Chapter 20

ICMK-CS31 remote unit

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ICMK-CS31 remote unit

This chapter wants to describe the general characteristics and operating conditions of ICMK-CS31 remote unit on CS31 system bus.

1.1 Presentation

The ICMK-CS31 with its appropriated extensions is used to replace the 30 series CS31 remote units and it is able to replace them with same behaviour and above all without user program modification, only new wiring will be necessary.

Warning: The ICMK-CS31 will not be able to replace all case of application, depending on configuration and central unit types used. It is very important before all modification on the application or un-cabling of the remote units, to check and record all configuration, electrical connections and dip-switches on ECZ plug in base and also dip-switches on the rear of analog remote units and to check in this documentation all restriction by type of remote unit.

1.1.1 General set-up rules

The ICMK-CS31 is product based on ICMK14F1 remote unit from AC31 series.

The ICMK-CS31 remote unit incorporate specific binary inputs used for configuration in order to adapt it to 30 series CS31 remote units must be replaced.

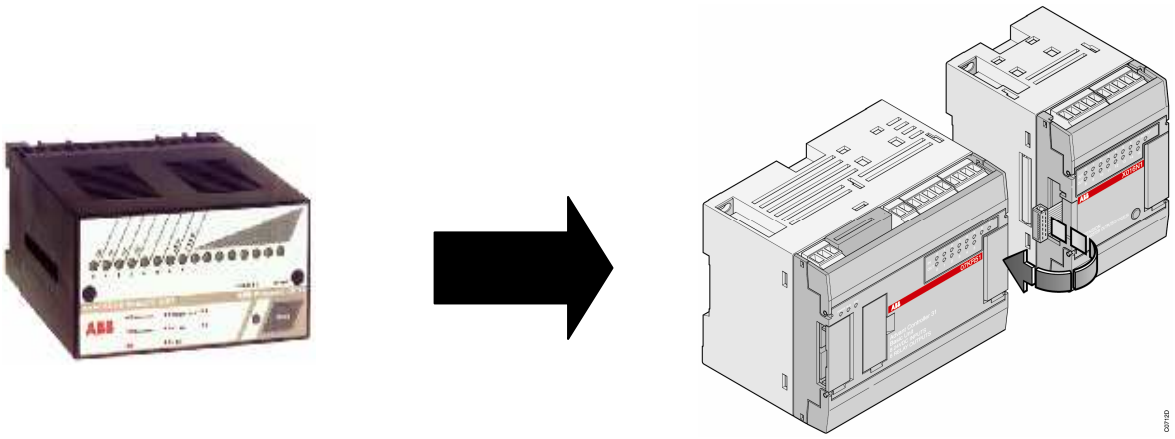
There are no outputs available on ICMK-CS31.

The ICMK-CS31 remote unit is connected on CS31 system bus and used a CS31 protocol.

The ICMK-CS31 remote unit will have the same CS31 address that the 30 series CS31 remote unit must be replaced on CS31 bus.

The extensions used with the ICMK-CS31 remote unit are the same that with AC31 series.

Warning: Take care with dimension of new configuration ICMK-CS31 remote unit + extensions, because it takes up more space than 30 series CS31 remote unit must be replaced. (see part Dimension)



1.1.2 Cabling of CS31 bus

The CS 31 bus is a RS 485 serial interface and consists of a shielded twisted pair.

The ICMK-CS31 remote unit may be connected at any point of the bus:

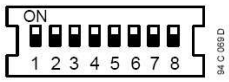
- Bus 1 on bus 1
- Bus 2 on bus 2
- Shielding (preferably braided) on terminal 3 of terminal block

The bus should be terminated with a 120 Ω 1/4 W resistance connected to the bus extremities.

