CS31
Intelligent decentralized
automation system
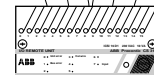
State of the art Automation solutions

Everyone agrees
that the only satisfactory
automation solution is
DECENTRALIZATION.

Experience counts

The CS31 generation was launched in 1990. Since that time it has conquered the high growth industrial user market all over the world.

The CS31 range is universal. Its efficiency and flexibility make it the ideal solution for large-scale water treatment plants, automated processes for building management and small stand-alone equipment too !

The CS31 family continues to grow, with a host of new features and functions.

Tens of thousands of CS31 units are already hard at work, with an enviable reputation for 100% reliability.

Tens of thousands of CS31 units are already hard at work.

Cost saving

Small automatic control units connected directly to sensors and actuators are interconnected by a twisted-pair. They can be up to 2000 metres apart.

The overall system is controlled by a CPU.

User savings begin with low wiring costs. The simple twisted-pair eliminates long runs of coaxial cabling from the CPU to every point of the plant or building.

Compact unit.

Further savings come from the ancillary and peripheral equipment such trunking and terminal blocks and installation time, cable laying, marking and checking. If application signal traffic is high, these savings are substantial.
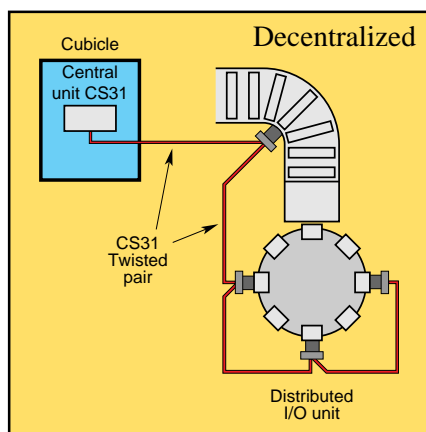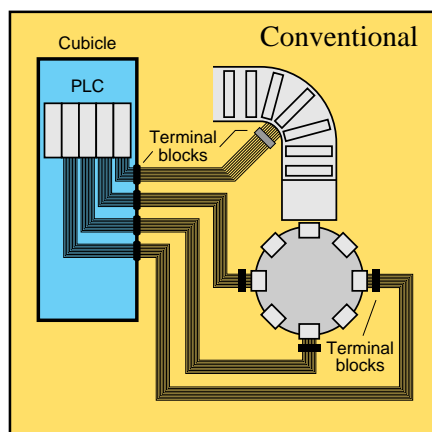

Conventional

Cubicle
PLC
Terminal blocks
Terminal blocks

Decentralized

Cubicle
Central unit CS31
CS31 Twisted pair
Distributed I/O unit

Universal

All installations need modification over time. Systems grow with their environment and must enable upgrading and up-sizing.

CS31 users will be able to add new automation components to the twisted-pair whenever the environment changes.

CS31 units can handle every application in basic binary and analogue I/O.

Choices include 8, 16, 20 or 32 channels, transistors or relays, AC or DC voltage and 8 or 12 bit resolution...

Moreover, with special, exclusive, smart devices, CS31 is the complete answer to the new automation world of compact distributed automation with redundant twisted pairs, redundant safety I/O, remote text displays, interfaces with robots and drives and a host of other capabilities too.
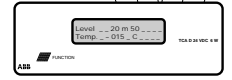
Flexible

CS31 systems are flexible and modular :

● Configurable units
The range includes remote units with 8 or 16 configurable I/O channels determined by the user program

● No-Limit network
Up to 31 new units can be added to the system under power without shutting the plant or building down

● On-Line programming
Programs can be modified and extended on-line.

● Development potential
With the Series 30 and Series 90 CPU's and possibility for direct connection of the CS31 to the centralized ABB T200 logic controller or to a PC, the user has tailor-made performance at his fingertip.

Enhanced Performance and Productivity

High performance is no longer reserved for large, expensive PLC's.

Distributed intelligence means achieving more with fewer resources.
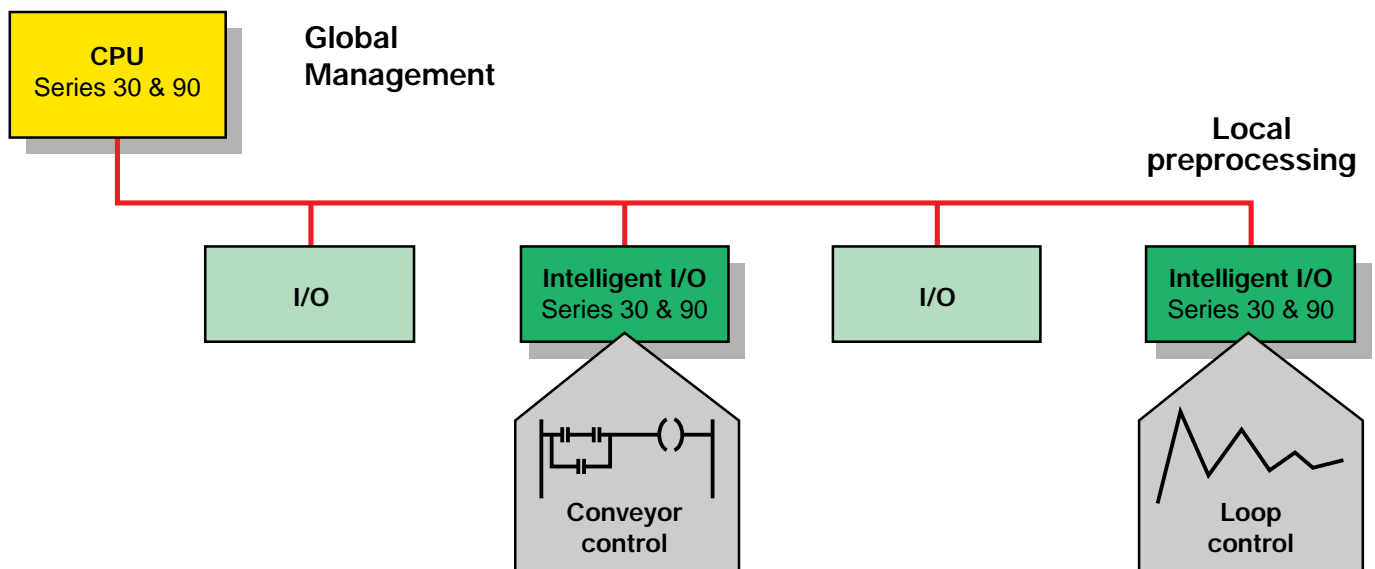
Local I/O processors pre-process data from sensors and actuators such as PID looping, filtering and control on site for extremely rapid response.

