

System description

ABB Procontic T300

Multiprocessor Control System

General Part

Order number
GATS 1315 01 R2002 part 1
replaces
Publication number
D AT 1679 87 E

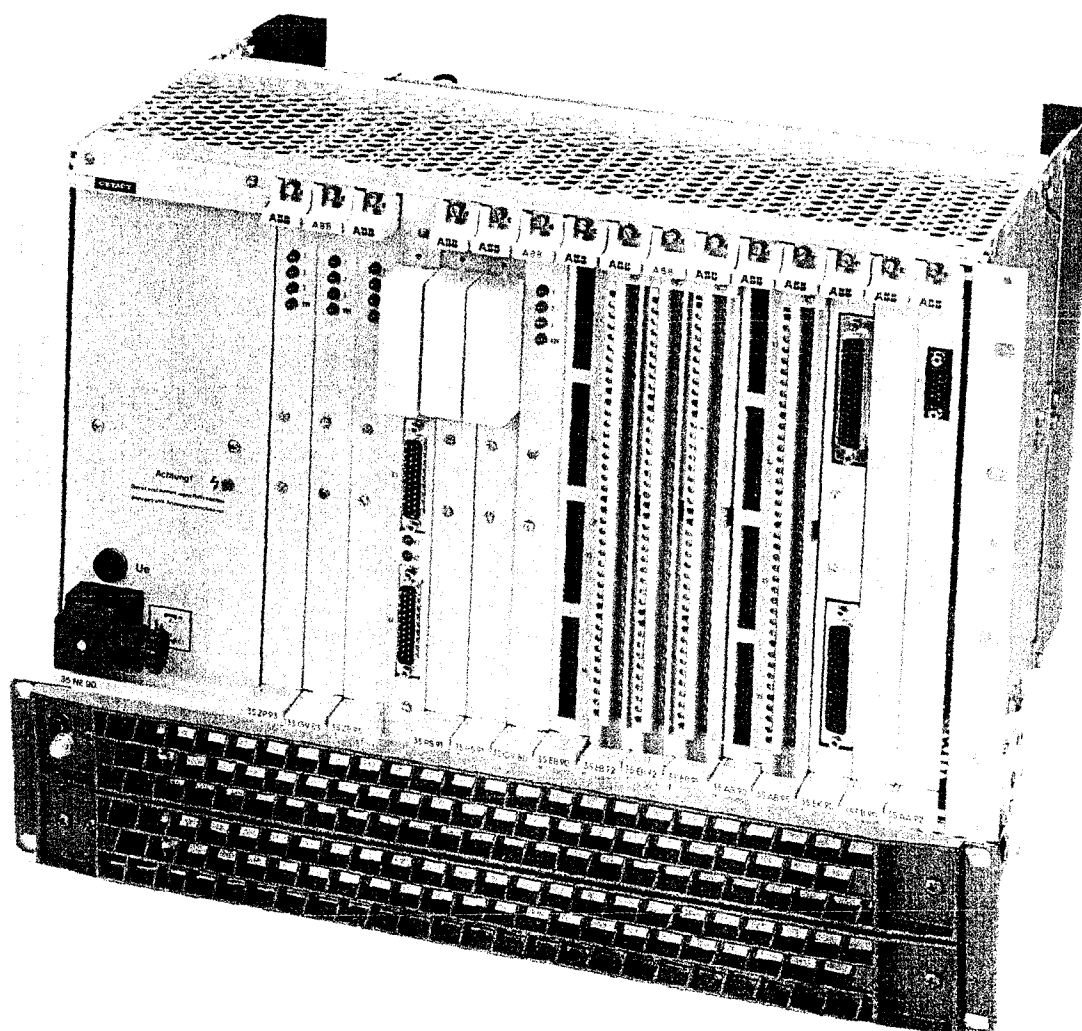


ABB Schalt- und Steuerungstechnik GmbH

ABB
ASEA BROWN BOVERI

Regulations

Regulations Concerning the Setting up of Installations

Apart from the basic "Regulations for the Setting up of Power Units" VDE 0100 and for "The Rating of Creepage Paths and Air Gaps" VDE 0110 the regulations "The Equipment of Power Units with Electrical Components" VDE 0160 in connection with VDE 0660, part 500, have to be taken into due consideration. Further attention has to be paid to VDE 0113 in case of the control of working and processing machines. If operating elements are to be arranged near shock-hazard parts with protection against electrical shock, VDE 0106, part 100, is relevant.

