



DIAM 3x00 DIAM 4x00 DIAM 5x00

CCR Remote control



RECORD OF CHANGES

[illegible]

WARRANTIES

Guarantee

AUGIER's goods has been manufactured and will perform in accordance with applicable specifications, and any defect in design, materials or workmanship which may occur during proper and normal use during a period of 1 year from date of installation or 2 years from date of shipment will be corrected by repair or replacement by the manufacturers f.o.b factory.

The guarantee covers repair, modification or replacement of parts or products recognised to be defective, in the shortest possible time, at AUGIER's cost, provided always that the goods have been properly handled and stored prior installation, properly installed and properly operated after installation.

Unless otherwise specifically laid down in contract, the guarantee does not cover:

- Costs of consignment to factory and re-consignment of defective goods to Buyer
- Travelling & sojourn expenses of AUGIER's personnel if goods have to be repaired on site; assembly and dismantling of any goods other than those recognised to be defective; expenses incurred for waiting times by AUGIER's personnel on site for reasons independent of their will;
- Unjustified travel expenses.

Guarantee shall not apply in the following cases:

- Defects in materials supplied by Buyer or due to any designs imposed by them;
- Repairs or replacements due to normal wear and tear, or damages or accidents.
- Repairs or replacements due to damages or accidents resulting from negligence or lack of due care, inadequate supervision or maintenance, or erroneous use of the equipment or software;
- Any other causes for which AUGIER shall not be held responsible, e.g. resulting from an case of Force Majeure.
- When Buyer has replaced AUGIER's parts with other parts.

Buyer must inform AUGIER in writing and without delay of any defects in goods, giving all necessary information and detailed description of how equipment has been utilised, together with purchase date. Buyer undertakes not to have repairs carried out by third parties; any repairs carried out without AUGIER's express prior agreement shall invalidate the guarantee.

It is expressly agreed between the two parties that Buyer cannot avail himself of the beneficial dispositions contained in the guarantee without having first satisfied payment conditions laid down in contract

Disclaimers

This manual could contain technical or typographical errors. AUGIER reserves the right to make changes and revise this manual from time to time without obligation to notify any person or organisation of such changes or revision.

Values and measurements given in this manual are average values and are not binding. AUGIER disclaims any liability for damages suffered as a result of reliance on the information given in this manual, or the use of equipment or processes which this manual refers.

No guarantee is made that the use of the products, equipment, processes or information to which this manual refers will not infringe any third party's patent or rights. Information given does not release the buyer from making their own tests.

SAFETY

Safety precautions

This equipment is normally used or connected to circuits that may employ dangerous and lethal voltages. Extreme caution should be exercised by operating or maintenance people when working on or with this equipment.

See IEC 61820 & 61821 standard (CCR type IEC), or FAA AC150/5340-26 advisory circular (CCR type FAA), concerning safety rules and precautions. While practical safety precautions have been incorporated in this equipment, the following rules must be strictly observed :

- **KEEP AWAY FROM LIVE CIRCUITS :**
Operating and maintenance people must at all time observe all safety regulations. Do not change components nor perform maintenance inside equipment with power ON or the lighting loop energised.
- **RESUSCITATION :**
Operating and maintenance personnel should familiarise and keep themselves trained with resuscitation techniques found in widely published manuals about first aid instructions.
- **ELECTROSTATIC DISCHARGE (ESD) :**
Electronic sub-assemblies and boards should be touched only for unavoidable operation (replacement, for example). Before to operate, maintenance people must first of all eliminate unwanted electronic charges, discharging his own body while touching a conductive earthed object or part. Electronic boards and components as power semiconductors must be stored and carried in a conductive packing.
- **DESTRUCTION :**
In case of dismantling, scrapping or placing out of service, the user must follow all the required precautions for component, materials or equipment elimination, according to the local rules.

EEC DIRECTIVES



This equipment complies with the requirements of EC directives :

- 89/336/EEC, 92/31/EEC and 93/68/EEC with regard to Electromagnetic Compatibility
- 73/23/EEC with regard to Low Voltage Equipment

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ABBREVIATIONS

[illegible]

I DESCRIPTION

I.1 OVERVIEW

DIAM4XXX CCRs can be controlled and monitored using 5 communications way:

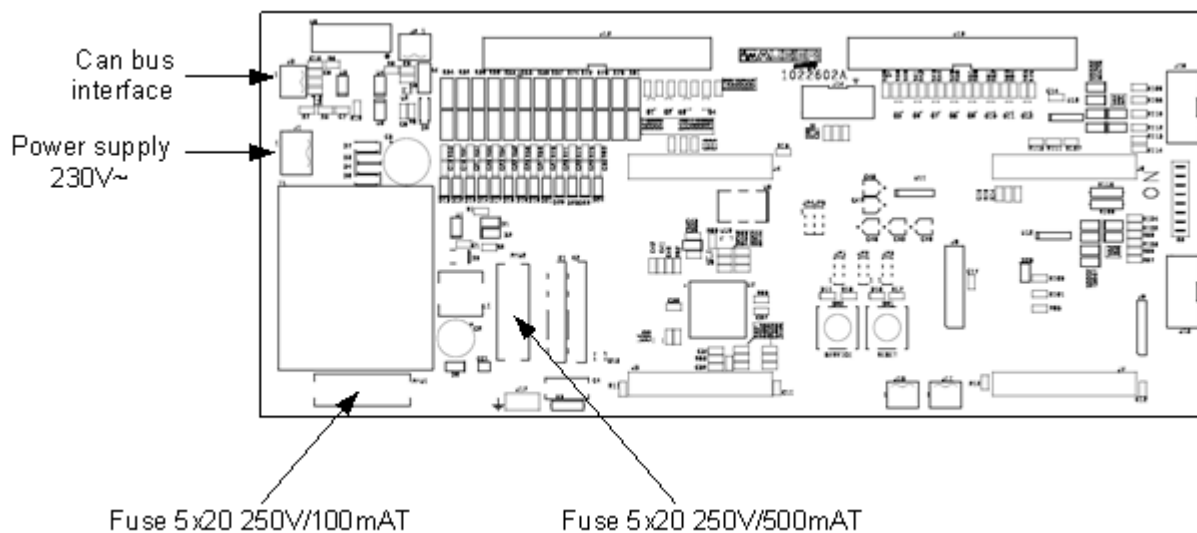
1. Multiwire interface IEC.
2. One or Two JBUS RS485 link, 4 wires or 2 wires.
3. One or Two ETHERNET MODBUS TCP links.
4. One LONWORKS link.
5. Two 4-20mA outputs (only for monitoring).

- **Standards:**

- ICAO: Airport design manual, part 5
- STNA: CCTP 91068 rev.93
- CENELEC: prENV 50231
- FAA: AC150/5345-10^F, L828 or L829
- AENA: PPT/002-05/13
- IEC: 61822 (CCRs), 61821 (Maintenance)

II INTERFACE BOARD

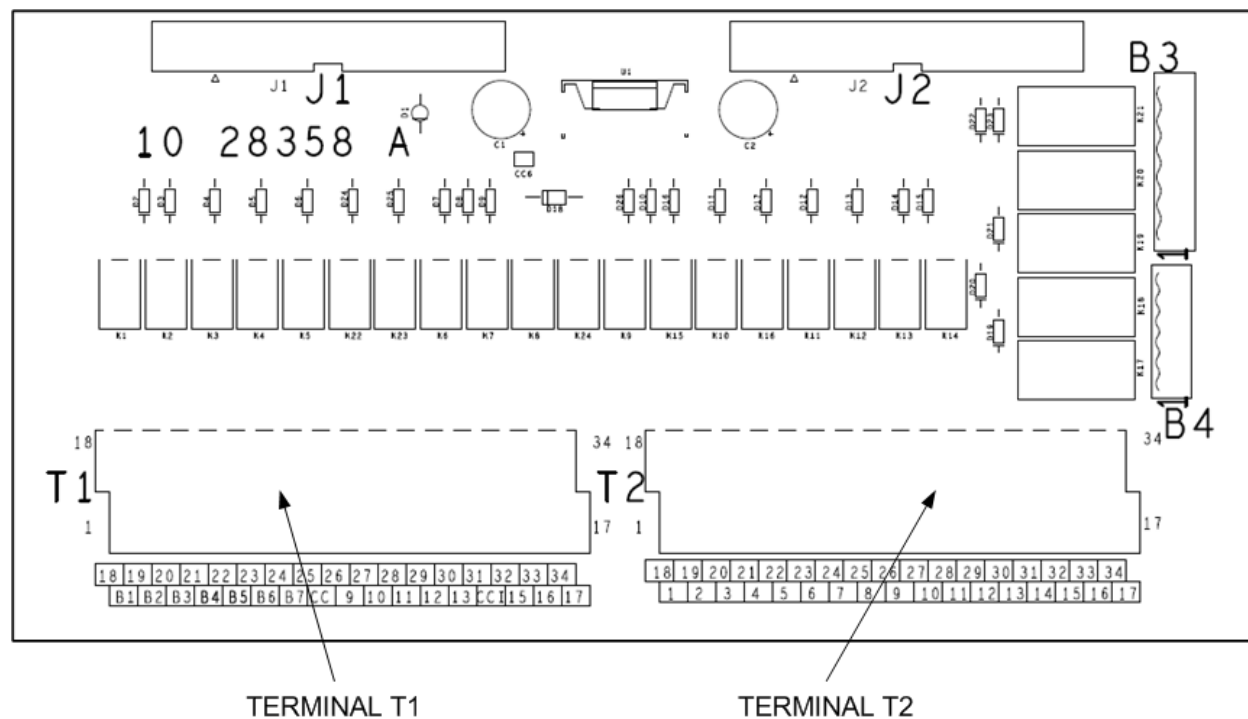
II.1 FUSE POSITION



II.2 MULTI WIRE INTERFACE

II.2.1 IEC RELAY BOARD

Printed Circuit Board reference : 10 28358 A



Contact Relays:

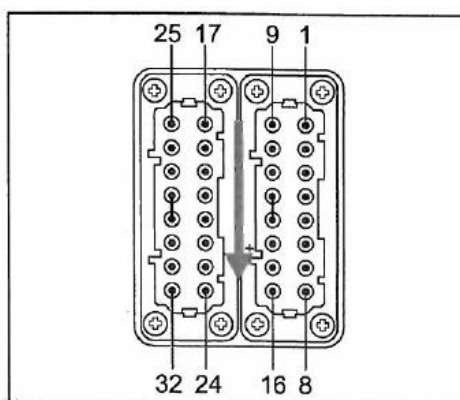
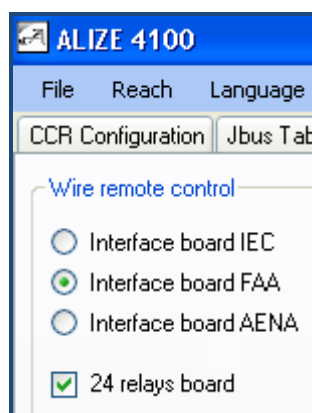
	AC	DC
Current range	1mA to 0.5A	1mA to 1A
Voltage range	0 to 125V	0 to 24V
Contact resistance	100mΩ	

II.2.1.1 32 PTS multiwire remote control with 20 to 60Vdc control supply

This relay board is used for 32 Pts rectangular connectors, 2 x 16 Pts.

ALIZE configuration:

View from CCR:



II.2.1.1.1 Connector références:

Terminal	CCR side	PLC side
Pins 1 to 16	ILME CDAF-16X	ILME CDAM-16X
Pins 17 to 32	ILME CDAF-16XN	ILME CDAM-16XN

II.2.1.1.2 Control (20 to 60 Vdc only) :

32PTS pin number	Fonction	T1/T2 terminal pin number
1	B1 control	T1-1
2	B2 control	T1-2
3	B3 control	T1-3
4	B4 control	T1-4
5	B5 control	T1-5
6	ON order	T1-8
17	Control common	T1-14

Note 2: for configuring the remote control type, see [Wiring remote control voltage configuration](#).

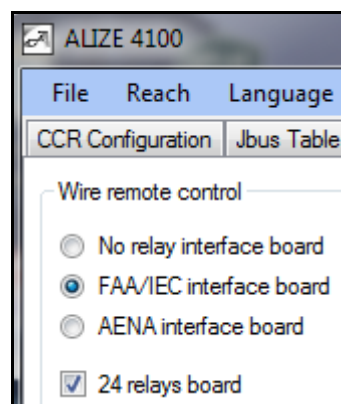
II.2.1.1.3 Monitoring (dry contacts):

32PTS pin number	Fonction	T1/T2 terminal pin number
7	No power line	T1-29
8	Monitoring common	T1-18-24-27-30-33, T2-2-5-8-11-14-17-23-27
9	B1 feedback	T1-19
10	B2 feedback	T1-20
11	B3 feedback	T1-21
12	B4 feedback	T1-22
13	B5 feedback	T1-23
14	Local mode	T1-26
16	Open circuit alarm	T1-32
19	Load energized	T2-24
20	Over current	T2-1
21	LFD level 1 warning	T2-13
22	Regulation warning	T2-4
23	LFD level 2 warning	T2-16
24	EFD level 1 warning	T2-7
25	EFD level 2 warning	T2-10
28	Remote mode	T1-28

II.2.1.2 SOURIAU multiwire remote control with 20 to 60Vdc control supply

This relay board is used for SOURIAU circulars connectors, 12 and 19 pins.

ALIZE configuration:



II.2.1.2.1 Control (20 to 60 Vdc only) :

Terminal	T.Bloc	Function	SOURIAU	Pin Type
1	T1	B1 control	12b/9	Input voltage with respect to C
2	T1	B2 control	12b/2	Input voltage with respect to C
3	T1	B3 control	12b/3	Input voltage with respect to C
4	T1	B4 control	12b/4	Input voltage with respect to C
5	T1	B5 control	12b/5	Input voltage with respect to C
8	T1	"ON" control	12b/7	Input voltage with respect to C
14	T1	C	12b/1	Common to Pin1 to Pin 13 inputs (Note 2)

Note 2: for configuring the remote control type, see [Wiring remote control voltage configuration](#).