Local, intelligent I/O's can be programmed in standard automation language on PC's via ladder diagrams, function blocks and instruction menus.

Standard function blocks simplify developments.

With distributed performance in mind, a wide range of special application units is already available including high-speed counters, positioning units and text displays.

With the right information in the right place at the right time, machines become even more user-friendly.

Global Management

CPU
Series 30 & 90

Local preprocessing

I/O

Intelligent I/O
Series 30 & 90

I/O

Intelligent I/O
Series 30 & 90

Conveyor control

Loop control
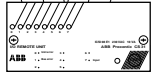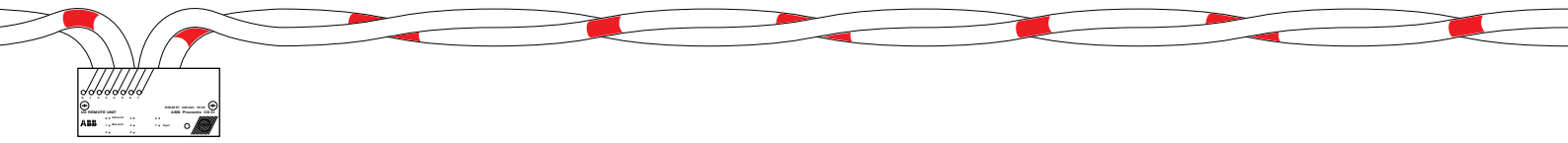
Reliability is vital

Highly reliable communication is vital in critical applications. There is sometimes a risk that the twisted-pair communication line could be cut or crushed with dramatic consequences as I/O units can be disconnected from the bus leading to a full plant shut-down !
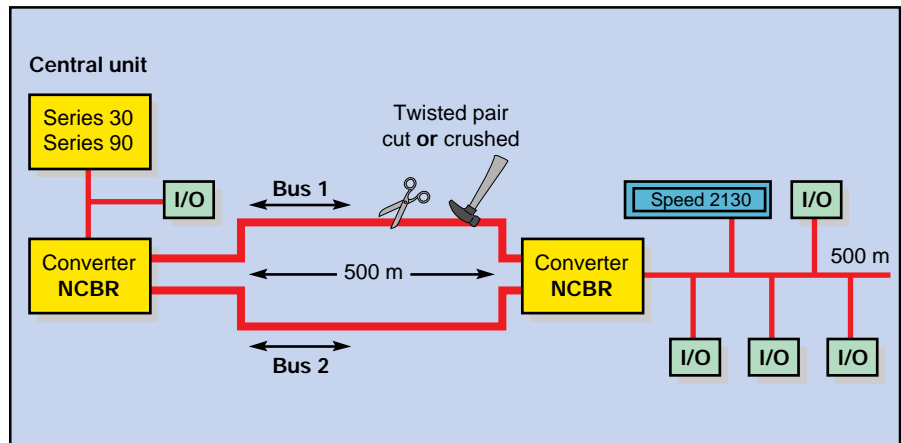
Up until now the only solution to protect applications from this risk was heavily armoured chemical-resistant cable. Now there is a much more cost effective answer: the CS31 + NCBR units + 2 standard twisted pair lines.

Optional NCBR units are simple to fit to new or existing plant.

No Machine Shut down

The NCBR unit can be set up in 2 ways :

Set-Up 1: Dual path Stand-by Communication

This set-up is ideal for protecting high risk areas.