The user has to ensure that the units as well as the associated components have to be installed according to these regulations. Respectively valid safety regulations, e.g. regulation for the prevention of accidents and the law concerning technical working material, are valid for machines and units connected as well.

ABB Procontic units have been built according to VDE regulation 0160. The protection against direct touching as demanded by chapter 5.5.1 of this VDE regulation has to be satisfied by the user, e.g. at installing of switch cabinet.

ABB Procontic units have been designed for operation according to insulation class A of VDE 0110. If considerable pollution is expected during operations, the units have to be installed in housings of the respective kind of protection.

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

Note: Please observe the national regulations for the installation of electrical equipments, which are valid in your country.

ABB Schalt- und Steuerungstechnik GmbH

General Information

ABB Procontic T300 is a controller with a modular structure for the realization of very different tasks with a single system solution.

The function blocks:

- Programmable controller PLC
- Numerical controller CNC
- Industrial computer IC

are formed with the same basic hardware.

Any combination or accumulation of these functions is possible with the multiprocessor capability of the ABB Procontic T300 for the automation task. The function blocks communicate with each other via the system bus.

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1 General System Description

ABB Procontic T300 has the following structure and capabilities divided according to function blocks:

ABB Procontic T300, function block PLC

This function block is generally the central block for solving an automation problem as regards the control.

It consists of a central unit 35 ZE 93 and various binary and analog in- and output units as an interface for the process.

An extensive command reserve is available for the use, testing and communication with other PLC processors.

Programming the user programs can be carried out via an IBM compatible personal computer (PC) and the ABB programming software either in the

- Instruction list
- Function block diagram or
- Ladder diagram.

The language scope for compiling the user programs includes the following functions, among others:

- Binary and word processing
- Comparison functions
- Function blocks including control blocks,
- Text outputs (messages)
- Axis control.

ABB Procontic T300, function block CNC

The function block CNC, for positioning or path control, is capable of controlling an almost infinite number of axes or moving according to a given path due to the possibility of the multiple use.

Axis cards and positioning modules are used here as I/O units.

The paths to be moved can be programmed in the absolute measuring system or the relative measuring system. The positioning module moves a maximum of 16 axes in a path-controlled way. The path control module can interpolate a maximum of 4 axes; 3 axes in a linear way or 2 axes in a circular way.

Programming the function block CNC is carried out in accordance with DIN 66025. Every function can be programmed individually via a central interface. A personal computer or a standard terminal can be used as the programming unit. DNC transfer including set operating modes and manual functions is also possible.

The data exchange with the function block PLC is carried out via the multiprocessor-based control parallel bus.

ABB Procontic T300, function block IC

The industrial computer is a computer, which can be used in an industrial environment for processing automation tasks.

The scope of use of the industrial computer includes data processing, man-machine communication and networking.

Programming the industrial computer is carried out in the usual high-level languages like PASCAL, C, FORTRAN, etc. The program compilation can be carried out on an IBM compatible personal computer, an INTEL development system or on the industrial computer itself.

A programming system known to the programmer is used. The operating system manages the operating means typical for a computer, like, e.g., the memory tasks, communication means, the printer and the bulk storage device.

The ABB Procontic T300 is a modular automation system from the ABB Procontic family, which was developed and produced with very modern points of view. ABB procontic T300 fulfills all the main automation tasks in the medium and upper performance levels.

