1	07	EB 62 R1	GJV3074342R1	07	PO 60	GJR5240000
07	BE 62 R1	GJV3074306R1	07	EB 63 R1	GJV3074343R1		R201	R201
07	BE 69 R1	GJV3074309R1	07	EB 64 R1	GJV3074344R1	07	UD 60 R1	GJV3074384R1
07	NG 60 R1	GJV3074310R1	07	EB 66 R1	GJV3074346R1	07	SV 60 R1	GJV3074371R1
07	NG 61 R1	GJV3074311R1	07	EB 67 R1	GJV3074347R1	07	SV 60 R2	GJV3074371R2
07	NG 63 R1	GJV3074313R1	07	EA 60 R1	GJV3074350R1	07	SV 61 R1	GJV3074372R1
07	NG 66 R1	GJV3074315R1	07	EA 61 R1	GJV3074351R1	07	SV 61 R2	GJV3074372R2
07	NG 68 R1	GJV3074317R1	07	EA 62 R1	GJV3074352R1	07	SZ 60 R1	GJV3074398R1
07	BV 60 R1	GJV3074370R1	07	EA 63 R1	GJV3074353R1	07	SK 60 R2	GJV3074329R2
07	BR 60 R1	GJV3074375R1	07	EA 64 R1	GJV3074355R1	07	SK 60 R5	GJV3074329R5
07	BR 60 R2	GJV3074375R2	07	EA 65 R1	GJV3074359R1	07	SK 61 R1	GJV3073906R1
07	BR 61 R1	GJV3074376R1	07	EA 66 R1	GJV3074354R1	07	SK 62 R1	GJV3073907R1
07	BR 61 R2	GJV3074376R2	07	EA 67 R1	GJV3074358R1	07	SK 63 R1	GJV3073908R1
07	ZB 60 R1	GJR5240200R1	07	ZG 60 R1	GJV3074356R1	07	SK 64 R1	GJV3073909R1
07	ZB 60 R2	GJR5240200R2	07	E I 60 R1	GJV3074357R1	07	SK 65 R1	GJV3073910R1
07	ZB 69 R1	GJV3074379R1	07	AB 60 R1	GJV3074360R1	07	SK 66 R1	GJV3073911R1
07	ZB 69 R2	GJV3074379R2	07	AB 61 R1	GJV3074361R1	07	SK 67 R1	GJV3073912R1
07	CS 61	GJR5240300	07	AB 62 R1	GJV3074362R1	07	SK 68 R1	GJV3073913R1
	R202	R202	07	AB 63 R1	GJV3074363R1	07	SK 90 R1	GJR5250200R1
07	ZE 60	GJV3074320	07	AB 67 R1	GJV3074364R1	07	SK 91 R1	GJR5250300R1
	R302	R302	07	AB 68 R1	GJV3074373R1	07	SK 92 R1	GJR5250400R1
07	ZE 61	GJV3074321	07	AA 60 R1	GJV3074365R1	07	LK 60 R1	GJV3075501R1
	R302	R302	07	AA 61 R1	GJV3074366R1	07	LK 61 R1	GJV3075502R1
07	ZE 62	GJV3074322	07	AA 62 R1	GJV3074367R1	07	LV 60 R1	GJV3075503R1
	R302	R302	07	AA 63 R1	GJV3074368R1	07	PR 67 R2	GJR5240800R2
07	ZE 63	GJV3074323	07	AA 65 R1	GJV3074369R1	07	PR 68 R2	GJR5240900R2
	R302	R302	07	KP 60	GJV3074380	07	LB 60 R1	GJV3074399R1
07	PS 60 R2	GJV3074330R2		R101	R101	07	LE 90 R1	GJR5250700R1
07	PS 61 R2	GJV3074331R2	07	KP 62	GJR5240400	07	BA 60 R1	GJV3074397R1
07	PS 61 R3	GJV3074331R3		R101	R101	07	NG 32 R1	GJV3075601R1
07	PS 62 R2	GJV3074332R2	07	KP 63	GJR5240500	07	NG 34 R1	GJV3075602R1
07	PS 62 R3	GJV3074332R3		R101	R101	07	NG 35 R1	GJV3075603R1
07	PS 63 R2	GJV3074333R2	07	KP 64	GJR5240600	07	NG 36 R1	GJV3075604R1
07	PS 63 R3	GJV3074333R3		R101	R101			