The twisted pair is duplicated on 2 NCBR units. Messages are transmitted by the first NCBR simultaneously on both buses, and then regen-erated by the second NCBR. If either of the buses malfunctions, the transmission continues on the second bus. This means that the application continues even if a number of malfunctions occur on the same bus.
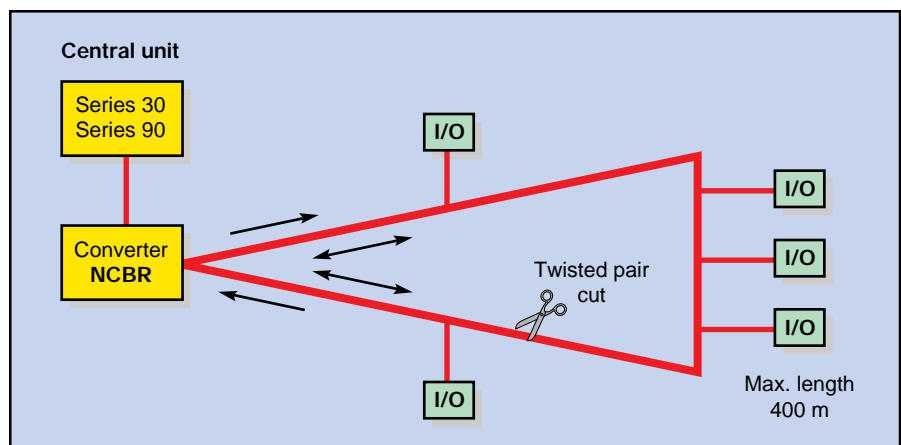
Set-Up 2: Ring

This set-up protects the full CS31 twisted pair circuit.

The ring uses 1 NCBR. Messages from one NCBR channel follow the ring and are received back by the second NCBR channel. If the message is not received back because it is interrupted at a single point, the hot stand-by capability triggers immediately and messages are sent and received on both channels. In this case the NCBR acts as a multiplexer. This means that if a single malfunction occurs on the bus the application is not interrupted.
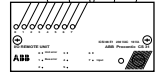
Communication Stand-by

Communication Stand-by procedures ensure that the application continues without shutdown following interruption of the bus. In a worst case scenario, some I/O units may be refreshed after one bus cycle time (≤ 10 ms). During that period they will maintain the status they were in at the time of the interruption.

Maintenance intervention is rapid and accurate as the interruption data are logged into the CPU and a default LED lights on the NCBR.

Fast malfunction detection

NCBRs also act as amplifiers enabling two NCBR's to be spaced at 500 metres maxi. apart. Three NCBR's can be used on in line, permitting total CS31 bus length to attain 2000 metres.

NB: There is also an amplifier only (NCB version) without the bus redundancy feature.

Easy Maintenance

The CS31 keeps downtime to a minimum by fast malfunction detection and simple repairs.

Each remote unit has a microprocessor dedicated to diagnostics and I/O management. It handles and tracks short-circuits, open circuits, overloads, disconnected units and transmission failures.

Simple Repairs

Failure data are displayed on the front panels of I/O units.

Repairs are greatly simplified as remote units can be replaced without discontinuing the application. The plug-in wiring base eliminates the need to re-wire I/O's.

Open to the World

Arcnet®, Interbus S®, Advant Fieldbus®, RCOM®

| CPU Series 90 | CPU Series 90 | CPU Series 90 |

Communication coupler 07 KP xx

CS31   **CS31**   **CS31**

I/O   I/O   I/O

Remote control Modem
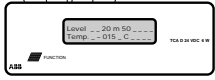
CS31's are frequently used in large plants and processes and have to communicate with non-ABB automation systems. Interfaces with most widely-used automation networks including Modbus®, Arcnet®, Profibus®, Interbus S®, Masterfieldbus® and RCOM® are available.

For non-standardised communication, a C-programmable communication coupler 07 KP 92 enables rapid, customised solutions.

The simplest, low cost solution approved all over the world is the Modbus®.
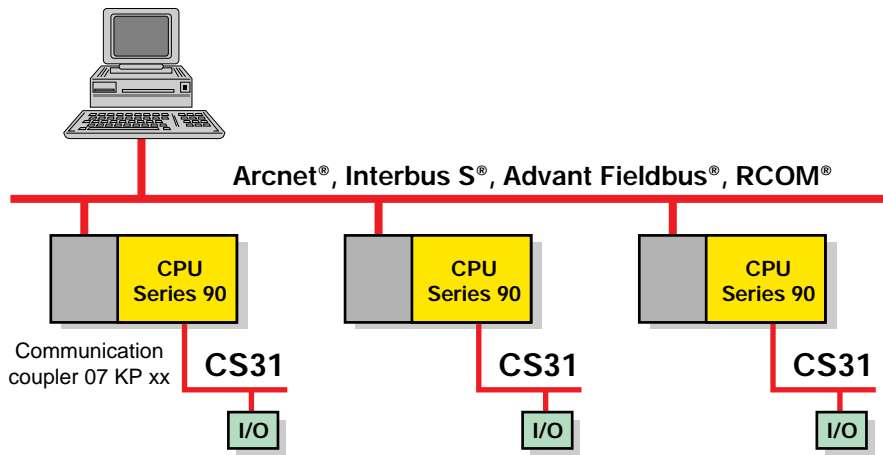
ABB 30 Series CPU's have a built-in Modbus® interface and 90 Series CPU's have a dedicated 07 MK 92 interface.

Remote control and monitoring are via off-the-shelf modems.

