







## Summary

### Technical characteristics

General characteristics .....	27/5
Bus System .....	27/5
Central units .....	27/6

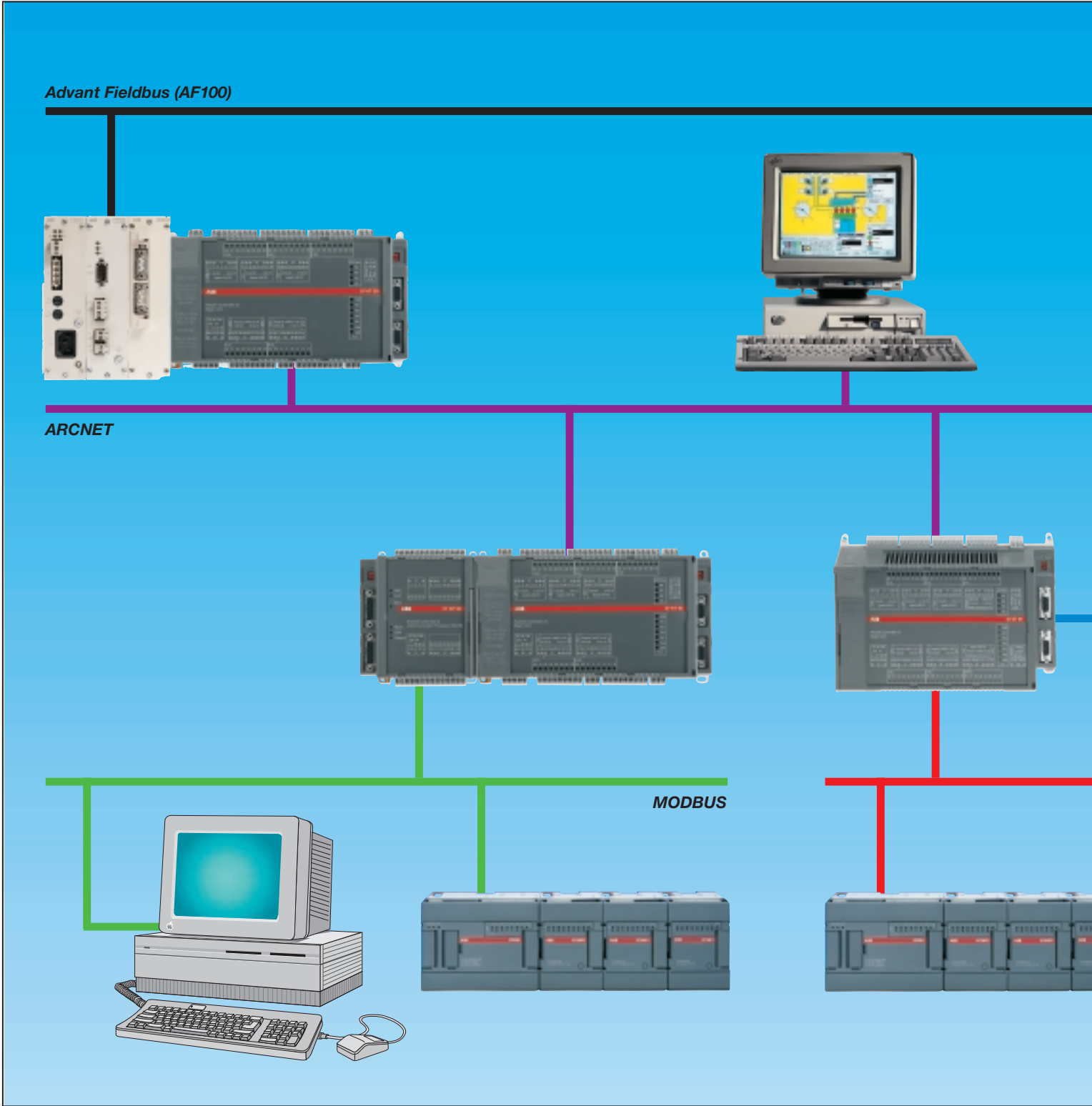
### Order references

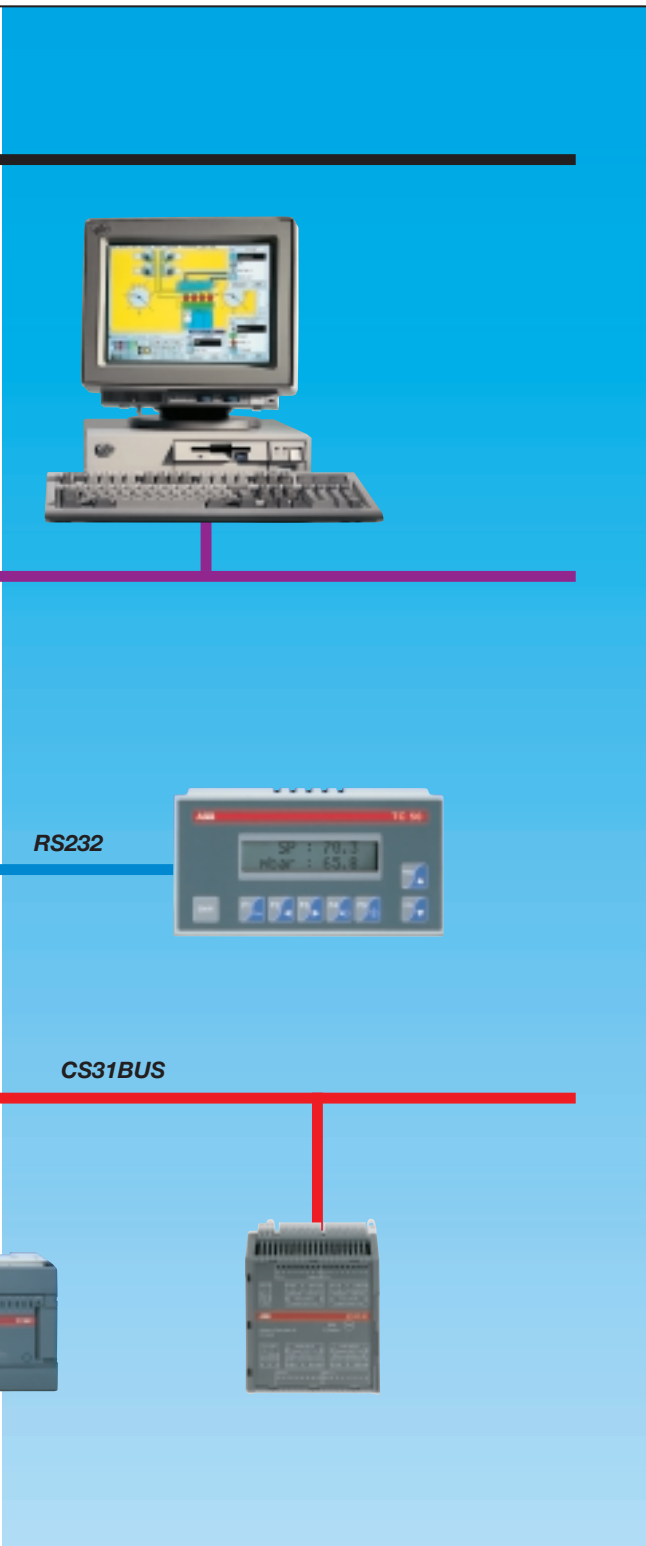
Central units .....	27/8
Remote units and extensions .....	27/9
Couplers .....	27/11
Displays .....	27/12
Programming softwares .....	27/13
Cables and bus accessories .....	27/14
Accessories and documentations .....	27/15

### Technical data

Dimensions .....	27/16
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# AC31 Automation





## The AC31 range: extensive possibilities

The AC31 range now offers flexibility and a wide scope for application.