Quantity	Type	Order number	I/O points		No. of slots		Current consumption in mA			
				Σ		Σ	5 V	24 V	Σ 5 V	Σ 24 V
	07 ZE 60 R302	GJV3074320R302	-	-	3 1)		2050	-		-
	07 ZE 61 R302	GJV3074321R302	-	-	3 1)		2050	-		-
	07 ZE 62 R302	GJV3074322R302	-	-	3 1)		2750	-		-
	07 ZE 63 R302	GJV3074323R302	-	-	3 1)		2050	-		-
	07 BV 60 R1	GJV3074370R1	-	-	1		220	-		-
	07 EB 60 R1	GJV3074340R1	16		1		120	-		-
	07 EB 61 R1	GJV3074341R1	32		1		150	-		-
	07 EB 62 R1	GJV3074342R1	32		1		150	-		-
	07 EB 63 R1	GJV3074343R1	16		1		120	-		-
	07 EB 64 R1	GJV3074344R1	32		1		150	-		-
	07 EB 66 R1	GJV3074346R1	16		1		120	-		-
	07 EB 67 R1	GJV3074347R1	16		1		120	-		-
	07 EA 60 R1	GJV3074350R1	128		1		60	70		
	07 EA 61 R1	GJV3074351R1	128		1		60	70		
	07 EA 62 R1	GJV3074352R1	128		1		60	170		
	07 EA 63 R1	GJV3074353R1	128		1		60	190		
	07 EA 64 R1	GJV3074355R1	128		1		60	70		
	07 EA 65 R1	GJV3074359R1	128		1		60	190		
	07 EA 66 R1	GJV3074354R1	128		1		160	100		
	07 EA 67 R1	GJV3074358R1	128		1		160	100		
	07 ZG 60 R1	GJV3074356R1	128		1		300	100		
	07 E I 60 R1	GJV3074357R1	16		1		120	-		-
	07 AB 60 R1	GJV3074360R1	16		1		120	-		-
	07 AB 61 R1	GJV3074361R1	32		1		180	-		-
	07 AB 62 R1	GJV3074362R1	16		1		150	-		-
	07 AB 63 R1	GJV3074363R1	32		1		180	-		-
	07 AB 67 R1	GJV3074364R1	16		1		120	160		
	07 AB 68 R1	GJV3074373R1	16		1		400	-		-
	07 AA 60 R1	GJV3074365R1	64		1		70	80		
	07 AA 61 R1	GJV3074366R1	64		1		70	170		
	07 AA 62 R1	GJV3074367R1	64		1		60	100		
	07 AA 63 R1	GJV3074368R1	64		1		60	190		
	07 AA 65 R1	GJV3074369R1	64		1		70	170		
	07 BR 60 R1	GJV3074375R1	-	-	2		600	-		-
	07 BR 60 R2	GJV3074375R2	-	-	2		900	-		-
	07 BR 61 R1	GJV3074376R1	-	-	2		1600	-		-
	07 BR 61 R2	GJV3074376R2	-	-	2		1900	-		-
	07 ZB 60 R1	GJR5240200R1	-	-	2		600	-		-
	07 ZB 60 R2	GJR5240200R2	-	-	2		600	-		-
	07 ZB 69 R1	GJV3074379R1	-	-	2		800	-		-
	07 ZB 69 R2	GJV3074379R2	-	-	2		1100	-		-
	07 CS 61 R202	GJR5240300R202	-	-	1		450	-		-
	07 KP 60 R101	GJV3074380R101	32		2		800	-		-
	07 KP 62 R101	GJR5240400R101	128		1		500	-		-
	07 KP 63 R101	GJR5240500R101	128		1		1000	-		-
	07 KP 64 R101	GJR5240600R101	128		1		500	-		-
	07 KT 60 R101	GJV3074381R101	128		2		1000	-		-
	07 I R 60 R101	GJV3074385R101	-	-	3		1500	-		-
	07 PO 60 R201	GJR5240000R201	128		2		600	-		-
	07 UD 60 R1	GJV3074384R1	128		1		100	-		-

1) incl. program memory

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07 BT/BE 60/69

07 BT/BE 61

07 BT/BE 62

NG	07	07	07	07	07	07	07	07	07	07	07
6											

NG ZE/BV ZE/I/O ZE/I/O I/O I/O I/O I/O I/O I/O I/O I/O BT/BE

Subracks

Type	Description	Order Number
07 BT 60 R1	Basic subrack with slots for the central unit and 2 I/O modules	GJV3074301R1
07 BT 61 R1	Basic subrack with slots for the central unit and 5 I/O modules	GJV3074302R1
07 BT 62 R1	Basic subrack with slots for the central unit and 8 I/O modules	GJV3074303R1
07 BE 60 R1	Expansion subrack with slots for 4 I/O modules	GJV3074304R1
07 BE 61 R1	Expansion subrack with slots for 7 I/O modules	GJV3074305R1
07 BE 62 R1	Expansion subrack with slots for 10 I/O modules	GJV3074306R1
07 BE 69 R1	Expansion subrack for remote I/O couplers	GJV3074309R1