1.5.1.1 Addressing of remote unit:

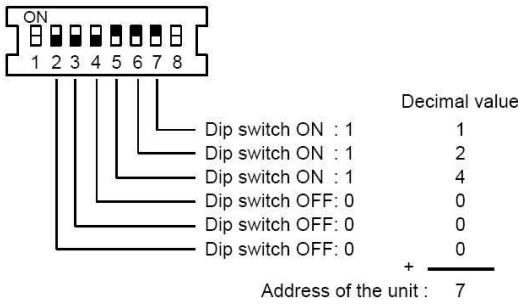
The dip-switches 2 to 7 are used to set the address of the remote units on the bus.

The address of the unit is obtained by the addition of the binary values of the 2 to 7 when in the “ON” position. The result obtained is the decimal address of the unit.



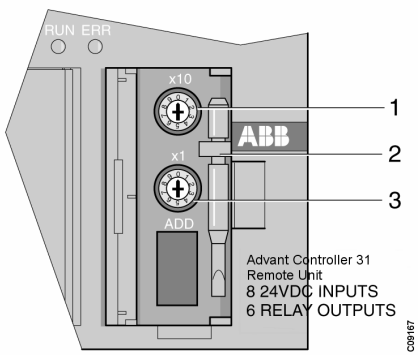
Dip switch	2	3	4	5	6	7
Decimal value	32	16	8	4	2	1

Example for address = 7



The slave number of the ICMK-CS31 remote units is given by the rotative switches situated beneath the first cover on the front face. Each switch can be set to 0 to 9. The switch 1 is for tens and the switch 3 is for units.

Warning: The address of ICMK-CS31 remote unit should have the same address that the CS31 remote unit must be replaced.



1.5.1.2 Selection of the lowest or highest zone of channels:

The dip-switch 8 is used to select the lowest or highest zone of channels of the remote units.

⇨ When in “OFF” position, depending type of remote units, (xx = address of the remote unit)

The selection channels is (xx.00 up to xx.07) or (xx.00 up to xx.15)

⇨ When in “ON” position, depending type of remote units, (xx = address of the remote unit)

The selection channels is (xx.08 up to xx.15) or (xx.08 up to xx.15 and xx+1.00 up to xx+1.07)

This option is realised in ICMK-CS31 remote unit with its input IN7.

Warning: The function of dip-switch 1 is not possible with ICMK-CS31 remote unit.

This dip-switch 1 was only used with remote unit ICSC08L1 and ICFC16L1

⇨ When in “ON” position, all channels are set on outputs only.

⇨ When in “OFF” position, the function of the each channel is configured by the user program.

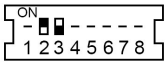
1.5.1.3 Configuration for the range of bits used within a word: (analog format)

The dip-switches 2 and 3 are used to determine the range of bits used within a word.

Three different options can be configured.

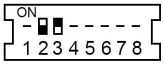
1) Configuration most significant byte (analog format ± 32767)

	2	3
ON	X	
OFF		X



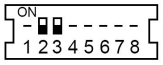
2) Configuration least significant byte (analog format 255)

	2	3
ON		X
OFF	X	



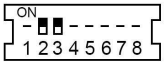
3) Configuration (analog format ± 4095)

	2	3
ON		
OFF	X	X



4) Configuration as binary remote unit for ICSM06A6

	2	3
ON	X	X
OFF		



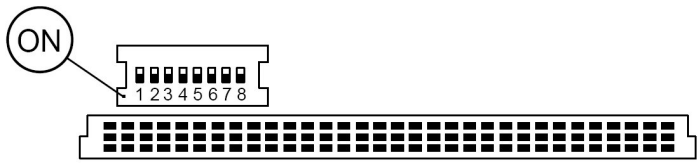
Warning: These options are realised in ICMK-CS31 remote unit with its input **IN0** apart from the **format 255** (2) for analog remote units (this format, for instance, could be used with T200 central unit) and configuration as a binary remote unit for ICSM06A6 (4).

1.5.2 Verification of hardware configuration on the analog remote units:

Before first of all, the most important will be to check and record the position of dip-switches of 30 series analog remote units, the dip-switches are accessible on the rear of remote unit.