2 Technical System Data, Features and General Capabilities

Voltage data

Process voltage UP

UP1 (incl. residual ripples)	or	24 V DC (+ 25 %, - 20 %)
		48 V DC (+ 25 %, - 20 %)
UP3		12 V DC ($\pm$ 10 %)
UP5		110 V AC (+ 20 %, - 22 %)
	or	220 V AC (+ 20 %, - 22 %)
UP7		24 V AC
UP8		48 V AC

Residual ripples U_{pp} UP1 = 24 V DC
UP1 = 48 V DC

< 4 V
< 8 V

Reference potential ZP

ZP 0 V for process voltage UP

Mains voltage UN

UN1 220 V AC (+ 20 %, - 22 %)
UN2 110 V AC (+ 20 %, - 22 %)

Logic voltage UB

UB1 5 V DC
UB4 24 V DC

Reference potential ZB

ZB 0 V for logic voltage UB

Creep distances and air gaps

The creep distances and air gaps correspond to the DIN VDE regulation 0160.

Test voltages

The test voltages correspond to the DIN VDE regulation 0160.

Electro-magnetic compatibility

The electro-static discharge (ESD) corresponds to the standard IEC 801-2 with a severity of 3.

Interference voltage 8 kV

The radiation with electro-magnetic fields (RFI=radio-frequency interference) corresponds to the standard IEC 801-3.

Field strength 10 V/m

The fast transient test (FTT)

meets the standard specification IEC 801-4.

Interference voltages for:

220 V AC power supply units	2 kV
24 V DC power supply units	1 kV
binary I/O units 110 V/220 V	2 kV
binary I/O units 24 V	1 kV
analog I/O units	1 kV
networking	2 kV
other connections	0.5 kV

Radio interference level

The measurement of the radio interference voltage is carried out according to the DIN VDE regulation 0871, limit value category

A

Operating conditions

Temperature according to DIN 40040

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

Humidity according to DIN 40040

annual average	Category F, always without moisture condensation, $\leq 75\%$
on 30 days in the year	95 %
on the other days when observing the annual average, occasionally	85 %

Air pressure according to DIN 40040

operation	$\geq 800 \text{ hPa} / \leq 2,000 \text{ m}$
storage	$\geq 660 \text{ hPa} / \leq 3,500 \text{ m}$

Resistance to vibration

Category A according to germanic Lloyd and VDE 0160

Degree of protection

according to DIN 40050

IP 20

Conductor cross sections of the process connections

Power supplies

L1, N max. 1.5 mm²

PE max. 2.5 mm²

I/O units max. 1.5 mm²

Subrack, earth terminals max. 6.0 mm²

Function block PLC

Note:

The data listed in the following are valid for one PLC central unit each.

Number of the user programs	2, time-controlled with a maximum of 14K control instructions per central unit
battery buffer	for user program, operand memory and comment memory
Inputs, binary	1024
Outputs, binary	1024
Inputs, word	256
Outputs, word	256
Flags, binary	4096 per program
Flags, word	4096 per program
Constants, binary	2 per program
Constants, word	640 per program
Constants, double word	128 per program
Program processing per 1 K instructions:	
Bit	3 ms
Word	6 to 17 ms

Function block CNC

General capabilities:

Displays	selectively all actual values or following errors
Operation modes	single sentence mode/automatic mode

G and M functions:

Zero point shift	programmable
Path programming	in increments μm or mm
Number of NC programs	999 (max. 256 KBytes)

Capabilities of the path control:

Path-controlled axes	2 to 4
Level selection	x/y, y/z, x/z
Interpolation	Helical interpolation
Interpolation and position control cycle	5 ms
Linear interpolation	in 3 axes (4th axis is towed)
Path speed	programmable
Sentence sequence time	5 ms
Circular interpolation	in 2 out of 3 axes (3rd axis is towed)
Override	adjustable
Max. jog speed	16 m/min (with 1 μm resolution)
Acceleration and deceleration ramps	can be switched per G function
Measuring cycle can be recalled via a G function	

Capabilities of the positioning control:

Number of the path-controlled axes	1 ... 16
Position control	disconnectable
Programming possibility	jog path and speed for each axis
Max. jog speed	64 m/min with 1 μm resolution
Interpolation and position control cycle	2.5 ms + number of axes x 0.5 ms

Function block IC

Features of the industrial computer function block:

- Infinite extension to the single board computer through to the multi-microcomputer system
- The separation of the local bus and the multiprocessor-based control system bus guarantees a high processing speed
- An additional 80 bit arithmetical processor (8087) can be used, if necessary
- Intelligent preprocessing of process signals with a high calculation performance
- Several data transfer possibilities
- Real-time multi-user operating system iRMX 86 with real-time processing in the μs range, almost parallel control of processes, multi-computing, user-friendly operation, connection with superior units, support from standard peripheral units.

3 Assortment Overview

Subracks

Type	Description	Order Number
35 GS 91 R1	Subrack 19'', 6 U, for 16 slots with a bus line and a power supply unit 220 V AC, 5 V DC/25 A, ± 15 V DC/1A	GJR5136400R1
35 GS 93 R1	Subrack 19'', 6 U, for 16 slots with a bus line and a power supply unit 24 V DC, 5 V DC/12 A, ± 15 V DC/2A	GJR5144000R1
34 LU 31 R2	Ventilation level	GJV3071301R2

Power supply units

Type	Description	Order Number
35 NE 93 R1	Power supply unit 24 V DC, 5 V DC/12 A, ± 15 V DC/2A as a plug-in unit in 35 GS 93 R1	GJV3072601R1

Couplers

Type	Description	Order Number
35 EK 90 R1	Bus-coupler for 1st subrack (basic subrack) for the connection of up to 3 extension subracks	GJR5143100r1
35 EK 91 R1	Bus-coupler for 2nd to 4th subracks (extension subracks)	GJR5143200R1
35 SK 96 R1	Connection cable for the bus coupler	GJR5143700R1

Processor units

Type	Description	Order Number
35 ZP 93 R11	Processor unit with a processor, Intel 8086, 5 MHz	GJR5133200R11
35 ZP 93 R21	Processor unit with processors, Intel 8086 and 8087, 5 MHz	GJR5133200R21
35 ZP 93 R31	Processor unit with a processor, Intel 8086, 8 MHz	GJR5133200R31
35 ZP 93 R41	Processor unit with processors, Intel 8086 and 8087, 8 MHz	GJR5133200R41

Data interface units

Type	Description	Order Number
35 DS 90 R20	Data interface and memory extension for 35 ZP 93 serial interfaces RS 422, RS 232 and current loop 20 mA, data transfer rate adjustable from 110 ... 38400 baud; memory expansion up to 256 KByte is possible	GJR5133300R2000
35 DS 91 R2	Data interfaces with memory for 35 ZP 93 R31/R41 mit buffered memory, 2 serial interfaces RS 422, RS 232 data transfer rate adjustable from 110 ... 38400 baud; memory expansion up to 512 KByte is possible	GJR5137400R1
35 DS 91 R3	Data interfaces and memory extension for 35 ZP 93 R31/R41 mit battery buffered memory, 2 serial interfaces RS 422, RS 232 with iSBX interface for multi-function modules, data transfer rate adjustable from 110 ... 38400 baud; memory expansion up to 512 KByte is possible	GJR5137400R3

Program memories

Type	Description	Order Number
35 PS 91 R12	RAM card with 32 KByte memory, battery buffered	GJR5137100R12
35 PS 91 R13	RAM card with 128 KByte memory, with automatic error detection and correction (EDC), battery buffered	GJR5137100R13
35 PS 91 R14	RAM card with 128 KByte memory, battery buffered	GJR5137100R12
35 PS 91 R22	RAM card with 514 KByte memory, battery buffered	GJR5137100R12

PLC central processors

Type	Description	Order Number
35 ZE 93 R301	Central processor PLC with 14 K instructions of user program, bit- and word processing, blocks, 2 serial interfaces, battery buffered memory, 2.5 ms/K bit processing	GJR5145000R301