Power Supply Units (for inserting into subracks)

Type	Description	Order Number
07 NG 60 R1	Power supply unit: Input voltage: 110/220 V AC, output voltage: 5 V DC/2 A and 24 V DC/2.0 A	GJV3074310R1
07 NG 61 R1	Power supply unit: Input voltage: 110/220 V AC, output voltage: 5 V DC/4 A and 24 V DC/1.5 A	GJV3074311R1
07 NG 63 R1	Power supply unit: Input voltage: 110/220 V AC, output voltage: 5 V DC/9 A and 24 V DC/0.5 A	GJV3074313R1
07 NG 66 R1	Power supply unit: Input voltage: 24 V DC, output voltage: 5 V DC/4 A and 24 V DC/1.5 A	GJV3074315R1
07 NG 68 R1	Power supply unit: Input voltage: 24 V DC, output voltage: 5 V DC/9 A and 24 V DC/0.5 A	GJV3074317R1

For power supply units for mounting into switchgear cabinets see "Accessories".

I/O Expansions and Coupler

Type	Description	Order Number
07 BV 60 R1	Bus connector for central I/O expansion	GJV3074370R1
07 BR 60 R1	Remote I/O coupler with triaxial cable ¹⁾ for 512 I/O points maximum	GJV3074375R1
07 BR 60 R2	Remote I/O coupler with optical fibre for 512 I/O points maximum	GJV3074375R2
07 BR 61 R1	Remote I/O coupler with triaxial cable ¹⁾ for remote substation	GJV3074376R1
07 BR 61 R2	Remote I/O coupler with optical fibre for remote substation	GJV3074376R2
07 ZB 60 R1	Coupler with triaxial cable ¹⁾ for connection to ABB Procontic field bus ZB 10	GJR5240200R1
07 ZB 60 R2	Coupler with TWINAX ²⁾ cable for connection to ABB Procontic field bus ZB 10	GJR5240200R2
07 ZB 69 R1	Coupler with triaxial cable ¹⁾ for connection to ZB 20 bus	GJV3074379R1
07 ZB 69 R2	Coupler with optical fibre for connection to ZB 20 bus	GJV3074379R2
07 CS 61 R202	Remote I/O coupler for connection of ABB Procontic CS31 to ABB Procontic T200	GJR5240300R202

Central Units ³⁾

Type	Description	Order Number
07 ZE 60 R302	Central unit for max. 1 subrack with max. 8 I/O slots, only remote I/O expansion possible	GJV3074320R302
07 ZE 61 R302	Central unit for max. 2 subracks with 18 I/O slots in central expansion with 1 subrack, additional remote I/O expansion possible	GJV3074321R302
07 ZE 62 R302	Central unit for max. 6 subracks with 58 I/O slots in central expansion with 5 subracks, additional remote I/O expansion possible	GJV3074322R302
07 ZE 63 R302	Central unit for max. 6 subracks with 58 I/O slots in central expansion with 5 subracks, additional remote I/O expansion possible	GJV3074323R302

²⁾

¹⁾ TRIAX = triaxial cable (double shielded coaxial cable)

²⁾ TWINAX = twin axial cable (2-core, twisted and shielded high-frequency data transmission line)

³⁾ Depending on the size of the user program the central unit has to be equipped with an appropriate program memory which has to be ordered separately.

Program Memories

Type	Description	Order Number
07 PS 60	Program memory: CMOS RAM with 3.5 k instructions, RAM data memory with 2 k word flags	GJV3074330R2
07 PS 61	Program memory: CMOS RAM with 7.6 k instructions, RAM data memory with 2 k word flags	GJV3074331R2 or GJV3074331R3
07 PS 62	Program memory: CMOS RAM with 15.7 k instructions, RAM data memory with 16 k word flags	GJV3074332R2 or GJV3074332R3
07 PS 63	Program memory: CMOS RAM with 48.5 k instructions, RAM data memory with 50 k word flags	GJV3074333R2 or GJV3074333R3
07 PR 62	Program memory: EPROM with 15.7 k instructions, RAM data memory with 16 k word flags	GJV3074336R2
07 PR 63	Program memory: EPROM with 48.5 k instructions, RAM data memory with 50 k word flags	GJV3074337R2