These dip-switches are present on the following analog remote units:

(ICSE08A6, ICSE08B5 and ICSA04B5)



1.5.2.1 ICSE08A6 and ICSE08B5 analog remote units:

The selection between current and voltage format depends on position of dip-switches on the rear of remote unit.

One dip-switch is for one channel.

⇨ When in “ON” position, the format selected is current.

⇨ When in “OFF” position, the format selected is voltage.

This option is realised on XE08B5 extension (added on ICMK-CS31 remote unit) channel by channel with position of its dip-switch and push button on the front face.

1.5.2.2 ICSA04B5 analog remote unit:

The selection between current and voltage format depends on position of dip-switches on the rear of remote unit.

Two dip-switches are for one channel.

The cabling on ECZ determines after that the choice current or voltage

dip switch	output current	output voltage
OFF ON	0 … 16 mA*	± 10 V
OFF ON	4 … 20 mA	± 10 V
OFF ON	4 … 25 mA*	± 12.5 V
OFF ON	0 … 20 mA	± 12.5 V

Warning: Only the formats ± 10V, 0…20mA and 4…20mA are available with ICMK-CS31 remote unit. If another format is selected, it will not possible to replace the CS31 analog remote unit without hardware and user program modifications.

This option is realised on XM06B5 extensions (added on ICMK-CS31 remote unit) channel by channel with position of its dip-switch and push button on the front face.

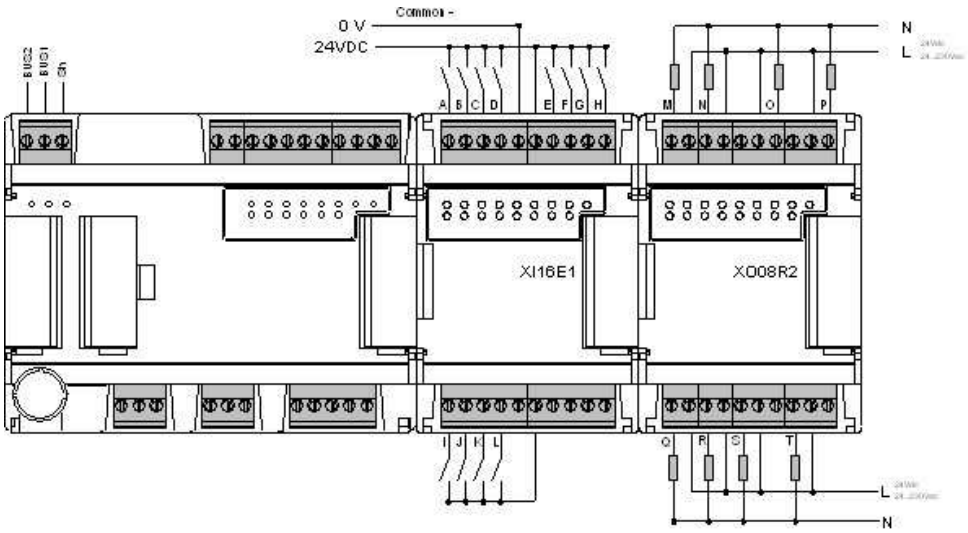
1.5.3 Verification of hardware configuration on the 30 series analog input remote units: (Temperature type)

Before first of all, the most important will be to check and record the electrical connection of temperature sensors on ECZ plug in base, in order to select 2 or 3 wires connection.

This option is realised in ICMK-CS31 remote unit with its input **IN4**.

1.8.1.3 Solution with 8 independent commons:

Replacement by ICSMK-CS31 + two extensions (XI16E1 + XO08R2)



1.8.1.4 Configuration of inputs of ICMK-CS31

Option: Input 7 - **(IN7 = 1)** => to valid the highest zone of channels (xx.08 up to xx.15)