### Total compatibility of the operational modules

4 series of operational modules can be programmed with one of the programming languages:

- the 40 series
- the 50 series
- the 90 series
- the 30 series

Modules with added possibilities:

- digital processes
- analog processes
- displays
- communication

### Multimode communication

- CS31BUS
- MODBUS®
- ARCNET®
- PROFIBUS®
- AF100®
- ASCII
- telephone line (with standard modems)

All units are developed, tested and produced according to the standard IEC 1131-2.

All products have CE marking and have been approved by:

BV (France), GL (Germany), LRS (Great Britain), RINA (Italy), DNV (Norway).

*Windows® is a registered trademark of Microsoft*

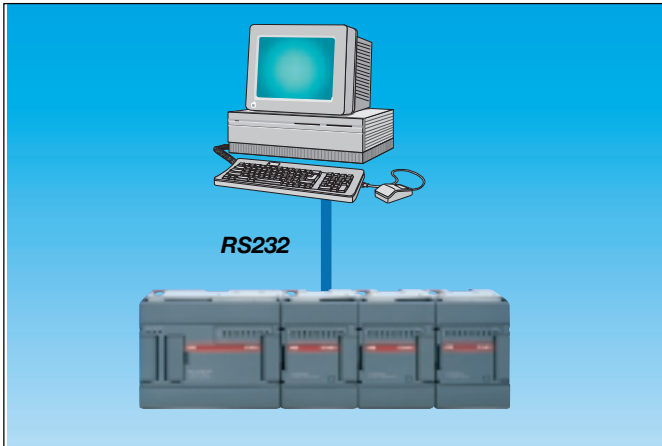
*Modbus® is a registered trademark of Modicon*

*Arcnet® is a registered trademark of Motorola*

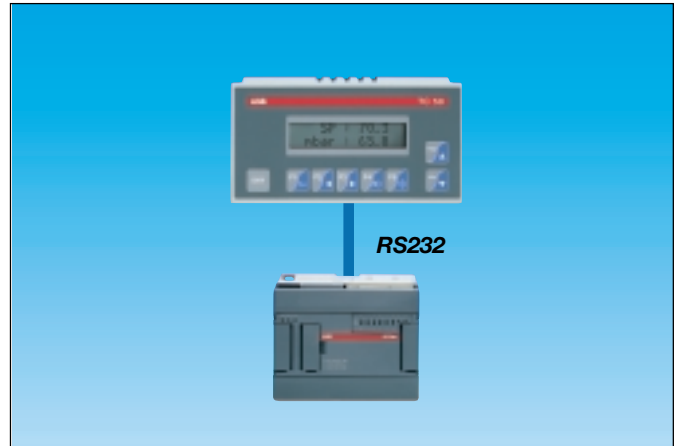
*Profibus® is a registered trademark of Profibus Nutzer Organization*