Binary Input Modules

Type	Description	Order Number
07 EB 60 R1	Binary input module 24 V AC/DC, electrically isolated, 16 inputs	GJV3074340R1
07 EB 61 R1	Binary input module 24 V AC/DC, electrically isolated, 32 inputs	GJV3074341R1
07 EB 62 R1	High-speed binary input module 24 V DC, el. isolated, 32 inputs	GJV3074342R1
07 EB 63 R1	Binary input module 48 V AC/DC, electrically isolated, 16 inputs	GJV3074343R1
07 EB 64 R1	Binary input module 48 V AC/DC, electrically isolated, 32 inputs	GJV3074344R1
07 EB 66 R1	Binary input module 110 V AC, electrically isolated, 16 inputs	GJV3074346R1
07 EB 67 R1	Binary input module 220 V AC, electrically isolated, 16 inputs	GJV3074347R1

Analog Input Modules

Type	Description	Order Number
07 EA 60 R1	Analog input module 0...10 V, 8 bits, 8 channels, el. isolated	GJV3074350R1
07 EA 61 R1	Analog input module 4...20 mA, 8 bits, 8 channels, el. isolated	GJV3074351R1
07 EA 62 R1	Analog input module -10...+10 V, 12 bits, 8 channels, el. isolated	GJV3074352R1
07 EA 63 R1	Analog input module 4...20 mA, 12 bits, 8 channels, el. isolated	GJV3074353R1
07 EA 64 R1	Analog input module 0...20 mA, 8 bits, 8 channels, el. isolated	GJV3074355R1
07 EA 65 R1	Analog input module 0...20 mA, 12 bits, 8 channels, el. isolated	GJV3074359R1
07 EA 66 R1	Analog input module Pt 100, measuring range -50 °C to +400 °C, 13 bits, 8 channels, electrically isolated	GJV3074354R1
07 EA 67 R1	Analog input module for thermocouples, 13 bits, 8 channels electrically isolated, measuring range 0 °C to 1600 °C	GJV3074358R1

Special Input Modules

Type	Description	Order Number
07 EI 60 R1	Interrupt input module 24 V DC, electrically isolated, 16 Interrupt channels	GJV3074357R1
07 ZG 60 R1	High-speed counter, 16 bits, 50 kHz	GJV3074356R1

Binary Output Modules

Type	Description	Order Number
07 AB 60 R1	Binary output module, transistor outputs, 24/48 V DC, 2 A, electrically isolated, 16 outputs	GJV3074360R1
07 AB 61 R1	Binary output module, transistor outputs, 24/48 V DC, 500 mA, electrically isolated, 32 outputs	GJV3074361R1
07 AB 62 R1	Binary output module, transistor outputs, 24 V DC, 2 A, short-circuit proof, electrically isolated, 16 outputs	GJV3074362R1
07 AB 63 R1	Binary output module, transistor outputs, 24 V DC, 500 mA, short-circuit proof, electrically isolated, 32 outputs	GJV3074363R1
07 AB 67 R1	Binary output module, relay outputs, 220 V AC/24 V DC, electrically isolated, 16 outputs	GJV3074364R1
07 AB 68 R1	Binary output module, thyristor outputs, 115 V AC, electrically isolated, 16 outputs	GJV3074373R1

Analog Output Modules

Type	Description	Order Number
07 AA 60 R1	Analog output module 0...10 V, 8 bits, 4 channels, el. isolated	GJV3074365R1
07 AA 61 R1	Analog output module 4...20 mA, 8 bits, 4 channels, el. isolated	GJV3074366R1
07 AA 62 R1	Analog output module -10...+10 V, 12 bits, 4 channels, el. isolated	GJV3074367R1
07 AA 63 R1	Analog output module 4...20 mA, 12 bits, 4 channels, el. isolated	GJV3074368R1
07 AA 65 R1	Analog output module 0...20 mA, 8 bits, 4 channels, el. isolated	GJV3074369R1

Communication Units

Type	Description	Order Number
07 KP 60 R101	Communication processor (interfaces for RS-232-C and RS-422)	GJV3074380R101
07 KP 62 R101	Communication processor ASCII (2 interfaces for RS-232-C)	GJR5240400R101
07 KP 63 R101	Communication processor PROFIBUS (2 interfaces for RS-232-C and 2 interfaces for RS-485)	GJR5240500R101
07 KP 64 R101	Communication processor RCOM (2 interfaces for RS-232-C)	GJR5240600R101
07 KT 60 R101	Text processor (interfaces for RS-422 or RS-423 (RS-232-C))	GJV3074381R101

Preprocessors

Type	Description	Order Number
07 IR 60 R101	Industrial computer Basic	GJV3074385R101
07 PO 60 R201	One-axis positioning unit	GJR5240000R201
07 UD 60 R1	Programmable real-time clock	GJV3074384R1