Man/Machine interfaces

Modbus®

NCC 485   NCC 485   **Display**

07 KR 31   07 KR 31   07 MK 92 | 07 KR 91

I/O   I/O   I/O

I/O   **Text Display** 57 pieces   I/O
                   TCAD

CS31   **CS31**   **CS31**
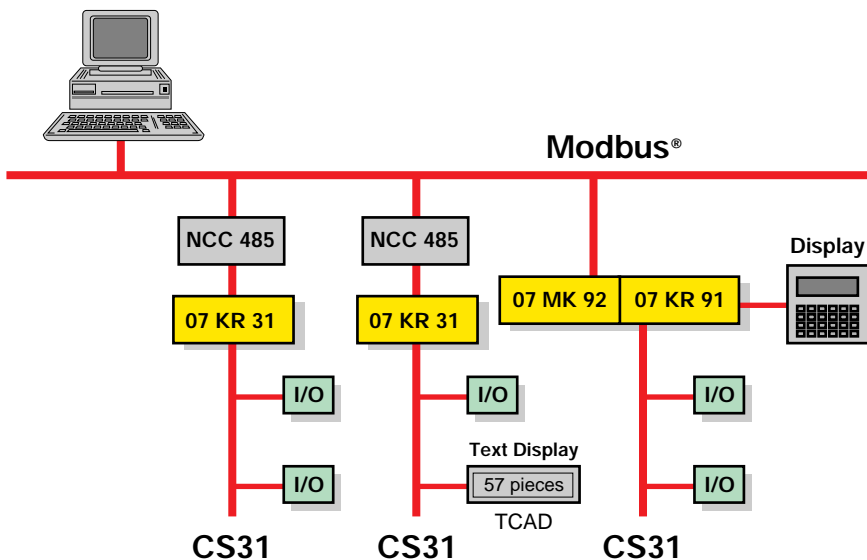
CS31 units feature decentralized on-site text displays to reflect the growing trend to interactive processes and machines. Close to the operators - and not in the central cubicle - units improve machine ergonomics by delivering the right message to the right person at the right time.

Panel displays are connected to the serial ports on 30 and 90 Series CPU's via ASCII or Modbus® protocols (see above picture).
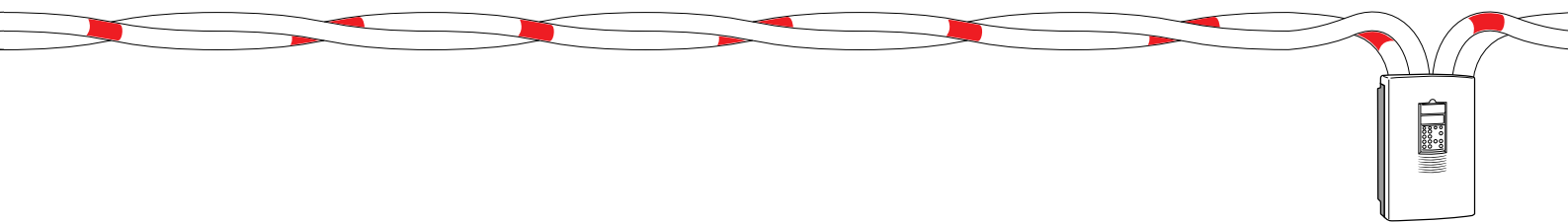
Drives Interface

ABB's ACS 600 frequency converters achieve the ultimate in AC motor control performance. Integrated in the CS31 environment, like any other I/O unit, there is no challenge too simple or too demanding.

Indeed all control commands and Drives status are accessible via the CS31 twisted-pair.

Global Automation Solution

```
Series 30              I/O                        I/O
Series 90
            CS31                  2000 m with repeaters

   I/O    NCSA-01   Interface   NCSA-01    Speed 2130    ABB
          ACS                   ACS                      Robot
          600                   600
          Frequency converter
```
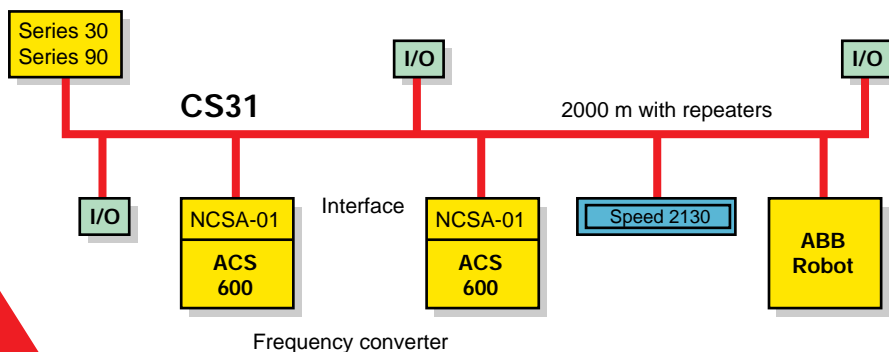
Robot Interface

ABB's S3 and S4 robots have been integrated via the board ICBG 32L7 in the CS31 environment, like any other I/O unit. Datas are exchanged between the Robot control electronic and the CS31 master.

The direct communication saves 3 I/O boards and many wirings.

Application Development

The Series 30 and 90 CPU's host applications developed on a PC (min. 386SX) with the software 907 PC 331.

CS31 programming is easy, as programs will be written down with well known conventional PLC languages: ladder diagram, function blocks and instruction list.
All useful programming functions (On-line programming, debugging...) have been included to create and test powerful applications.

Moreover with customized user function blocks, where repetitive and/or

Edit
• Function block
• Ladder diagram
• Instruction list

Print
• Program
• Variables
• Constants
• Cross reference

Library
• More than 120 function blocks
• User FBs

Test
• Dynamic
• Debugging
• Force variable

On-Line
• Program modification while running

complex functions are encapsulated, the user gains development time and quality.
Upwards compatibility from Series 30 to Series 90 grants performance upgrade without any additional development cost.