*AF100® is a registered trademark of ABB*

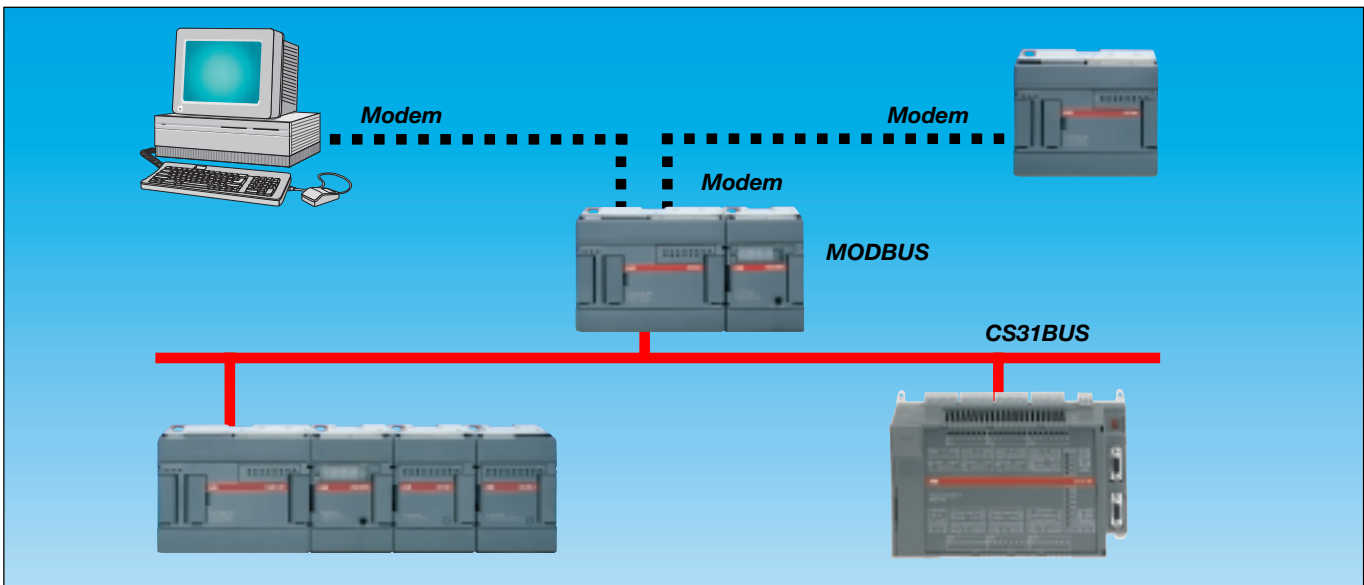
# AC31 Automation



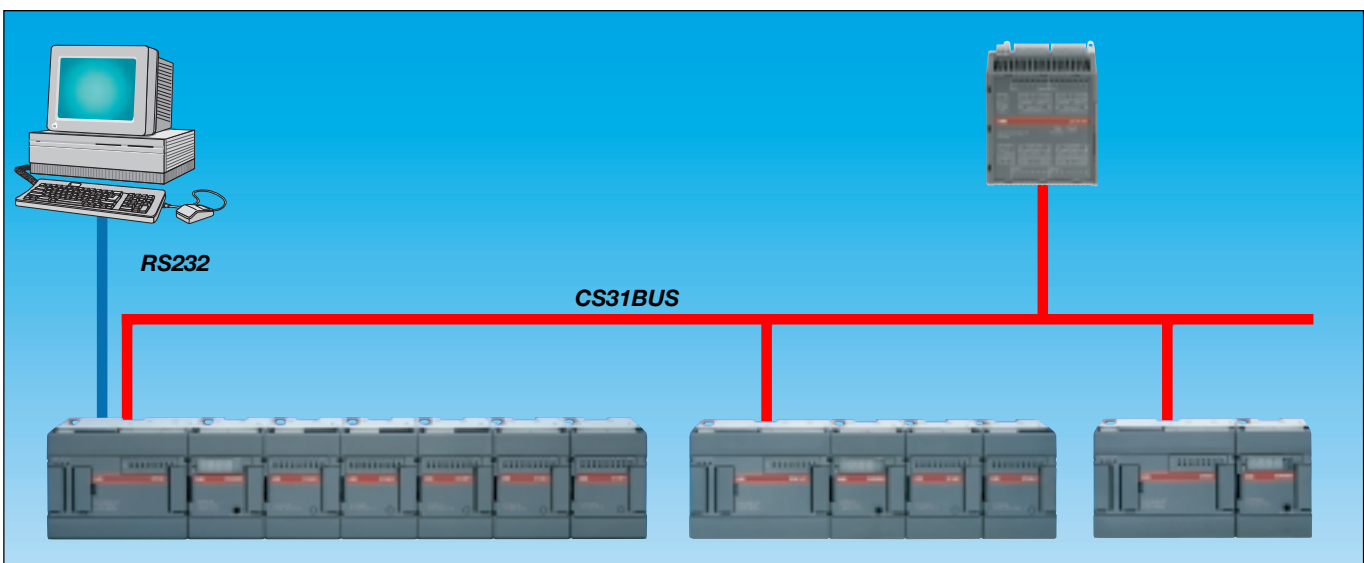
Programming and supervision



Visualisation



Data transmission - Remote control

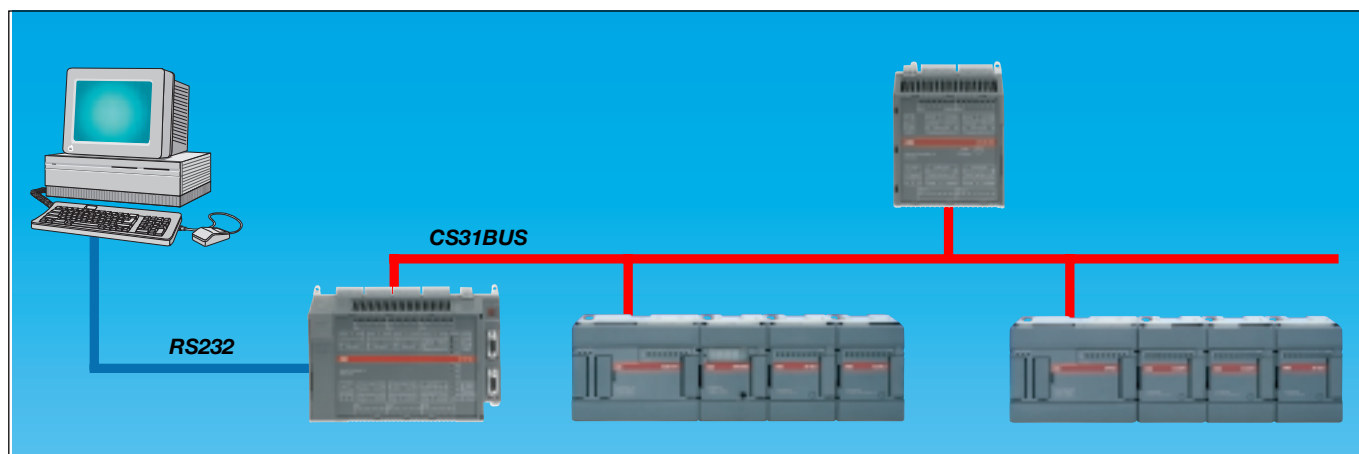


Decentralized, intelligent automation on fieldbus

## General characteristics

<b>Operating conditions</b>	Operation temperature	0 °C to + 55 °C
	Storage temperature	- 40 °C to + 75 °C
	Transport temperature	- 25 °C to + 75 °C
	Humidity yearly average	≤ 75 %
	Humidity up to 30 days per year	≤ 95 %
	Humidity occasional	≤ 85 %
	Atmospheric pressure	≥ 800 hPa
<b>Mechanical data</b>	Degree of protection	IP 20
	Housing	UL V2 for 40 and 50 series UL V0 for 30 and 90 series
	Vibration	IEC 68-2-6 FC test
	Shocks	IEC 68-2-27 Ea test
<b>Power supply</b>	24 V d.c.	19.2 ... 30 V d.c. (- 20 % ... + 25 %)
	120 V a.c. / 230 V a.c. 50 / 60 Hz	112.8 ... 127.2 V a.c. (- 6 % ... + 6 %) 195.6 ... 253 V a.c. (- 15 % ... + 10 %)
<b>Creepage distance and clearance</b>		IEC 664 and DIN VDE 0160
<b>Isolation test</b>		IEC 1131-2
<b>Electromagnetic compatibility</b>	Electrostatic discharge	IEC 1000-4-2 (Level 3)
	<b>Radiated electromagnetic field</b>	
	Immunity tests	IEC 1000-4-3 (Level 3)
	Fast transient burst test	IEC 1000-4-4
	Surge immunity	IEC 1000-4-5
	High frequency conducted	IEC 1000-4-6

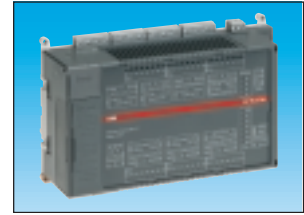
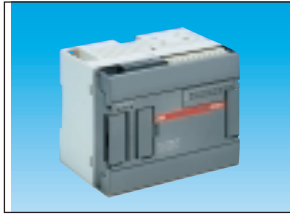
## CS 31 bus



<b>Communication</b>	serial
<b>Standard</b>	RS 485 (shielded twisted pair)
<b>Baud rate</b>	187.5 kbaud
<b>Protocol</b>	ABB CS 31 (master slave)
<b>Transmission control</b>	CRC8
<b>Number of AC 31 interfaces</b>	31 max.
<b>Maximum length</b>	500 meters or 2000 meters (with repeaters)
<b>Bus redundancy</b>	yes, with NCBP
<b>Refresh time</b>	2 ms min or 12 ms typical value for 31 AC 31 interfaces