System Cables

Type	Description	Order Number
07 SV 60 R1:	System-expansion cable for central I/O expansion connecting central unit and expansion subrack (cable length 0.5 m)	GJV3074371R1
07 SV 60 R2:	System-expansion cable for central I/O expansion connecting central unit and expansion subrack (cable length 1.0 m)	GJV3074371R2
07 SV 61 R1:	System-expansion cable for central I/O expansion connecting two subracks (cable length 0.5 m)	GJV3074372R1
07 SV 61 R2:	System-expansion cable for central I/O expansion connecting two subracks (cable length 1.0 m)	GJV3074372R2
07 SZ 60 R1:	System cable set connecting an input/output module and its remote mounted front panel	GJV3074398R1
07 SK 60 R2:	Interface cable connecting the serial interface of a central unit and the hand-held monitoring tool 07 BG 60 (cable length 2 m)	GJV3074329R2
07 SK 60 R5:	Interface cable connecting the serial interface of a central unit and the hand-held monitoring tool 07 BG 60 (cable length 5 m)	GJV3074329R5
07 SK 61 R1:	Serial interface cable; SUB-D plugs: Side A: 25 pole female; side B: 15 pole male	GJV3073906R1
07 SK 62 R1:	Serial interface cable; SUB-D plugs: Side A: 9 pole female; side B: 15 pole male	GJV3073907R1
07 SK 63 R1:	Serial interface cable for connection of the industrial computer Basic 07 IR 60	GJV3073908R1
07 SK 64 R1:	Serial interface cable for connection of the text processor 07 KT 60	GJV3073909R1
07 SK 65 R1:	Serial interface cable for connection of the positioning unit 07 PO 60	GJV3073910R1

07 SK 66 R1:	Serial interface cable for connection between 2 positioning units 07 PO 60 and the electronic switch and control logic 35 US 50	GJV3073911R1
07 SK 67 R1:	Serial interface cable for connection of the text processor 07 KT 60 to the printer 07 DR 12	GJV3073912R1
07 SK 68 R1:	Serial interface cable for connection of the text processor 07 KT 60 to the operator station 35 BS 40	GJV3073913R1
07 SK 90..92R1:	Interfaces cables for connection of peripheral units to the 9-pole serial interfaces of the compact PLCs 07 KR 91, 07 KT 92 (ABB Procontic CS31) and the communication processors 07 KP 62, 07 KP 63 and 07 KP 64 (ABB Procontic T200):	
	07 SK 90 R1	GJR5250200R1
	07 SK 91 R1	GJR5250300R1
	07 SK 92 R1	GJR5250400R1
07 LK 60 R1:	Fibre-optic cable (Patchcord) for direct connection between couplers (07 BR 60/61 R2, 07 ZB 69 R2)	GJV3075501R1
07 LK 61 R1:	Fibre-optic cable (Pigtail) for connection of couplers (07 BR 60/61 R2, 07 ZB 69 R2) to an external optical fibre	GJV3075502R1
07 LV 60 R1:	Fibre-optic coupling device for cable-to-cable connection and test and measurement purposes	GJV3075503R1

Accessories

Type	Description	Order Number
07 PR 67 R1	EPROM Set for program memory 07 PR 62 R1 1)	GJV3074338R1
07 PR 67 R2	EPROM Set for program memory 07 PR 62 R2	GJR5240800R2
07 PR 68 R1	EPROM Set for program memory 07 PR 63 R1 1)	GJV3074339R1
07 PR 68 R2	EPROM Set for program memory 07 PR 63 R2	GJR5240900R2
07 LB 60 R1	Replacement lithium battery	GJV3074399R1
07 LE 90 R1	Lithium battery module	GJR5250700R1
07 BA 60 R1	Dummy module for empty I/O slots	GJV3074397R1
	Replacement fuse fast 5 A, for module 07 AB 61	GJV3074395P1
	Replacement fuse fast 7.5 A, für module 07 AB 60	GJV3074395P2
	Spare key for central units	GJV3074396P1
	Power supply units for mounting into switchgear cabinets:	
07 NG 32 R1	Power supply unit 115/230 V AC / 24 V DC, 2,5 A	GJV3075601R1
07 NG 34 R1	Power supply unit 115/230 V AC / 24 V DC, 5,0 A	GJV3075602R1
07 NG 35 R1	Power supply unit 230/400 V 3-phase AC / 24 V DC, 10 A	GJV3075603R1
07 NG 36 R1	Power supply unit 230/400 V 3-phase AC / 24 V DC, 20 A	GJV3075604R1