Approvals and Classification Societies

The product listed in the catalogue is designed according to the relevant standards; it is manufactured and tested under our own responsibility.

The table indicates for each unit the situation regarding the approvals for those countries or with regard to the classification societies where an approval is mandatory and confirms that products in standard version can be used worldwide thus avoiding double stocking.

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

All products have CE marking.

UL : only for 24 VDC and 120 VAC versions.
Ships classification societies agreements for:
24 VDC, 120 and 230 VAC versions.

■ : approved
△ : applied in 1996

Unit type	Approvals		Ships classification societies						
Test mark / Abbreviation	UL	CSA	BV	GL	LRS	MRS	RINa	DNV	ABS
Approved in	USA	Canada	France	German.	Gr.Brit.	Russia	Italy	Norway	USA
CS31 CPU's									
07 KR 31	■		■	■	■	■	■	■	■
07 KT 31	△		■	■	■	■	■	■	■
07 KR 91	■	■	■	■	■	■	■	■	■
07 KT 92	■	■	■	■	■	■	■	■	■
07 KT 93	■	■	■	■	■	■	■	■	■
CS31 remote units									
ICSI 08 D1	■		■	■	■	■	■	■	■
ICSI 08 E1	■		■	■	■	■	■	■	■
ICSI 16 D1	■		■	■	■	■	■	■	■
ICSI 16 E1	■		■	■	■	■	■	■	■
ICSI 08 E3	■		■	■	■	■	■	■	■
ICSI 08 E4			■	■	■	■	■	■	■
ICSO 08 R1	■		■	■	■	■	■	■	■
ICSO 08 Y1									
ICSO 16 N1	△		■	■	■	■	■	■	■
ICSC 08 L1	△		■	■	■	■	■	■	■
ICFC 16 L1	△		■	■	■	■	■	■	■
ICSK 20 F1	■		■	■	■	■	■	■	■
ICSK 20 N1	△		■	■	■	■	■	■	■
ICDG 32 L1	■	■	■	■	■	■	■	■	■
ICSF 08 D1	■		■	■	■	■	■	■	■
ICPI 08 D1			■	■	■			■	
ICPI 16 D1			■	■	■			■	
ICPO 08 H1			■	■	■			■	
ICPO 16 H1			■	■	■			■	
ICSE 08 A6	■		■	■	■	■	■	■	■
ICSE 08 B5	■		■	■	■	■	■	■	■
ICST 08 A8	■		■	■	■	■	■	■	■
ICST 08 A9	■		■	■	■	■	■	■	■
ICSA 04 B5	■		■	■	■	■	■	■	■
ICSM 06 A6	■		■	■	■	■	■	■	■
ICDT 08 B5	■	■	■	■	■	■	■	■	■
CS31 other units and accessories									
TCAD	△		■	■	■	■	■	■	■
NCB	△		■	■	■	■	■	■	■
NCBR	△		■	■	■	■	■	■	■
ICBG 32 L7									
ICBG 64 L7									
07 KP 90	■	■	■	■	■	■	■	■	■
07 KP 92	■	■	■	■	■	■	■	■	■
NCC 232	△		■	■	■	■	■	■	■
NCC 485	△		■	■	■	■	■	■	■
ECZ	■		■	■	■	■	■	■	■
CS31 coupler for T200 ABB programmable logic controller									
07 CS 61	■	■	■	■	■	■	■	■	■

ABB CS31
Technical Specifications

The CS31 system is developed according to the standard IEC 1131-2.

Technical data system			
Operating conditions			
- temperature	operation	0 °C	+55 °C
	storage	-40 °C	+75 °C
	transport	-25 °C	+75 °C
Humidity		DIN 40040 class F without condensation	
- average over the year		≤ 75%	
- up to 30 days of a year		95%	
- on the days, occasionally		85%	
Air pressure		DIN40050	
- operation		≥ 800 hPA (≤ 2000 m)	
- storage		≥ 660 hPA (≤ 3500 m)	
Mechanical data			
- degree of protection		IP 20	
- housing		UL V0	
- vibration		IEC 68-2-6 test Fc	
- shocks		IEC 68-2-27 test Ea	
Supply connections (for each product)			
	24 VDC	19.2 VDC 30 VDC (-20%,+25%)	
	120 VAC	112.8 VAC 127.2 VAC (+/-6%) (50 Hz or 60 Hz)	
	230 VAC	195.5 VAC 253 VAC (+/-5%) (50 Hz or 60 Hz)	
Creepage distances and clearances		IEC 664 and DIN VDE 0160	
Insulation test voltages		IEC 1131-2	
Electromagnetic compatibility			
- electrostatic discharge		IEC 1000 - 4 - 2 (severity level 3)	
- radiated electromagnetic field immunity test		IEC 1000 - 4 - 3 (severity level 3)	
- fast transient burst test		IEC 1000 - 4 - 4	
- surge immunity		IEC 1000 - 4 - 5	

CS31 bus characteristics	
Communication	serial
Standard	RS 485 (twisted pair)
Mode	Half duplex
Velocity	187.5 kbaud
Protocol	ABB CS31 (master/slave)
Transmission control	CRC8
Number of remote units	31 max.
Bus length	500 metres max.
Bus extension	2000 metres max. (with NCB)
Bus redundancy	yes (with NCBR)
Isolation	2 kV opto-isolated
Refresh time	2 ms min. 12 ms typical value for 31 remote units