CNC central processors

Type	Description	Order Number
35 GV 80 R101	Positioning unit for 1 ... 4 axes, 35 AE 92 R4/R5 also required	GJR5145300R101
35 GV 83 R101	Path control unit for 1 ... 4 axes, 35 AE 92 R4/R5 also required	GJR5145400R101
35 ZS 86 R101	Central control device for the path control and positioning, among other things	GJR5145500R101

Axis units

Type	Description	Order Number
35 PO 90 R101	Positioning unit for 1 axis with an NC data memory, 1 serial interface, input for incremental measuring systems, output ± 10 V	GJR5144100R101
Accessories for 35 PO 90 R101:		
	Operating and programming unit 35 AB 50	GJR5139200R102
	Electronic reversing and control logic 35 US 50 b	GJR5141800R101
	Software for the Personal Computer 935 AM 50	GJR5512000R202
	Dialogue cable 35 AK 10, 35 PO 90 – 35 AB 50/PC	
	R1 2.5 m	GJR5139300R1
	R2 5 m	GJR5139300R2
	R3 10 m	GJR5139300R3
	R4 20 m	GJR5139300R4
	Dialogue cable 35 AK 20, 35 PO 90 – 35 RC 50	
	R1 1 m	GJR5142000R1
	Engine speed set value cable 35 AK 30	
	R1 2.5 m	GJR5139500R1
	R2 5 m	GJR5139500R2
	Initiator cable 35 AK 40	
	R1 2.5 m	GJR5139600R1
	R2 5 m	GJR5139600R2
	Locator cable 35 AK 60	
	R5 5 m	GJR5142200R5
	R6 10 m	GJR5142200R6
	R7 20 m	GJR5142200R7
	Locator cable 35 AK 70 for AXODYN® Inverter, DRH range	
	R1 2.5 m	GJR5142300R1
	Incremental locator (for adaptor flanges with a 50 mm pick-up bore)	
	500 Pulses per revolution	GJV3075101R1
	1000 Pulses per revolution	GJV3075101R2
	Proximity sensors	
	NJ 5–18 GK 50–E3 (closed-circuit current)	GJV3200001R2
	NJ 5–18 GK 50–E2 (working current)	GJV3200003R2
35 AE 92 R4	Axis card to control 2 axes	GJR5137200R4
35 AE 92 R5	Axis card to control 4 axes	GJR5137200R5
35 AE 92 R6	4-fold incremental input	GJR5137200R6

IC Central units

Type	Description	Order Number
935 IR 86 R101	Software for the central unit IC (industrial computer with a 14 K instruction user program, bit and word processing, blocks, 2 serial interfaces, buffered flag range)	GJR5122700R101

Video Sensor, OMS-F

Type	Description	Order Number
	Opto-electronic measuring and sensor system OMS-F, optical length measurement and planimetry parallel in 8 freely programmable windows, determining the area point of gravity and histogram analysis, control and evaluation by the PLC central units	
35 CI 90 R101	Camera interface	GJR5146000R101
35 IP 90 R1	Iconic image processor	GJR5145900R1
	Sensor periphery unit	upon request

Binary input units

Type	Description	Order Number
35 EB 90 R2	Binary input unit, 24 V DC, isolated, 64-fold	GJR5132100R2
07 EM 61 R1	Input module, 24 V DC, isolated, 8-fold	GJR5210800R1
35 SK 90 R3	Ribbon cable for I/O-units	GJR5135000R3
35 EB 91 R1	Binary input unit, 24 V DC input signals with LED, not isolated, 32-fold, input delay typically 8 ms	GJR5142600R1
35 EB 91 R2	Binary input unit, 48 V DC input signals with LED, not isolated, 32-fold, input delay typically 8 ms	GJR5142600R2
35 EB 92 R1	Binary input unit, 24 V DC input signals with LED, not isolated, 32-fold, input delay typically 8 ms	GJR5145800R1
35 EB 92 R2	Binary input unit, 48 V DC input signals with LED, not isolated, 32-fold, input delay typically 8 ms	GJR5145800R2