1.8.1.5 Restriction or limit

There is not any restriction or limit, all functions are assured

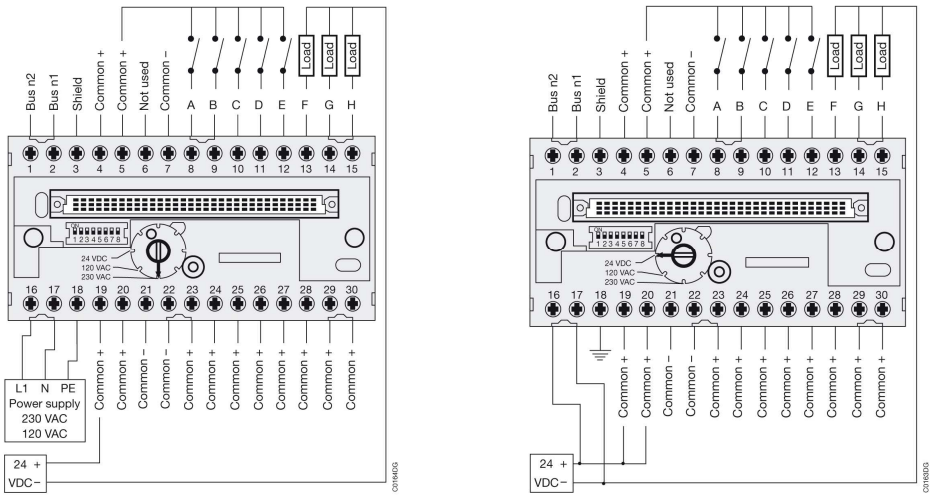
1.8.2 ICSC 08 L1 Binary input/output unit with 8 channels as a 24 V d.c. input or 24 V d.c. 0.5 A transistor output

FPR 332 9101 R1082 **24 V d.c.**

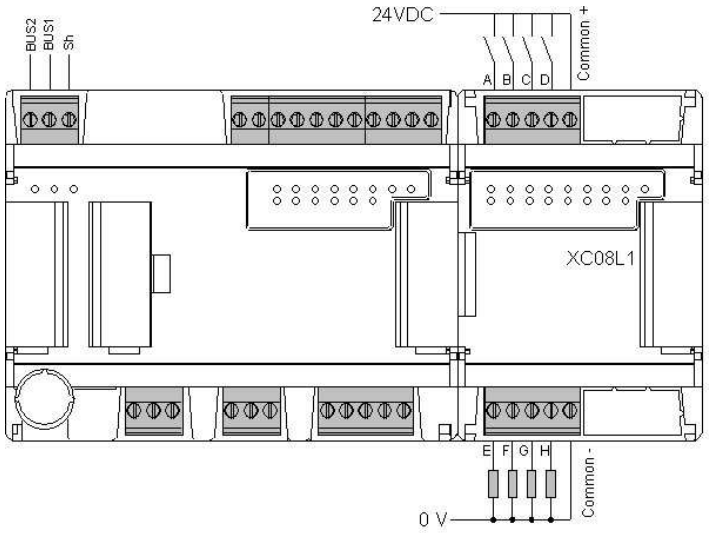
FPR 332 9101 R0086 **230 V a.c.**

FPR 332 9101 R0084 **120 V a.c.**

1.8.2.1 Electrical connection



1.8.2.2 Replacement by ICSMK-CS31 + one extension XC08L1



1.8.2.3 Configuration of inputs of ICMK-CS31

Option: Input 7 - **(IN7 = 1)** => to valid the highest zone of channels (xx.08 up to xx.15)

1.8.2.4 Restriction or limit

Inputs: It is not possible to use the function block CS31CO to configure the option open circuit detection ”cut wire” and to modify the delay of inputs (5ms).