1) R1 will no longer be available in the future

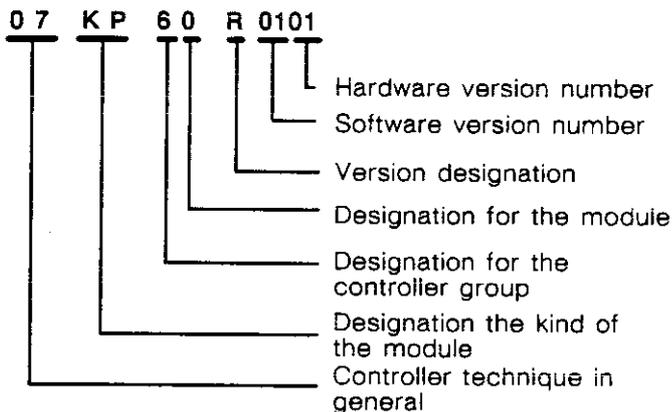
4 Information on ordering

General ABB Procontic designation systematics

Modules or components of the ABB Procontic T200 PLC are functionally designated via the type designation. The handling mode to address the units and components is done by using the order number. ABB Procontic modules are designated according to the following rules:

a) Type designation

Example:



Remark: The leading zeroes of the Hardware or Software version number can be omitted, e. g. 07 KP 60 R101 and 07 KP 60 R0101 or 07 BT 60 R1 and 07 BT 60 R0001 resp. are of equal value. The short form is preferred.

Designation of the kind of the units

BT	Basic subrack
BE	Expansion subrack
NG	Power supply unit
BV	Bus connector
SV	System-connection cable
ZE	Central unit
PS	Program memory (CMOS)
PR	Program memory (EPROM)
EB	Binary input module
EA	Analog input module
ZG	Counter
EI	Interrupt input module
AB	Binary output module
AA	Analog output module
BR	Remote I/O coupler
ZB	Coupler
KP	Communication processor
KT	Text processor
IR	Industrial computer
PO	Positioning unit
UD	Programmable real-time clock
LB	Lithium battery
LE	Lithium battery module
BA	Dummy module
SZ	System cable set
SK	System cable
LK	Fibre-optic cable
LV	Fibre-optic coupling device

b) Order number

Example: GJV3074301R1

Units which are more or less similar but not completely identical, are distinguished by the version designation (hardware version number and software version number). The version data of the type designation and in the order number are equal.

c) Data for ordering

To ensure a correct delivery the data for ordering have to comprise the **complete type designations and order numbers**.

5 Customer Training

To support project planning, commissioning, and operating of ABB Procontic control systems

ABB Schalt- und Steuerungstechnik GmbH
Abt. SST/MPS
Eppelheimer Straße 82 Postfach 10 50 09
D-69123 Heidelberg D-69040 Heidelberg
Telefon 06221 777-202
Telefax 06221 777-361

offers customer training. If desired, training can also be performed at customer sites.

For detailed information on this training please refer to our "Seminar catalogue", which can be requested over the above mentioned address, over all other ABB service centres or all ABB Schalt- und Steuerungstechnik representatives.

The enrolment is to be done by directly contacting ABB Schalt- und Steuerungstechnik or via our regional offices.

The following seminars can be attended:

Basic knowledge and programming

Knowledge of the different hardware components of the decentralized intelligent automation systems, basic knowledge of the ABB Procontic control systems and the 907 PC 33 programming system.

Practical training with the programming software at the automation systems. Exercises with different tasks at the 07 KR 91 / 07 KT 92 central units.