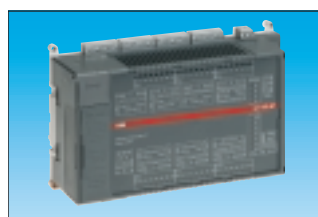
# Central units

## AC 31



Details	40 series central unit 07 CR 41 / 07 CT 41	50 series central unit 07 KR 51 / 07 KT 51	90 series central unit 07 KT 94
CS 31 twisted pair	no	yes	yes
Program memory with on line modification without on line modification support	17 kBytes 34 kBytes Flash EPROM and RAM	17 kBytes 34 kBytes Flash EPROM and RAM	240 kBytes 240 kBytes Flash EPROM and RAM
Memory card			Smart Media card (Flash 2 Mbytes) for data and program
Cycle time for 1 kbyte 100 % binary 65 % binary 35 % word	0.4 ms 1.2 ms	0.4 ms 1.2 ms	0.25 ms
Number of inputs / outputs I/O binary incorporated I/O max. I/O analog incorporated I/O max.	8 In and 6 Out 56 In and 30 Out – 24 In and 12 Out	8 In and 6 Out typ 1000 – 258 In and 224 Out	24 In, 16 Out and 8 Conf typ 1000 8 In and 4 Out 224 In and 224 Out
Back up data (choice)	–	incorporated battery	07 LE 90 external battery
Real time clock	no	yes	yes
Programming language	AC31GRAF	AC31GRAF	AC31GRAF
Program execution	2 cyclic tasks	2 cyclic tasks	
Sub programs	yes (12)	yes (12)	
User program protection	password	password	
Incorporated potentiometers	2 (modifiable parameters)	2 (modifiable parameters)	–
Data memory bits words (16 bits) double words (32 bits) step chains (16 steps) (all outputs variables, binary or analog may be used as variables)	2016 2016 128 2016	2016 2016 128 2016	8192 8192 1024 4096
Timers	Unlimited (42 simultaneous)	Unlimited (42 simultaneous)	Unlimited
Counters	Unlimited (function)	Unlimited (function)	Unlimited
High speed counter (Counter and sensor inputs used in place of binary inputs)	1 (5 kHz) with encoder or 2 (7 kHz) independent	1 (5 kHz) with encoder or 2 (7 kHz) independent	2 (50 kHz)
Special functions	MODBUS protocol, PI and PID regulator  ASCII communication	MODBUS protocol, PI and PID regulator CS31 bus switchable on MODBUS slave ASCII communication	protocol ARCNET, MODBUS PI and PID regulator 32 bits arithmetic ASCII communication
Connection	Europe type pull-out or "cage-clamp" type	Europe type pull-out or "cage-clamp" type	Europe type pull-out
Assembly	on 35 mm profile DIN rail	on 35 mm profile DIN rail	on 35 mm profile DIN rail

## Central units



<b>90 series central unit 07 KT 95</b>
yes
240 kBytes 240 kBytes Flash EPROM and RAM
Smart Media card (Flash 2 MBytes) for data and program
0.25 ms
12 In, 8 Out typ 1000 4 In and 2 Out 224 In and 224 Out
07 LE 90
yes
907 AC 1131
Multi tasking
yes
password
-
8192 8192 1024 256
Unlimited
Unlimited
2 (50 kHz)
MODBUS protocol PI and PID regulator
32 bits arithmetic ASCII communication
Europe type pull-out
on 35 mm profile DIN rail

<b>90 series central unit 07 KT 96</b>
yes
240 kBytes 240 kBytes Flash EPROM and RAM
Smart Media card (Flash 2 MBytes) for data and program
0.25 ms
24 In, 16 Out typ 1000 - 224 In and 224 Out
07 LE 90
yes
907 AC 1131
Multi tasking
yes
password
-
8192 8192 1024 256
Unlimited
Unlimited
2 (50 kHz)
MODBUS protocol PI and PID regulator
32 bits arithmetic ASCII communication
Europe type pull-out
on 35 mm profile DIN rail

<b>90 series central unit 07 KR 97</b>
yes
240 kBytes 240 kBytes Flash EPROM and RAM
Smart Media card (Flash 2 MBytes) for data and program
0.25 ms
24 In, 16 Out and 8 Conf typ 1000 8 In and 4 Out 224 In and 224 Out
07 LE 90
yes
907 AC 1131
Multi tasking
yes
password
-
8192 8192 1024 256
Unlimited
Unlimited
2 (50 kHz)
protocol ARCNET, MODBUS, PROFIBUS PI and PID regulator 32 bits arithmetic ASCII communication
Europe type pull-out
on 35 mm profile DIN rail

<b>90 series central unit 07 KT 93-S</b>
yes
56 kBytes 56 kBytes Flash EPROM and RAM
0.7 ms
24 In and 16 Out typ 1000  96 In and 96 Out
external battery
yes
907 PC 331
1 task
-
4096 4096 512 128
Unlimited (80 simultaneous)
Unlimited
1 (10 kHz)
security equipment protocol PDnet, MODBUS PI und PID regulator 32 bits arithmetic ASCII communicatio,n
Europe type pull-out
on 35 mm profile DIN rail

# AC31 central units

## Order references



07 CR 41

SB7687C3



07 KR 51

SB7684C3



07 KT 94

SB7871C3

### 40 series central units

Extensible with a maximum of 6 extensions, centralized with up to about 110 binary inputs/outputs (24 V d.c.) or 36 analog I/O or combination of binary and analog - PNP and NPN - Electrically insulated - Binary inputs 24 V d.c. Relay outputs 250 V a.c. / 2 A - Transistor outputs 24 V d.c. / 2 x 1 A, 4 x 0.5 A - RS 232 serial link for programming, ASCII, Modbus®.

Incorporated inputs	Incorporated outputs	Program memory on-line modification with	Program memory on-line modification without	Power supply	Type	Order code	Weight kg
8 binary	6 relays	17 kb	34 kb	24 V d.c.	07 CR 41	1SBP 26 0020 R1001	0.355
8 binary	6 relays	17 kb	34 kb	120/230 V a.c.	07 CR 41	1SBP 26 0021 R1001	0.800
8 binary	6 transistors	17 kb	34 kb	24 V d.c.	07 CT 41	1SBP 26 0022 R1001	0.355

### 50 series central units

Centralized, extensible with a maximum of 6 extensions up to about 110 binary or 36 analog I/O, or a combination of binary and analog; decentralized with up to about 1000 inputs/outputs PNP and NPN - Electrically insulated - Binary inputs 24 V d.c. - Relay outputs 250 V a.c. / 2 A - Transistor outputs 24 V d.c. / 2 x 1 A, 4 x 0.5 A - RS 232 or RS 485 serial link for programming, ASCII, Modbus® Real-time clock - CS 31 bus suitable MODBUS slave protocol.

Incorporated inputs	Incorporated outputs	Program memory on-line modification with	Program memory on-line modification without	Power supply	Type	Order code	Weight kg
8 binary	6 relays	17 kb	34 kb	24 V d.c.	07 KR 51	1SBP 26 0010 R1001	0.355
8 binary	6 relays	17 kb	34 kb	120/230 V a.c.	07 KR 51	1SBP 26 0011 R1001	0.800
8 binary	6 transistors	17 kb	34 kb	24 V d.c.	07 KT 51	1SBP 26 0012 R1001	0.355

### 90 series central units

Decentralized with up to about 1000 inputs/outputs - Binary inputs 24 V d.c. Relay outputs 250 V a.c. / 2 A - Transistor outputs 24 V d.c. / 0.5 A - At least one RS 232 serial link for programming and ASCII - CS 31 bus - Real-time clock.