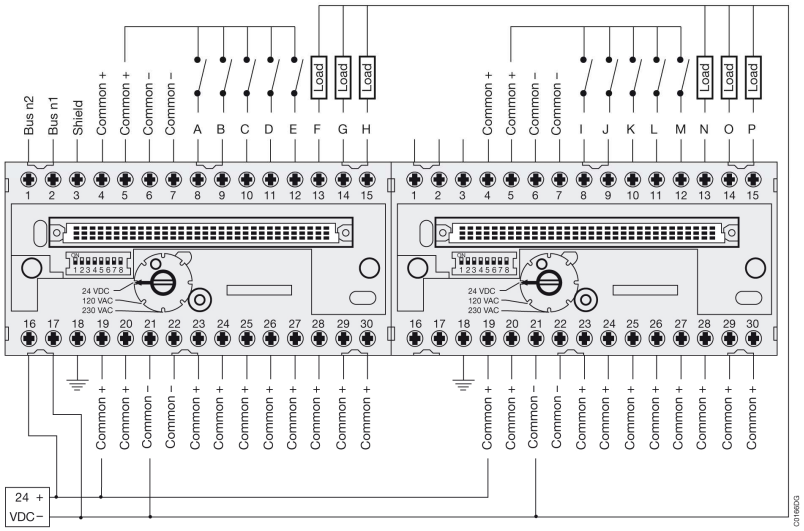
Outputs: The fault indication “Power off” is not managed by ICMK-CS31 The detection level of short circuit is lower than with ICSC08L1 (0.5 A instead of 2 A). If the external 24 V d.c. power supply is not connected, the green led “Power” is blinking.

It is not possible to configure all channels in outputs, in order to allow using again the same address for an input unit, like with Dip switch N°1 on the plug-in base ECZ.

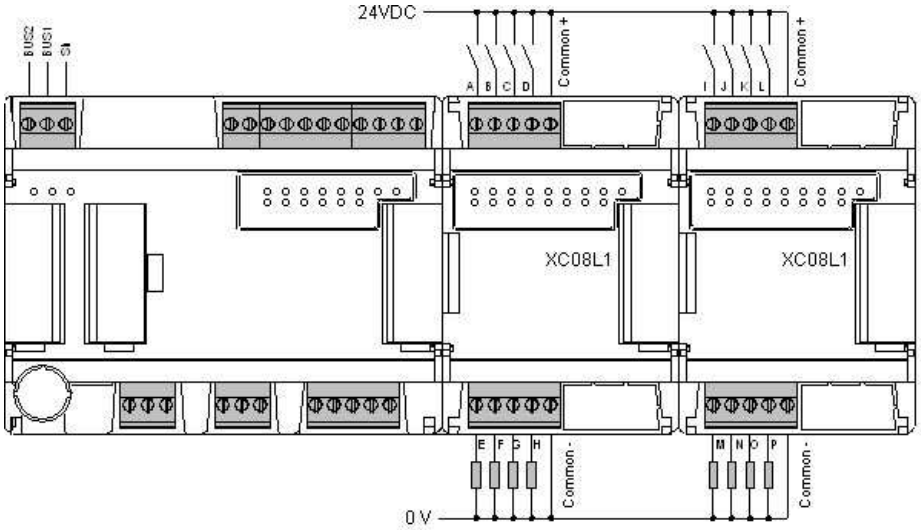
1.8.3 ICFC 16 L1 Binary input/output unit with 16 channels as 24 V d.c. input or 24 V d.c. 0.5 A transistor output.

FPR 332 9101 R1062 24 V d.c.

1.8.3.1 Electrical connection



1.8.3.2 Replacement by ICSMK-CS31 + two extensions XC08L1



1.8.3.3 Configuration of inputs of ICMK-CS31

Option: Input 7 - **(IN7 = 1)** => to valid the highest zone of channels (xx.08 up to xx.15 and xx+1.00 up to xx+1.07)

1.8.3.4 Restriction or limit

Inputs: It is not possible to use the function block CS31CO to configure the option open circuit detection ”cut wire” and to modify the delay of inputs (5ms).

Outputs: The fault indication “Power off” is not managed by ICMK-CS31 The detection level of short circuit is lower than with ICFC16L1 (0.5 A instead of 2 A). If the external 24 V d.c. power supply is not connected, the green led “Power” is blinking.

It is not possible to configure all channels in outputs, in order to allow using again the same address for an input unit, like with Dip switch N°1 on the plug-in base ECZ.