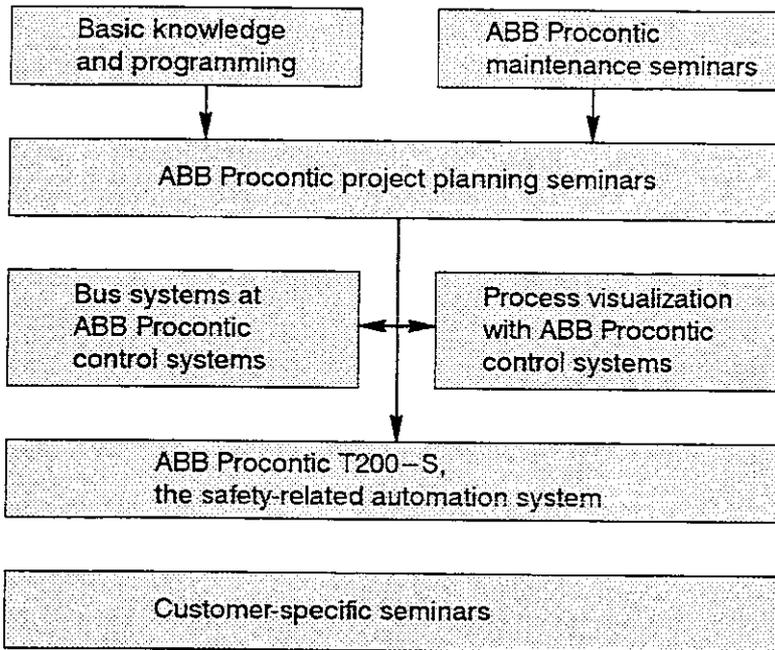


ABB Procontic maintenance seminars

Getting knowledge of the programming language and the hardware components, possible combinations, start-up of a model plant including trouble shooting in the automation system, in the area of the process interface level and in the model plant itself.

ABB Procontic project planning seminars

Project planning, programming and commissioning of model plants. Principles of networking and the data exchange via serial interfaces (process control). Practical training at the automation systems.

Bus systems at ABB Procontic control systems

Knowledge of the ABB Procontic CS31 system bus. Start-up of the networking between different ABB automation systems via ZB20, ARCnet, Pdnet and MODBUS. Getting knowledge of the possibilities for communication between automation systems via the telephone network or via dedicated lines with RCOM. Exercises with the mentioned items.

Process visualization with ABB Procontic control systems

Knowledge of the process visualization by means of process visualization software packages. Training of man-machine-communication. Exercises to the items at the model plant "Liquid-level control".

ABB Procontic T200-S, the safety-related automation system

Knowledge of the hardware and software components of the safety-related automation system. Programming and commissioning of the T200-S. Exercises at the model plant "3-axes model".

Customer-specific seminars

Upon request, seminars can also be arranged as desired by the customer. Depending on the requirements, seminars can be held in Heidelberg or in another place.

Concerning the automation systems ABB Procontic s-plus, e, b, K200, T300, Axumerik m and the positioning of axes, we also offer seminars. Based on your requirements, we gladly arrange an individual seminar for you.

6 Maintenance Service and Support

Maintenance Service

We operate a qualified service department, so we can help you to solve even difficult problems.

- Advice by telephone (Help line)
- Trouble shooting and fault recovery of the machine and plant
- Support in case of program development
- Training of the personnel in the factory
- Renting of programming tools

In case of service support we ask you to do the according preparations depending on the desired service e. g.:

- Making available the complete documentation
- Free access to the machine/plant
- Assignment of operating personnel etc.

Inquiries and orders are to address to:

ABB Schalt- und Steuerungstechnik GmbH
Abteilung SST/MPE, Hotline Control Engineering

Eppelheimer Straße 82
D-69123 Heidelberg

Postfach 10 50 09
D-69040 Heidelberg

Telephone +49 6221 777-444
Telefax +49 6221 777-361

Support

The range of support provides for the following:

- Delivery of spare equipment
- Repairing of faulty units and systems

Inquiries and orders are to address to:

ABB Schalt- und Steuerungstechnik GmbH
Abteilung SST/OA

Impexstraße 5
D-69190 Walldorf

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7 Applications Department

Our modular programmable control system ABB Procontic T200 provides you with a wide range of high-performance modules and standard software to master all your applications.

The applications department helps you select the appropriate system for solving your particular tasks. We are also in a position to develop your special user- or problem-oriented user program.

In this way you can make use of ABB's know-how in the field of 'factory automation'.

In particular the applications department offers:

- Cooperation during specification of control tasks and defining of the most suitable system configuration
- Developing of user programs such as PLC instruction lists or sequential function charts for the ABB Procontic T200 system
- Commissioning

Precondition for this is that a time schedule is agreed and progress of work supervised continuously by a project engineer to be appointed by the user.

For assistance please contact the Applications Department:

ABB Schalt- und Steuerungstechnik GmbH
Projekte, Applikationen, Engineering
Abteilung SST/MPE

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D-69040 Heidelberg

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Telefax (06221) 777-361

8 Customer support and addresses

You can consult competent ABB employees worldwide under the following addresses, and they will be pleased to advise you:

Germany

Hotline Control Engineering:

Technical information, advising assistance by telephone

Telephone + 49 6221 777-444
Telefax + 49 6221 777-361

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D Definitions

A

AWP user program

B

Basic subrack abbreviation BT (German: Baugruppen-Träger), subrack with a slot for a central unit. Mountable are coupler to ABB Procontic field bus ZB 10 and ABB Procontic bus ZB 20 as well as all preprocessors, communication units and input/output modules. From the basic subrack begins the central and/or the remote expansion.