Incorporated inputs	Incorporated outputs	Program memory	Power supply	Type	Order code	Weight kg
24 binary	16 binary	56 kb	24 V d.c. (A)	07 KT 93-S	GJR 525 1300 R2171	1.600
24 binary	16 binary	240 kb	24 V d.c. (A)	07 KT 94	GJR 525 2100 R0101	1.300
8 analog	4 analog	240 kb	24 V d.c. (B)	07 KT 94	GJR 525 2100 R0161	1.300
12 binary 4 analog	8 binary 2 analog	240 kb	24 V d.c.	07 KT 95	GJR 525 2800 R0100	1.300
24 binary	16 binary	240 kb	24 V d.c.	07 KT 96	GJR 525 2900 R0101	1.300
24 binary 8 analog	16 binary 4 analog	240 kb	24 V d.c.	07 KT 97	GJR 525 3000 R0101	1.300
24 binary 8 analog	16 binary 4 analog	240 kb	24 V d.c. (B)	07 KT 97	GJR 525 3000 R0160	1.300
24 binary 8 analog	16 binary 4 analog	240 kb	24 V d.c. (C)	07 KT 97	GJR 525 3000 R0120	1.300
24 binary 8 analog	16 binary 4 analog	240 kb	24 V d.c. (D)	07 KT 97	GJR 525 3000 R0162	1.300

(A) Contains a second RS 232 serial link for ASCII

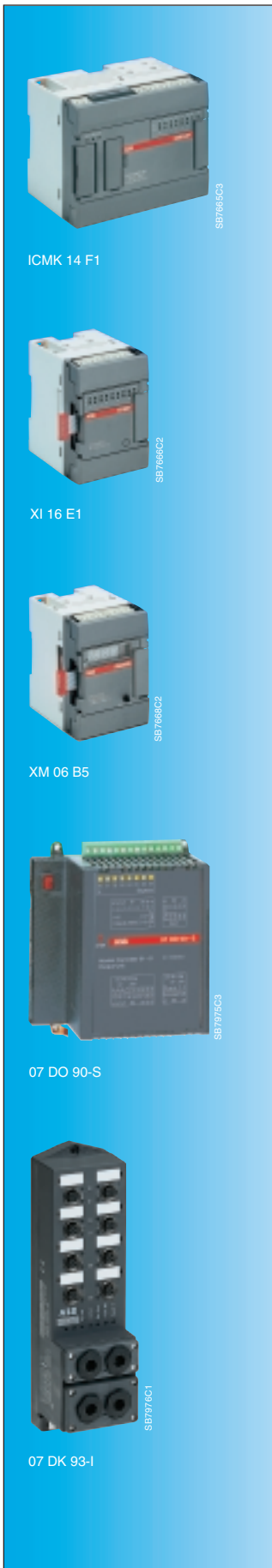
(B) Contains a second RS 232 serial link for ASCII MODBUS® and incorporated ARCNET® protocol.

(C) Contains a second RS 232 serial link for ASCII MODBUS® and incorporated Profibus® protocol.

(D) Contains a second RS 232 serial link for ASCII MODBUS® and incorporated ARCNET® and Profibus protocols.

# AC31 remote units and extensions

## Order references



### Extensible binary remote units

Extensible with a maximum of 6 extensions (6 binary or 2 analog and 4 binary) with up to about 110 binary or 12 analog and 78 binary I/O or combined within the given limits - PNP and NPN - Electrically insulated Binary inputs 24 V d.c. - Relay outputs 250 V a.c. / 2 A - Transistor outputs 24 V d.c. / 2 x 1 A, 4 x 0.5 A CS 31 bus.

Incorporated inputs	Incorporated outputs	Power supply	Type	Order code	Weight kg
8 binary	6 relays	24 V d.c.	ICMK 14 F1	1SBP 26 0050 R1001	0.355
8 binary	6 relays	120/230 V a.c.	ICMK 14 F1	1SBP 26 0051 R1001	0.800
8 binary	6 transistors	24 V d.c.	ICMK 14 N1	1SBP 26 0052 R1001	0.355

### Binary extensions for 40 and 50 series central units and ICMK remote units

Powered by either central or remote unit.

Incorporated inputs and outputs	Type	Order code	Weight kg
16 binary inputs 24 V d.c.	XI 16 E1	1SBP 26 0100 R1001	0.220
16 transistors outputs 24 V d.c. / 0.5 A	XO 16 N1	1SBP 26 0105 R1001	0.220
8 relays binary outputs 250 V a.c. / 2 A	XO 08 R1	1SBP 26 0101 R1001	0.220
8 configurable inputs/outputs 24 V d.c. - 24 V d.c. / 0.5 A	XC 08 L1	1SBP 26 0102 R1001	0.220
4 relays inputs 24 V d.c. and 4 relays outputs 250 V a.c. / 2 A	XK 08 F1	1SBP 26 0104 R1001	0.220

### Analog extensions for 40 and 50 series central units and ICMK remote units

Powered by either central or remote unit.

Incorporated inputs and outputs	Type	Order code	Weight kg
4 inputs, -/+ 10V, 0... 20 mA, 4...20 mA, Pt100, Pt1000 2 outputs, -/+ 10V, 0... 20 mA, 4...20 mA	XM 06 B5	1SBP 26 0103 R1001	0.220
8 inputs, -/+ 10V, 0... 20 mA, 4...20 mA, Pt 100, Pt 1000	XE 08 B5	1SBP 26 0106 R1001	0.220

### Remote binary input units

Binary inputs 24 V d.c. - CS31 bus - Electrically insulated from bus.

Incorporated inputs	Signal	Type	Order code	Weight kg
32	possible input delay 7 ms	07 DI 92	GJR 525 2400 R0101	0.250
16	1 ms delayed input	07 DI 93-I*	GJV 307 5613 R0202	0.750
8	5 ms delayed input	07 DI 90-S**	GJR 525 0900 R0202	0.450

\* Protection factor IP 67, plug and accessories  
\*\* Only in connection with 07 KT 93-S

### Remote binary output units

CS31 bus - Electrically insulated from bus.

Incorporated outputs	Type	Order code	Weight kg
8 relays (24 V d.c.)	07 DO 93-I*	GJV 307 5611 R0202	0.750
8 transistors (24 V d.c., 0.5 A)	07 DO 90-S**	GJR 525 0800 R0202	0.470

\* Protection factor IP 67, plug and accessories  
\*\* Only in connection with 07 KT 93-S

### Remote binary I/O units

Binary inputs 24 V d.c. - Relay outputs 250 V a.c. / 2 A - CS31 bus - Electrically insulated from bus - 1 ms delayed input - Short circuit-proof and overload-proof.

Incorporated inputs	Incorporated outputs	Type	Order code	Weight kg
8	4	07 DK 93-I*	GJV 307 5623 R0202	0.750

\* Protection factor IP 67, plug and accessories

# AC31 remote units and extensions

## Order references



07 DC 92

SB7977C3



ICSO 08 Y1

ICSO 08 Y1



07 AC 91

SB7978C3



ICSA 04 B5

ICSA 04 B5



ECZ

SE7030C3

### Remote binary configurable I/O units

**Binary inputs 24 V d.c. - Relay outputs 250 V a.c. / 2 A - CS31 bus - Electrically insulated from bus - 7 ms delayed input - Short circuit-proof.**

Incorporated inputs	Incorporated outputs	Configurable inputs / outputs	Type	Order code	Weight kg
16	8	8	07 DC 91	GJR 525 1400 R0202	0.750
		32	07 DC 92	GJR 525 2200 R0101	0.750