CS31 bus specifications		
Type		shield twisted pair
Cross	min	$2 \times 0.22\,mm^2$ N°AWG 24
	max	$2 \times 0.8\,mm^2$ N°AWG 18
Twists	min	10 per metre
Conductor resistor		$100\,\Omega/km$
Impedance characteristic		$120\,\Omega$ (100 to 150 Ω)
Ended line resistor		$120\,\Omega$ 1/4 W
Capacitance		$< 150\,nF/km$

Central Units Characteristics

	CS31 Series 30	CS31 Series 90
♦ User program memory	EEPROM / RAM	Flash EPROM / RAM
♦ With «ON-LINE» modifications	8 kbytes (2 kinst.)	28 kbytes (7 kinst.) (56 kbytes for 07 KT 93 R171)
♦ Without «ON-LINE» modifications	8 kbytes (2 kinst.)	56 kbytes (14 kinst.)
♦ Cycle Time (1000 binary instruct.)	6 ms	1.6 ... 2 ms
♦ Number of inputs/outputs		
binary (mod. 20)	640	660
analog (I/O)	224/48	96/48
♦ Internal memory		
flags	512	4096
words (16 bits)	256	4096
double words (32 bits)	32	512
step chains (16 steps)	16 (256 steps)	128 (2048 steps)
♦ Back-up data	Built-in battery	Battery 07 LE 90
♦ Password protection	Yes	
♦ Built-in MODBUS® protocol	Yes (master and slave)	
♦ Timers	Illimited (40 simultaneously)	Illimited (80 simultaneously)
♦ Counters	Illimited	Illimited
♦ Arithmetic functions	Yes	Yes
♦ Double word arithmetic functions		Yes
♦ Other software functions	More than 30: PI regulator, ASCII communication, comparison, etc ...	More than 80: PID regulator, ASCII communication, comparison, ramp, etc ...
♦ Real time clock	Yes	Yes
♦ High speed counter (on one binary input)	1 (10 kHz 16 bits)	1 (10 kHz 16 bits)
♦ 24 VDC output power supply	Yes	Yes
♦ Wiring	On plug-in base ECZ	Removable connectors

Central unit
07 KR 31

CS31 Series 30

Series	Central unit	Built-in inputs	Built-in outputs	Communication with RS 232	Power supply	Note
CS31-30	07 KR 31	12 binary	8 binary (relay 2 A / 250 VAC)	COM1: programming and test ASCII communication master /slave MODBUS®	24 VDC 120 VAC 230 VAC	
	07 KT 31	12 binary	8 binary (transistor 0.5 A / 24 VDC)	COM1: programming and test ASCII communication master /slave MODBUS®	24 VDC 120 VAC 230 VAC	

Central unit
07 KR 91

CS31 Series 90

Series	Central unit	Built-in inputs	Built-in outputs	Communication with RS232	Power supply	Note
CS31-90	07 KR 91	20 binary	12 binary (relay 2 A / 250 VAC)	COM1: programming and test ASCII communication	24 VDC 120 VAC 230 VAC	
	07 KT 92	12 binary 4 analog (0 … 10V, 0 … 20mA, 4 … 20mA)	8 binary (transistor 0.5 A / 24 VDC) 2 analog (+/-10V)	COM1: programming and test ASCII communication COM2: ASCII communication	24 VDC	07 KT 92 R262 built-in ARCNET® coupler
	07 KT 93	24 binary	16 binary (transistor 0.25 A / 24 VDC)	COM1: programming and test ASCII communication COM2: ASCII communication	24 VDC	07 KT 93 R171 built-in ARCNET® coupler

ECZ

ICSO 16 N1

ICSK 20 F1

ICFC 16 L1

Plug-in base	
ECZ	Plug-in base for wiring and connection of products Series 30

Binary remote units

Remote units	Input	Output	Open circuit detection	Short-circuit and overload protection	Power supply
ICSI 08 D1	8 24 VDC		yes		24 VDC 120 VAC 230 VAC
ICSI 16 D1	16 24 VDC		yes		24 VDC 120 VAC 230 VAC
ICSI 08 E1	8 24 VDC opto-isolated				24 VDC 120 VAC 230 VAC
ICSI 16 E1	16 24 VDC opto-isolated				24 VDC 120 VAC 230 VAC
ICSI 08 E3	8 120 VAC opto-isolated				120 VAC
ICSI 08 E4	8 230 VAC opto-isolated				230 VAC
ICSO 08 R1		8 relay 2 A/AC-1 1 A/AC-3		overload with varistor	24 VDC 120 VAC 230 VAC
ICSO 16 N1		16 transistor 24 VDC/0.5 A		yes	24 VDC 120 VAC 230 VAC
ICSO 08 Y1		8 transistor 24 VDC/2 A opto-isolated		yes	24 VDC 120 VAC 230 VAC
ICSK 20 F1	12 24 VDC	8 relay 2 A/AC-1 1 A/AC-3		overload with varistor	24 VDC 120 VAC 230 VAC
ICSK 20 N1	12 24 VDC	8 transistor 24 VDC/0.5 A		yes	24 VDC 120 VAC 230 VAC
ICSC 08 L1	8 user configurable 24 VDC	transistor 24 VDC/0.5 A	yes (for input and output)	yes	24 VDC 120 VAC 230 VAC
ICFC 16 L1*	16 user configurable 24 VDC	transistor 24 VDC/0.5 A	yes (for input and output)	yes	24 VDC
ICDG 32 L7	16 24 VDC / 8 user configurable 24 VDC	8 transistor 24 VDC/0.25 A / 24 VDC/0.25 A	yes (for input and output)	yes	24 VDC