Analog input units

Type	Description	Order Number
35 TP 90 R1	Carrier board for accepting up to 4 input modules	GJR5143600R1
35 EA 90 R1	Input module for 8 analog signals, ± 10 V or. ± 5 V, for the installation in 35 TP 90 R1	GJR3073002R1
35 EA 91 R1	Input module for 8 analog signals, 4 ... 20 mA, for the installation in 35 TP 90 R1	GJR3073003R1
35 EA 92 R1	Input module for 4 analog signals Pt100, for the installation in 35 TP 90 R1, -50 °C ... +150 °C	GJR3073004r1
35 EA 92 R2	Input module for 4 analog signals Pt100, for the installation in 35 TP 90 R1, -50 °C ... +400 °C	GJR3073004R2

Binary output units

Type	Description	Order Number
35 AB 90 R1	Binary output unit, 24 V DC, isolated, 64-fold	GJR5132200R1
07 LM 61 R1	Lamp driver level, 24 V DC/120 mA, short-circuit-proof, with LED, 8-fold	GJR5210900R1
07 AM 62 R2	Reed relay switch level, 60 V DC/100 mA, with LED, 8-fold	GJR5214500R2
07 SK 90 R3	Ribbon cable for für 07 LM 61 R1 or 07 AM 62 R2, Socket connector with 34 poles and 2 x 16 poles, 1.5 m	GJR5135000R3
07 TM 61 R1	Transistor switch level, 24 V DC/2 A, with LED, 4-fold	GJR5211100R1
07 RM 61 R1	Relay switch level 220 V AC/4 A, with LED 4-fold	GJR5211000R1
35 SK 91 R3	Ribbon cable for 07 TM 61 R1 or 07 RM 61 R1, Socket connector with 32 poles and 4 x 8-poles, 1.5 m	GJR5135100R3
35 AB 94 R1	Binary output unit, 24 V DC/100 mA, with LED, not isolated, 32-fold	GJR5142800R1
35 AB 95 R1	Binary output unit, 24 V DC/0,5 A, with LED, isolated, total load 8 A, 32-fold	GJR5145600R1
35 AB 96 R1	Binary output unit, 250 V AC and/or DC/2 A, with LED, isolated, 4 changeover contacts, 12 make contacts, 16-fold	GJR5142900R1
35 AB 97 R2	Binary output unit, 24 V DC/2 A, with LED, isolated, total load 8 A, 16-fold	GJR5145700R2

Analog output units

Type	Description	Order Number
35 AA 92 R2	Analog output unit ± 10 V, 16 bit resolution, 4-fold	GJR5143000R2

Communication units

Type	Description	Order Number
35 KP 91 R101	Communication processor for the connection to the Master via an EXCOM interface, 2 serial interfaces	GJR5146100R101
35 KP 92 R101	Communication processor for the connection to a VERITRON converter PAD type, 2 serial interfaces	GJR5146400R101

Area bus coupling units for the ABB field bus ZB10

Type	Description	Order Number
35 ZB 91 R1	ABB Procontic T300 – ABB field bus ZB10 coupler	GJR5143500R1

System cables

Type	Description	Order Number
35 SK 93 R1	Connecting cable for the serial interface RS422, 25-polar socket – 25-polar socket, 5m	GJR5135400R1
35 SK 93 R11	Extension cable for the serial interface RS422 (35 SK 93 R1),	GJR5135400R11
35 SK 94 R2	Connecting cable for V24 interface RS232 for 07 PC 31/07 PC 32 with 35 DS 90, 35 DS 91 35 ZE 93 and 07 ZV 86 as well as 35 BS 95 with 07 ZV 86, 25-polar socket – 25-polar socket, 5m	GJR2370500R2
35 SK 95 R1	Extension cable for the V24 interface RS232 (35 SK 94 R1), 0.25 m	GJR2371000R1
35 SK 97 R1	Connecting cable for the V24 interface RS232 for 07 PC 32/07 PH 31 with 35 DS 90, 35 DS 91 and 35 ZE 93, 9-polar socket – 25-polar socket, 3m	