\* Protection factor IP 67, plug and accessories

### Remote binary output units

**CS 31 bus - Electrically insulated from bus - ECZ plug-in base necessary for mounting on DIN rail.**

Incorporated outputs	Power supply	Type	Order code	Weight kg
8 transistors (24V d.c./2 A - 8 A max.)	24 V d.c.	ICSO 08 Y1	FPR 331 1101 R1022	0.290

### Remote analog input units

**24 V d.c. - CS31 bus - Electrically insulated from bus - 07 AI 90-S safety oriented, internally redundant.**

Incorporated inputs (12 bit)	Inputs	Type	Order code	Weight kg
8	Pt100, +/- 50 mV, +/- 500 mV, +/- 5 V, +/- 10 V, 0...20 mA,	07 AI 91	GJR 525 1600 R0202	0.250
4	4... 20 mA	07 AI 90-S**	GJR 525 1200 R0202	0.250

\*\* Only in connection with 07 KT 93-S

### Remote analog I/O units

**24 V d.c. - CS31 bus - Electrically insulated from bus.**

Incorporated inputs and outputs	Type	Order code	Weight kg
16 configurable inputs / outputs or 8 inputs/ 8 outputs	0... 10 V - 0...20 mA / 4...20 mA - 8 bit +/- 10 V - 0... 20 mA/4... 20 mA - 12 bit	07 AC 91	GJR 525 2300 R0101

### Remote analog output units

**CS 31 bus - Electrically insulated from bus and main (up to 230 V a.c.) - The outputs can be configured separately ECZ plug-in base necessary for mounting on DIN rail.**

Incorporated outputs	Power supply	Type	Order code	Weight kg
4 binary (- 10... + 10 / 0... 20/4... 20 (12 bits)	24 V d.c.	ISCA 04 B5	FPR 334 1501 R 1042	0.355
4 binary (- 10... + 10 / 0... 20/4... 20 (12 bits)	230 V a.c.	ISCA 04 B5	FPR 334 1501 R 0046	0.800

### Remote counter unit

**Maximum counting speed 50 kHz**

**5 selectable operation modes: 1 counter for 32 bit incremental position transducer - 1 32 bit bidirectional counter 1 32 bit up-counter accumulating - 3 independent bidirectional 16 bit counters - 3 independent 16 bit frequency meters.**

**Inputs configurable for 5 V or 15 V/24 V operation - Electrically insulated from bus and main (up to 230 V a.c.)**

**CS 31 bus - ECZ plug-in base necessary for mounting on DIN rail.**

Incorporated inputs	Incorporated outputs	Power supply	Type	Order code	Weight kg
4 (24 V d.c.)	7 transistors (24 V d.c./0.5 A)	24 V d.c.	ICSF 08 D1	FPR 332 3101 R1012	0.250
4 (24 V d.c.)	7 transistors (24 V d.c./0.5 A)	230 V a.c.	ICSF 08 D1	FPR 332 3101 R0016	0.430

### Plug-in base for ICS remote units

Description	Type	Order code	Weight kg
Required for mounting 30 series on DIN rail or plate	ECZ	FPR 370 0001 R001	0.200

### Keyboard controller

**Keyboard controller for connection of control units with up to 32 keys or relays and 32 LEDs to the CS31 bus - 24 V d.c. - Without enclosure.**

Description	Type	Order code	Weight kg
Keyboard controller	07 TC 90	GJR 525 1800 R0101	0.100
Keyboard controller (updated electronics, smaller dimensions) not compatible for connection to 07 TC 90	07 TC 91	GJR 525 2700 R0101	0.100

# AC31 couplers

## Order references



07 MK 92

### 90 series communication couplers

Description	Power supply	Type	Order code	Weight kg
RCOM protocol, master/slave interface	24 V d.c. (A)	07 KP 90	GJR 525 1000 R0303	0.450
IEB coupler serial coupling	24 V d.c. (A)	07 KP 91	1SAY 11 0165 R0003	0.450
MC-based communication processor freely programmable in high-level language 4 RS 232 / RS 422 / RS 485 serial links	24 V d.c.	07 MK 92	GATS 110 098 R1161	0.450
MODBUS protocol, 2 communication channels master and slave mode RS 232 / 485 links	24 V d.c.	07 KP 93	GATS 110 100 R1161	0.400
Master Field Bus (MFB): communication module for the connection of AC31 to the ABB Master Field Bus (MFB). Communication with MFB over RS485 interface		07 KP 94	GJR 525 1700 R0101	0.400
Coupler for Advant@-Fieldbus AF 100 network	(A)	07 KP 95	GJR 525 2000 R0101	0.400
PDnet coupler for communication between devices of different manufacturers	24 V d.c. (A) (B)	07 KP 96	GATS 110 112 R0001 GATS 110 112 R0011 GATS 110 112 R0002 GATS 110 112 R0012 GATS 110 112 R0003 GATS 110 112 R0013	1.000
	coax			
	redundant coax			
	plastic optical waveguide			
	redundant plastic optical waveguide			
	glass fiber optical waveguide			
	redundant glass fiber optical waveguide			

(A) - Special communications software needed  
(B) - Refer to specific documentation for assortment

### Software packages including documentation and VE library (for 907 PC 331)

Protocol	Type	Order code	Weight kg
RCOM (for 07 KP 90)	907 KP 90	GJP 520 5200 R0202	
MFB (for 07 KP 94)	907 KP 94	GJP 520 6200 R0102	
AF100 (for 07 KP 95)	907 KP 95	GJP 520 6600 R0102	

# AC31 displays

## Order references



TC 50

SB7674C3

### TC50 display

Description	Power supply	Type	Order code	Weight kg
2 lines with 20 characters displays 7 operator keys + 5 function keys 128 pages with 6 data / page insertion 128 help messages + 128 information messages IP 65 front plate - RS 232 link to the central unit serial port - MODBUS® protocol or active mode. Delivered with connecting cables for 40 or 50 series central units.	24 V d.c	TC 50	1SBP 26 0150 R1001	0.500

### TC50 display software

Programming software for Windows® or Windows® NT. Delivered with connecting cable	TCWIN	1SBP 26 0280 R1001	0.500
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### TC50 display programming cables

Programming cable with TC50-PC, PC-Sub D9 connector	07 SK 55	1SBN 26 0205 R1001	
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### MT series display

**Active communication concept - Call-in of text by system, function keys or cursor - Treatment of error bit incorporated - History memory (up to 170 entries) - Free display of variables and editing (maximum 15 per text) Dynamic branching to menus - Internal function keys and planning of soft keys - Projection for 3 languages.**

Description	Type	Order code	Weight kg
2/144, 20/15, LCD, 4/8/-, ladbar/RS232	MT30	GATS 111 100 R0001	0.450
2/91, 20/21, VFD, 8/20/-, MODBUS Master/RS232	MT40	GATS 110 091 R0401	0.450
2/91, 20/21, VFD, 8/20/-, MODBUS Master/RS485	MT40	GATS 110 091 R0501	0.450
4/154, 40/27, LCD, 8/23/4, MODBUS Master/RS232	MT60	GATS 110 092 R0401	0.750
4/154, 40/27, LCD, 8/23/4, MODBUS Master/RS485	MT60	GATS 110 092 R0501	0.750

\* MT 45 in relation with hardware and projection identical to MT 40. Other interfaces on request