* 2 plug-in bases ECZ are necessary

IP 65 remote units

Remote units	Input	Output	Open circuit detection	Short-circuit and overload protection	Power supply
ICPI 08 D1	8 24 VDC			yes	24 VDC
ICPI 16 D1	16 24 VDC			yes	24 VDC
ICPO 08 H1		8 24 VDC/2A		yes	24 VDC
ICPO 16 H1		16 24 VDC/2A		yes	24 VDC

ICSE 08 B5

ICSF 08 D1

TCAD
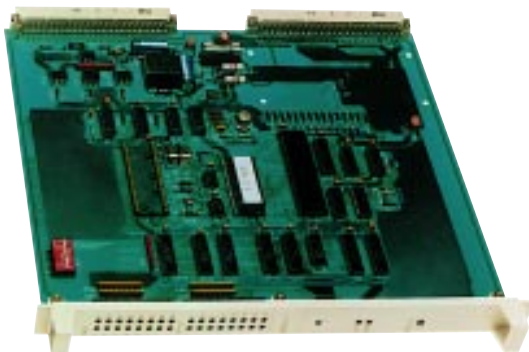
Robot coupler

Analog remote units

Remote units	Input	Output	Resolution	Pow. sup.
ICSE 08 A6	8 0... 10 V, 0... 5 V, 0... 20 mA, 4... 20 mA		8 bits	24 VDC 120 VAC 230 VAC
ICSE 08 B5	8 +/- 10 V, 1... 5 V, +/- 20 mA, 4... 20 mA		12 bits	24 VDC 120 VAC 230 VAC
ICST 08 A8	8 Pt100 sensors: -50... +150 °C		8 bits	24 VDC 120 VAC 230 VAC
ICST 08 A9	8 Pt100 sensors: 0... +300 °C		8 bits	24 VDC 120 VAC 230 VAC
ICDT 08 B5	8 +/- 10 V, +/-5 V, 0... 20 mA, 4... 20 mA Pt 100 / Pt 1000, sensors: - 50... +400 °C Thermocouples types J, K, S		12 bits	24 VDC
ICSA 04 B5		4 +/- 10 V, 0... 20 mA, 4... 20 mA	12 bits	24 VDC 120 VAC 230 VAC
ICSM 06 A6	4 0... 10 V, 0... 20 mA, 4... 20 mA	2 +/- 10 V, 0... 20 mA, 4... 20 mA	8 bits	24 VDC 120 VAC 230 VAC

High speed counter remote unit

Remote unit	description	Input	Output	Pow. sup.
ICSF 08 D1	High speed counter 50 kHz input A, /A, B, /B, C, /C 5 VDC, 15 VDC or 24 VDC Mode 1 : incremental encoder (32 bits) Mode 2 : A-B (32 bits) Mode 3 : A+B (32 bits) Mode 4 : 3 independents counters (16 bits) Mode 5 : 3 frequency meters (16 bits) 100 ms... 6563,5 sec.	4 24 VDC (Valid, set, reset, ref. point initiator)	7 transistor 24 VDC 0.3 A for result of local comparison between counter and 2 setpoints	24 VDC 120 VAC 230 VAC

Text display

Remote unit	Description	Pow. sup.
TCAD	Text display on CS31 bus 2 lines with 32 characters (8 mm high) 127 + 1 (back ground) messages stored in EEPROM 2 embedded data per message 1 buzzer 1 key function used in the central unit program IP65 front plate Delivered with its programming software. Configuration as a binary or analog remote unit on CS31 bus.	24 VDC

Robot coupler for ABB robot S3/S4

Remote units	Description	Pow. sup.
ICBG 32 L7	32 binary input/output for robot S3/S4 and CS31	internal robot supply
ICBG 64 L7	64 binary input/output for robot S3/S4 and CS31	internal robot supply

Positioning unit

Unit	Description	Pow. sup.
07 SA 93	Positioning unit for 3 independent axes Connection of incremental encoder 11 binary inputs 24 VDC, 4 binary outputs 24 VDC / 0.5 A Programmable with 907 PC 331 + special library. Connection to the CS31 bus	24 VDC

CS31 coupler

Type	Description	Pow. supply
07 CM 90	PC board for master /slave of CS31 bus (format PC-XT)	from PC
07 CS 61	ABB Procontic T200 board for master CS31 bus	from T200 rack

Communication couplers for central units Series 90

Type	Description	Pow. supply
07 KP 90	RCOM® protocol master/slave 1EIA RS 232 interface	24 VDC
907 KP 90	Software + documentation for 07 KP 90	
07 KP 92	Free protocol programmable in C language stored in flash Eprom, 2 serial interface EIA RS 232, EIA RS 422 or EIA RS 485	24 VDC
907 KP 92	Library + documentation for 07 KP 92	
07 MK 92	MODBUS® protocol 2 serial interface EIA RS 232, EIA RS 422 or EIA RS 485 Modes: slave/slave, master, slave	24 VDC
907 MK 92	Software + documentation for 07 MK 92	