Service aid units

Type	Description	Order Number
35 SH 90 R1	Bus extension card for separating and measuring all bus lines	GJR5136700R1
35 SH 91 R1	Bus display for displaying the status of the addresses, data and controlled signals on the multiprocessor-based control bus	GJR5136500R1
35 SH 94 R1	Axis simulator, for the simulation of the automatic control unit, the motor and the actual value pulse generator	GJR3074201R1

Accessories

Type	Description	Order Number
35 ST 90 R1	Front connector for I/O-units	GJR5144900R1
35 SB 90	Label for the front connector with 9 insert strips and 9 sticky strips each for the units	
35 SB 90 R1	35 EB 91 R1	GJR5144600R1
35 SB 90 R2	35 EB 91 R2	GJR5144600R2
35 SB 90 R3	35 EB 92 R1	GJR5144600R3
35 SB 90 R4	35 EB 92 R2	GJR5144600R4
35 SB 90 R5	35 AB 94 R1	GJR5144600R5
35 SB 90 R6	35 AB 95 R1	GJR5144600R6
35 SB 90 R7	35 AB 96 R1	GJR5144600R7
35 SB 90 R8	35 AB 97 R1	GJR5144600R8
35 BA 60 R1	Blanking cover for 1 slot	GJV5135200R1
07 LB 20 R1	Spare lithium battery	GJR5223500R1
35 LE 90 R1	Lithium battery modules	GJR5146300R1

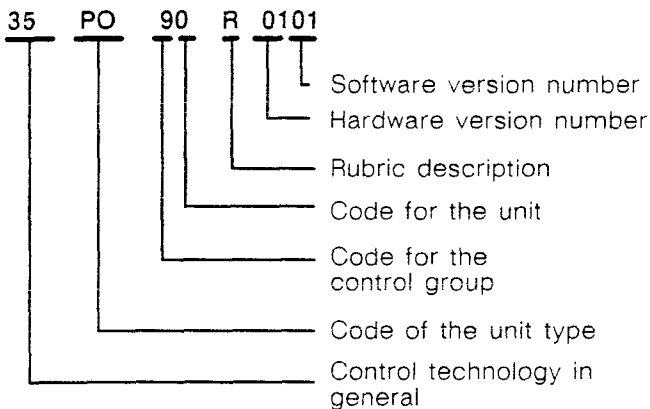
4 Information on Ordering

General ABB Procontic description system

A unit or a component is described functionally by the type description in the control system ABB Procontic T300. The development consultation is carried out using the order number. ABB Procontic units are described in accordance with the following rules:

a) Type description

Example:



Note: The preceding zeroes of the hardware or software version numbers can be omitted, e.g., 35 PO 90 R101 and 35 PO 60 R0101 or 35 EK 90 R1 and 35 EK 90 R0001 are the same. The shorter form is preferred.

Codes of the unit types

GS	Subrack
NE	Power-supply unit
EK	Level coupler
SK	System cable
ZP	Central processor
DS	Data interface
PS	Memory unit
ZE	Central unit
IR	Industrial computer
KI	Camera interface
IV	Iconic processor
AE	Axis card
PO	Positioning unit
EB	Binary input unit
TP	Carrier board
EA	Analog input unit
AB	Binary output unit
AA	Analog output unit
KP	Communication processor
ZB	ABB field bus coupler
SH	Service aid units
FB	Blanking cover
ST	Front connector

b) Order number

Example: GJV3074301R1

Units, which are similar to a large extent but are not completely identical, are distinguished by the rubric description with the hardware and software version numbers. The rubric data in the type description and in the order number are the same.

c) Order data

The order data must include the **complete type descriptions and order numbers** in order to guarantee a perfect supply.