### MT series display software

Description	Type	Order code	Weight kg
for MT40/60	SPSPLUS	GATS 11 0095 R0001	
for MT30/45 - MT65	SPSPLUS	GATS 11 0095 R0003	

### MT series display programming cables

Description	Type	Order code	Weight kg
Programming cable for MT 30/40/45/60/65/91	VB30	GATS 11 0094 R0001	
Cable for serial link RS 485 MT40/45/60/65/91	VB69	1SAY 11 1103 R0001	

### Display extension (for series 40 and 50)

**Powered by either central or remote unit.**

Description	Type	Order code	Weight kg
Display with 4 BCD coded characters (8 data)	XTC 08	1SBP 26 0107 R1001	0.220



XTC 08

SB7784C3

# AC31 programming softwares

## Order references



### AC31GRAF programming software (for series 40, 50 and 07 KT 94)

Description	Type	Order code	Weight kg
Programming software for 40, 50, 30 and 90 serie central units. Compatible AC31 and CS31 ranges. Programming based on IEC61131-3. Can be used with Windows 3.xx, Windows 95 and 98 and Windows NT. Languages supported: instruction list, sequential function chart, ladder diagram, function block diagram. Additional editors: System Configuration - Dynamic variables test - Time Diagram - Graphical debugger (animate a graphic picture according to status of variables) - Document generator - User functions development tool	AC31GRAF	1SBP 26 0250 R1001	0.500
Licence for 5 users more in the same time of the programming software AC31GRAF This product doesn't include the programming software	DUPLICATION 5	1SBS 26 0255 R1001	
Licence for 10 users more in the same time of the programming software AC31GRAF This product doesn't include the programming software	DUPLICATION 10	1SBS 26 0256 R1001	

### 907 AC 1131 programming software (for series 90, 07 KT 95 up to 07 KT 97)

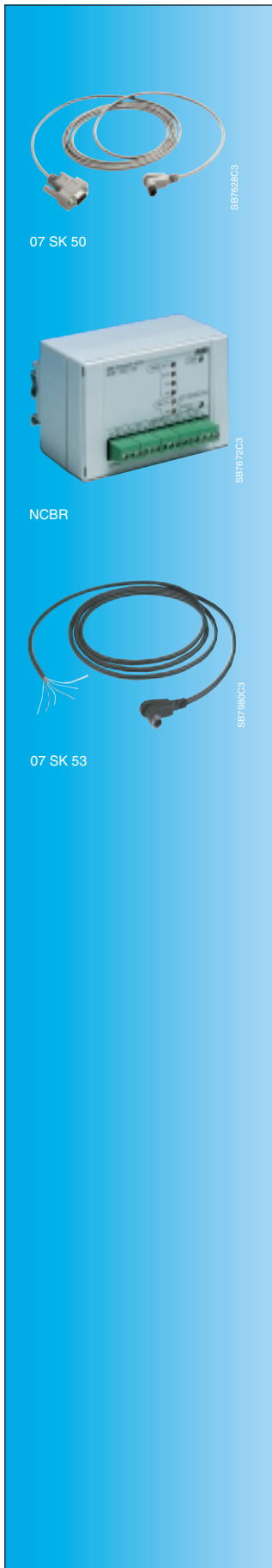
Description	Type	Order code	Weight kg
Programming and testing software according to IEC 61131-3 . Languages supported: instruction list, sequential function chart, ladder diagram, function block diagram, structured text. Offline simulation. Display for Windows 95 and Windowd NT. On CD-ROM with documentation	907 AC 1131	GJP 520 7000 R0102	

### 907 PC 331 programming software (for series 40, 50, 90)

Description	Type	Order code	Weight kg
Programming and testing software on MS.DOS, universal description of the programming interface without software (see below: 907 PC 331)	907 PC 33	GJP 520 4000 R0302	
Programming and testing software. Languages supported: instruction list, structured text, sequential function chart, ladder diagram, function block diagram. System specific part included. Software on floppy disk + documentation	907 PC 331	GJP 520 4600 R0402	
Additional package of security functions for 07 KT 93-S with security manual	907 PC 338	GJP 520 6800 R0102	

# AC31 cables and bus accessories

## Order references



### Programming cables

Description	Type	Order code	Weight kg
<b>Series 40 and 50</b> Programming cable with PC connector sub D9	07 SK 50	1SBN 26 0200 R1001	0,220
Programming cable with denuded wire / terminal connection	07 SK 52	1SBN 26 0202 R1001	0,220
<b>Series 30 and 90</b> Programming cable with PC connector sub D25	07 SK 90	GJR 525 0200 R0001	0,300

### CS31 bus accessories for series 50 and 90

Description	Power supply	Type	Order code	Weight kg
Bus amplifier for CS31 bus - maximum length 2000 m (3 repeaters)	24 V d.c.	NCB	FPR 347 1200 R1002	0,340
Bus amplifier with parallel redundancy, ring or 24 V d.c. star configuration		NCBR	FPR 347 1300 R1002	0,340

### Communication cables

Description	Type	Order code	Weight kg
<b>Series 40 and 50</b> Communication cable MODBUS®/ASCII with PC connector sub D9	07 SK 51	1SBN 26 0201 R1001	0,220
Communication cable for MODBUS®/ASCII with denuded wire / terminal connection	07 SK 53	1SBN 26 0203 R1001	0,220
<b>Series 90</b> Communication cable for MODBUS®/ASCII with PC connector sub D25 (A)	07 SK 91	GJR 525 0300 R0001	0,220
<b>TC50</b> Communication cable TC50 - central units series 40/50	07 SK 54	1SBN 26 0204 R1001	
Communication cable TC50 - central unit series 30/90	07 SK 57	1SBN 26 0207 R1001	
MT40 - AC31/MODBUS, series 90/07 KP 62, RS232, COM1/2	VB85	GATS 11 0093 R0001	
MT40 - MODBUS, 07 KP 93, RS232, COM3/4	VB57	1SAY 11 0600 R0001	
MT40 - AC31/MODBUS, series 50, RS232, COM1	VB66	1SAY 11 1101 R0001	
MT30/45/60/65/91 - AC31/MODBUS, series 90, AC31, RS232, COM1/2	VB86	GATS 11 0093 R0011	
MT30/45/60/65/91 - MODBUS, 07 KP 93, RS232, COM3/4	VB58	1SAY 11 0700 R0001	
MT30/45/60/65/91 - AC31/MODBUS, series 50, RS232, COM1	VB67	1SAY 11 1102 R0001	