CS31 bus accessories

Type	Description	Pow. supply
NCB	CS31 bus amplifier maxi length 2 km (with 3 NCB on one CS31 bus)	24 VDC
NCBR	CS31 bus amplifier with redundancy parallel, ring, star configurations	24 VDC

Serial interface accessories

Type	Description	Pow. supply
NCC 232	RS 232 / RS 232 opto-isolated convertor delivered with cable for central unit	24 VDC
NCC 485	RS 232 / RS 485 opto-isolated convertor delivered with cable for central unit full or half duplex configuration used for MODBUS® network	24 VDC

Programming software

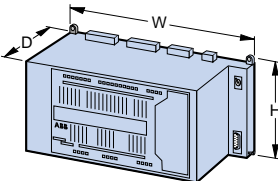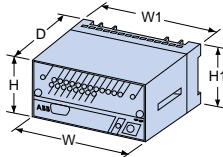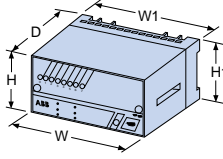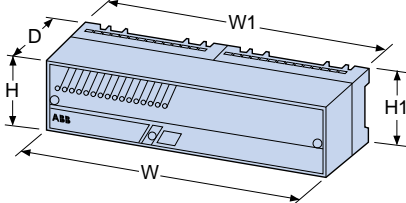| Type	Description
907 PC 33	General description of the software 907 PC 33 in english. The 907 PC 331 software is necessary for the CS31
907 PC 331	Programming software for CS31 (Series 30 and 90) with english documentation Installation on a PC with DOS version >=5.0 IL (instruction list), LD (ladder) + FBD (function block diagram) languages.
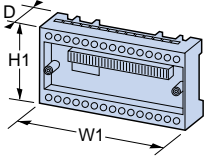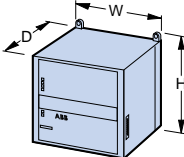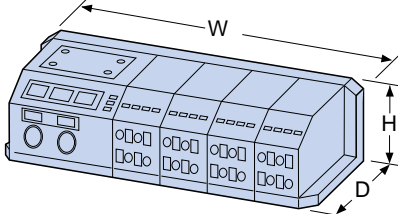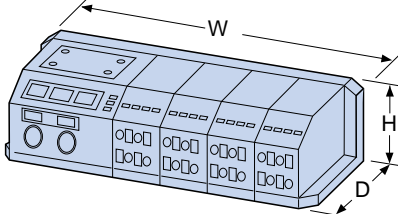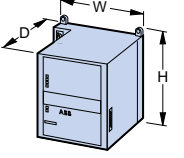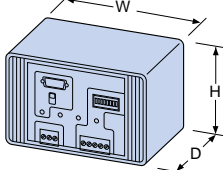
Series 90 accessories

Type	Description
07 LE 90	Battery for series 90 central units
07 SG 90	Inputs simulator for the central unit 07 KR 91.

System cables

Type	Description		Length
07 SK 90	programming cable	25pins/ 9pins	5 metres
FPTN 404 948 R0005	programming cable	25pins/ 9pins	2 metres
FPTN 404 948 R0002	programming cable	9pins/ 9pins	2 metres
07 SK 91	ASCII or MODBUS® communication	25pins/ 9pins	5 metres
07 SK 92	ASCII or MODBUS® com. Modem	25pins/ 9pins	5 metres
FPTN 404 948 R0001	ASCII or MODBUS® communication	25pins/ 9pins	5 metres
FPTN 404 948 R0006	ASCII or MODBUS® communication	9pins/ 9pins	5 metres

Coupler 07 KP 92

NCC 485

907 PC 331
Programming software

Dimensions

Types	Short description	Dimensions in mm with unit carrier/terminals W / W1 x H / H1 x D		
07 KR 91 **07 KT 92** **07 KT 93** **07 SA 93**	Central processing unit " " Positioning unit	**240** –	**140** –	**85**
07 KR 31 **07 KT 31**	Central processing unit "	**120** / 123	**60** / 64	**115**
ICS..	Binary or analogue units Input - Output - Input/Output High speed counter unit	**120** / 123	**60** / 64	**115**
ICFC 16 L1	Binary Input/Output unit	**244** / 246	**60** / 64	**80**
ECZ	Plug-in base	123	64	30
ICD..	Binary or analog remote units	**120** –	**140** –	**85**
ICPI 16 D1 **ICPO 16 H1**	Binary remote unit (IP 65 protection) "	**367** –	**78** –	**78.5**
ICPI 08 D1 **ICPO 08 H1**	Binary remote unit (IP 65 protection) "	**247** –	**78** –	**78.5**
07 KP 90 **07 KP 92** **07 MK 92**	Communication coupler " "	**120** –	**140** –	**85**
NCC 232 **NCC 485** **NCB** **NCBR**	Communication accessory " " "	**120** –	**80** –	**85**

The other products (type ICBG 32 L 7, type ICBG 64 L 7, type 07 CS 61, type 07 CM 90) are mounted in a rack.
Their dimensions depend on their ranges (Robot S3, ABB Procontic T 200 and PC).

ABB

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