5 Customer Training

Asea Brown Boveri offers seminars to support configuring, starting and operating ABB Procontic T300 controls. Seminars are also carried out on the customer's premises, if required.

Detailed information is included in the leaflet, "Seminars for factory automation", which you can request from:

ABB Schalt- und Steuerungstechnik GmbH
Abteilung: SST/MV
Eppelheimer Straße 82
D-6900 Heidelberg 1
Telephone (06221) 777-135
Telefax (06221) 777-111

The registration is carried out directly at the above mentioned address or via our distribution centres:

ABB Schalt- und Steuerungstechnik GmbH
Vertriebszentrum Nord
Hildesheimer Straße 25
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D-3000 Hannover 1
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ABB Schalt- und Steuerungstechnik GmbH
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Dudenstraße 44
P. O. Box 10 03 51
D-6800 Mannheim
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P. O. Box 609
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Telephone (0711) 2059-300
Telefax (0711) 29 06 76
Telex 722567 bbcb d

The following seminars for the ABB Procontic T300 are on offer:

Programmable controllers Seminar concerning the principles

- Contents: Getting to know the ABB Procontic controls and their components, learning the programming language, programming with the personal computer, practical exercises on ABB Procontic systems, configuration instructions, independent configuration using given tasks together with starting up a system model
- Aim: Independent configuration of a system model with the ABB Procontic PLC.
- Prerequisite: Knowledge of the general control technology
- Duration: 5 days

ABB Procontic T300 configuration seminar

- Contents: Components of the ABB Procontic T300, extension possibilities, networking, programming of the ABB Procontic T300, practical exercises concerning the binary, word and analog processing, configuration with function blocks, setting up your own user blocks, applications for the control of various system models
- Aim: Independent configuration of a system model with ABB Procontic T300
- Prerequisite: Knowledge of the general control technology.
- Duration: 5 days

ABB Procontic T300 maintenance seminar

- Contents: Getting to know the ABB Procontic T300 components, learning the ABB Procontic programming language, composing the hardware, starting a system model with fault-finding in the ABB Procontic T300 PLC in the range of the coupling level and in the system model.
- Aim: Independently starting a system model and finding the faults with ABB Procontic T300.
- Prerequisite: Knowledge of the general control technology
- Duration: 5 days

6 Maintenance Services and Support

Services

We have a qualified service department in order to be able to help with difficult problems as well.

- Consultation by telephone
- Malfunction analyses and removal from the machine/system
- Support when compiling programs
- Training of the personnel in the factory
- Leasing programming units

If you wish to consult our service department, we request you to take the corresponding preparations depending on the desired service, like, e.g.:

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

Inquiries and orders are to be directed to:

ABB Schalt- und Steuerungstechnik GmbH
Abteilung SST/VPS
Eppelheimer Straße 82
D-6900 Heidelberg 1

Telephone (06221) 777-210
Telefax (06221) 777-113

Support

Our range of services also includes the following:

- Supply of spare units
- Repairing faulty units and systems

Inquiries and orders are to be directed to:

ABB Schalt- und Steuerungstechnik GmbH
Abteilung SST/OA
Neuer Weg 47
D-6930 Eberbach

Telephone (06271) 81-467

7 Application department

The modular multiprocessor-based controller ABB Procontic T300 represents a competent range of units and standard software for the user's applications.

The application department is responsible for advising the customer when selecting the suitable system in the respective special case of application and, if desired, undertaking the compilation of user programs as a service.

The possibility of using the ABB know-how in the sector of factory automation exists in this way.

The application department offers the following:

- Cooperation when specifying the control task and when determining the suitable system configuration
- Compiling user programs in the form of PLC instruction lists or function block diagrams for ABB Procontic T300
- Executing commissioning

The basis for the execution of applications is a deadline schedule worked out with the user, which is constantly followed together with a project leader known to the user.

You can contact the application department under the following address:

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8 Advice and addresses

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

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