(A) incl. Adapter Sub D25/9

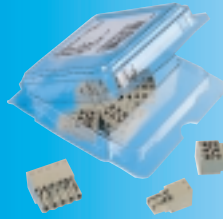
# AC31 accessories and documentations

## Order references



07 ST 50

SB7630C3



07 ST 54

SB7981C3

### Accessories

Description	Type	Order code	Weight kg
<b>Series 40 and 50</b> Double level connector for easy connection of three wire sensors and actuators (2 pieces)	07 ST 50	1SBN 26 0300 R1001	0.052
Double level connector for easy connection of analog sensors (2 pieces)	07 ST 51	1SBN 26 0301 R1001	0.052
Double spring connector for easy connection of three wire sensors and actuators (2 pieces)	07 ST 52	1SBN 26 0302 R1001	0.052
Spring connector set for central unit and bus modules	07 ST 54	1SBN 26 0311 R1001	0.052
Spring connector set for XI16E1/ XO16N1	07 ST 55	1SBN 26 0312 R1001	0.052
Spring connector set for XO08R1 / XC08L1 / XK08F1	07 ST 56	1SBN 26 0313 R1001	0.052
Spring connector set for XM06B5 / XE08B5	07 ST 57	1SBN 26 0314 R1001	0.052
Simulation device for central units, 8 switches	07 SG 50	1SAY 11 0811 R0001	0.100
Label for marking the I/O-channels		1SBN 26 0310 R1001	
<b>Series 90</b> Smart Memory Card for series 90	07 MC 90	GJR 525 2600 R0101	0.050
Battery for central units series 90	07 LE 90	GJR 525 0700 R0001	0.200

### Power supply devices

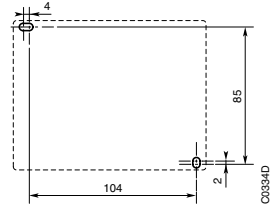
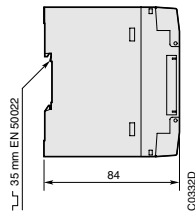
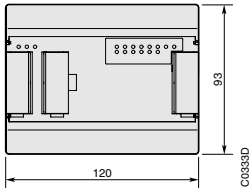
Description	Details	Type	Order code	Weight kg
Main supply	115 V a.c., 230 V a.c./24 V d.c., 2.5 A	07 NG 32	GJV 307 5601 R0001	2.300
Main supply	115 V a.c., 230 V a.c./24 V d.c., 5 A	07 NG 34	GJV 307 5602 R0001	4.200
Main supply	230 V a.c. (j), 400 V a.c. (Y)/24 V d.c., 10 A	07 NG 35	GJV 307 5603 R0001	6.000
Main supply	230 V a.c. (j), 400 V a.c. (Y)/24 V d.c., 20 A	07 NG 36	GJV 307 5604 R0001	15.000

### Documentations

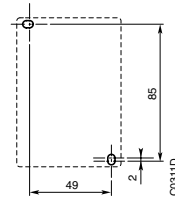
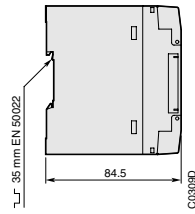
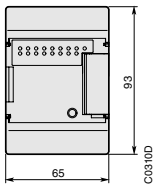
Description	Order code	Weight kg
<b>Series 40 and 50</b> technical description	1SBC 26 0400 R1001	
<b>Series 90</b> technical description	1SAC 13 1699 R0201	
<b>TC50</b> hardware description	1SBC 00 5499 R0101	
<b>TCWIN</b> description	1SBC 00 4999 R0101	
Projection handbook SPSPPLUS Win	GATS 111 104 R0002	
Unit handbook MT 30/40/45/60/65/61	GATS 111 106 R0002	

\* Documentations are in english. Other languages on request

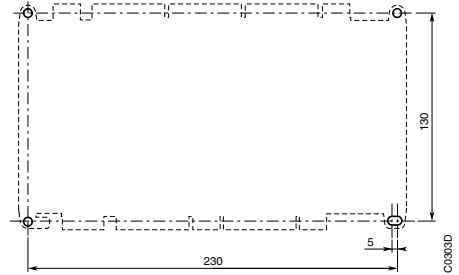
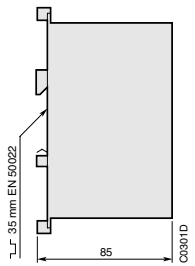
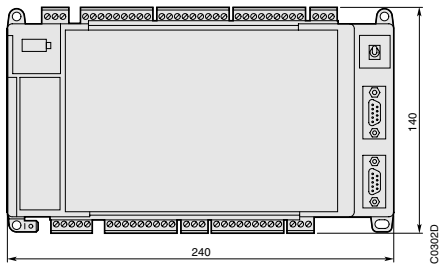
# Dimensions (in mm)



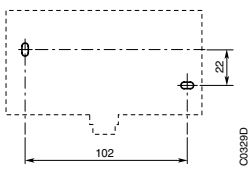
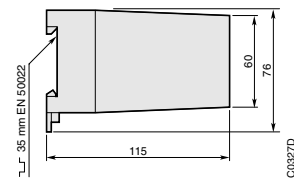
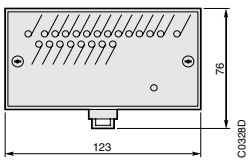
40 and 50 series, central units and extensible remote units



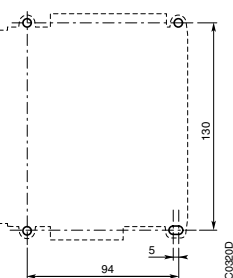
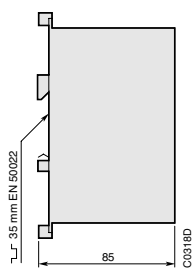
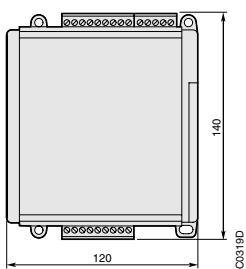
40 and 50 series, extensions for central units or extensible remote units



90 series, central units

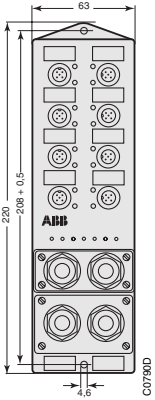


30 series, remote units

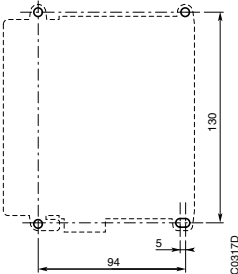
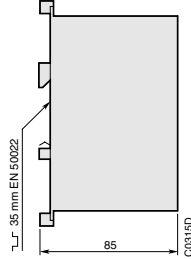
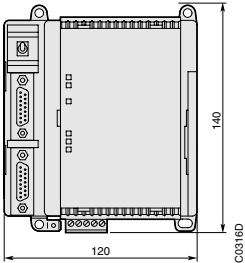


90 series, remote units

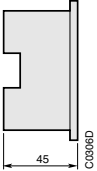
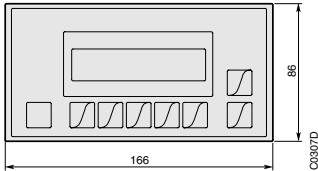
# Dimensions (in mm)



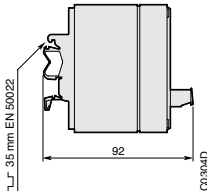
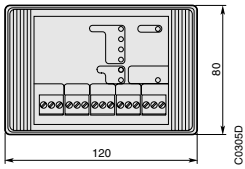
**Remote unite 07 DK 93-I**



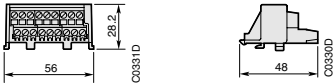
**90 series, communication couplers**



**TC50 display**



**NCB/NCBR bus amplifier**



**ST 50/51 connector**