Battery lifetime The value of the battery lifetime says how long the battery is able to buffer the stored data when the unit is not supplied by supply voltages. If the supply voltages are present the battery is only discharged by its own leakage current.

BE see 'expansion subrack'

Bit flag internal latch for one binary digit (0, 1)

Breakpoint is a test mode

BT see 'basic subrack'

Buffering back-up of RAM data contents, when supply voltages fail

BV abbreviation of 'bus connector', (German: Bus-Verbinder),

BV slot bus connector slot, first slot to the right of the power supply slot (NG slot) in the expansion subrack. The bus connector 07 BV 60 or the coupler 07 BR 61 can be placed here.

C

Central I/O expansion By means of system cables and bus connectors 07 BV 60 the central unit can operate with further I/O modules which are installed nearby in expansion subracks (e.g. in the same cubicle).

Central station configuration consisting of a basic subrack equipped with modules plus (if existing) one or more expansion subracks of a central expansion.

D

E

Error code encoded error information (e.g. a number)

Error flag bit- or word flag used for the indication of an error

Expansion subrack abbreviation BE (German: Erweiterungs-Baugruppenträger), subrack without a slot for a central unit, used for mounting of modules in central or remote expansion

F

FBD abbreviation of 'function block diagram'

Flags store intermediate results

to force stored overwriting of a variable, independent of operating results of the control

Function program block standardized software function

G

H

High-Byte (higher byte), higher byte of a word (the most significant 8 bits)

I

IL abbreviation of 'instruction list'

instruction part of a program (smallest convenient subdivision). Normally one instruction occupies 32 bits of a program memory. The data 'capacity' specified in the data sheet 'program memories' corresponds to this size of an instruction. The real size of the diverse instructions is described in the list of operators.

Internal voltages supply voltages (5 V DC and 24 V DC) available on the back panel (bus), supplying the internal circuitry of modules and units

Interrupt a break in the normal flow of cyclic operation

Interrupt signal signal that causes an interrupt

I/O point smallest unit with respect to the addressing, 1 I/O point is 1 bit. For I/O modules is defined: 1 channel requires 1 I/O point, 1 word-channel requires 16 I/O points.

I/O slot slot in a subrack where an input/output module can be placed. In a basic subrack all permitted units can be mounted in I/O slots (accept power supply unit and central unit). If an expansion subrack is used for a remote expansion the coupler 07 BR 61 (double-sized module) occupies the BV slot (bus connector slot) plus 1 I/O slot. The Interrupt input module 07 EI 60 cannot be used in remote I/O expansion. In expansion subracks used for central expansion it is possible to mount text processors 07 KT 60 and positioning units at I/O slots.

K

L

LD abbreviation of 'ladder diagram'

Line is opened by a coupler 07 BR 60 in a decentralized expansion

Low-Byte (lower byte), lower byte of a word (the least significant 8 bits)

M

N

NG abbreviation of 'power supply unit', (German: Netz-Gerät),

NG slot power supply slot, first slot on the left side of each subrack. Only power supply units can be placed here.

O

Offline program development and programming without connection to PLC

Online state of operation, in which the programming unit is connected to the PLC

to overwrite changing the value of a variable, this change can be overwritten again by the central unit.

P

Preprocessor processor unit which processes sub-functions independent of the central unit

Process voltage supply voltage for switches, encoders, actuators and indication facilities involved in the process

R

Register chains variables for sequential function control

Remote-I/O input/output modules located in remote substations

remote I/O expansion The central station is in a basic subrack. By means of triaxial cables or optical fibres the central station and remote substations (remote I/O expansion) are connected over large distances. Coupler for use: 07 BR 60 (in the basic subrack) and 07 BR 61 (in each remote substation). The central unit in the basic subrack can operate with up to 4 lines (one coupler per line is necessary). Up to 10 remote substations can be connected to 1 line.

Remote substation (decentralized I/O station), expansion subrack with coupler and I/O modules connected via remote expansion to a central station

S

SFC abbreviation of 'sequential function chart'

Single cycle Test mode: Each time a preset number of cycles is processed

Single step Test mode: The program is processed command after command

T

Timer is adjusted by software

U

UB abbreviation for 'internal voltages', see 'internal voltages'

UN abbreviation of 'line voltage'

UP abbreviation of 'process voltage'

V

W

Word a data element of length 16 bits

Word flag internal latch for one word

Z

ZB Reference potential (0 V) for internal voltages UB

ZE abbreviation of 'central unit', (German: Zentral-Einheit),

ZE slot first slot to the right of the NG slot (power supply slot) in basic subracks. Only central units (including program memory) can be placed here.

ZP Reference potential (0 V) for process voltages UP



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