II.2.1.2.2 Monitoring (dry contacts):

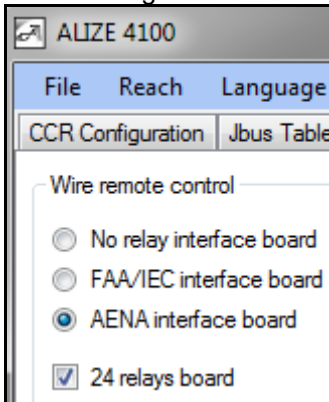
Terminal	T.Bloc	Function	SOURIAU	Pin Type
18	T1	Brightness return common	19b/1-3-5-7	Dry contact
19	T1	B1 return	19b/2	Dry contact
20	T1	B2 return	19b/4	Dry contact
21	T1	B3 return	19b/6	Dry contact
22	T1	B4 return	19b/8	Dry contact
23	T1	B5 return	19b/10 (*)	Dry contact
26	T1	Local	19b/12	Dry contact
27	T1	Common local/Remote	19b/11, 12b/6	Dry contact
28	T1	Remote	12b/10	Dry contact
29	T1	No power supply/no current	19b/18	Dry contact
30	T1	Common power supply/current	19b/17	Dry contact
31	T1	Power supply/current flow	19b/19	Dry contact
32-33	T1	Open circuit	19b/13-14	Dry contact
1-2	T2	Over current	19b/15-16	Dry contact
7-8	T2	Ground fault level 1	19b/9-10 (*)	Dry contact

In case of B5 return, pin 19b/10 is connected on T1-23, if not, pin 19b/10 is connected to T2-8.

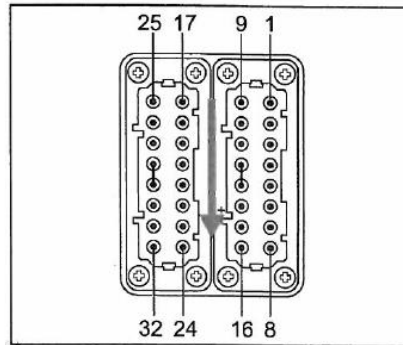
II.2.1.3 AENA multiwire remote control with 20 to 60Vdc control supply

This relay board is used for AENA connectors:

ALIZE configuration:



AENA connectors (CCR side):



Control and monitoring connections (AENA 2004):

AENA PIN	DESCRIPTION	VOLTAGE	FUNCTION	T1-T2 PIN
1	Command step 1	+ 48V	Control	T1-1
2	Command step 2	+ 48V	Control	T1-2
3	Command step 3	+ 48V	Control	T1-3
4	Command step 4	+ 48V	Control	T1-4
5	Command step 5	+ 48V	Control	T1-5
6	ON / OFF	+ 48V	Control	T1-8
7	Acknowledge of remote control supply voltage(*)	NO, C if no supply	Monitoring	T1-24
8	Signalling Common	Configurable	Monitoring	T1-18
9	Confirmed brightness step 1	NO, C if signal	Monitoring	T1-19
10	Confirmed brightness step 2	NO, C if signal	Monitoring	T1-20
11	Confirmed brightness step 3	NO, C if signal	Monitoring	T1-21
12	Confirmed brightness step 4	NO, C if signal	Monitoring	T1-22
13	Confirmed brightness step 5	NO, C if signal	Monitoring	T1-23
14	Local / remote signalling	NO, C if Local	Monitoring	T1-28
15	Input remote control supply voltage(*)	+ 48V	Control	T1-6
16	Signalling open circuit alarm	NO, C if signal	Monitoring	T1-31
17	Common command	Configurable	Control	T1-14
18	Common signalling	Configurable	Monitoring	COM
19	Constant current regulator ON	NO, C if signal	Monitoring	T1-34
20	Over current alarm	NO, C if signal	Monitoring	T2-3
21	Burnout lamp warning	NO, C if signal	Monitoring	T2-6
22	Constant current regulator out of range alarm	NO, C if signal	Monitoring	T2-9
23	Burnout lamp alarm	NO, C if signal	Monitoring	T2-12
24	Earth fault warning	NO, C if signal	Monitoring	T2-15
25	Earth fault alarm	NO, C if signal	Monitoring	T2-18
26	High temperature warning	NO, C if signal	Monitoring	T2-21
27	High temperature alarm	NO, C if signal	Monitoring	T2-30
28	Constant current regulator in remote mode	NO, C if remote	Monitoring	T2-26
29	Short-circuit signalling	NO, C if signal	Monitoring	T2-28
30	Input voltage warning	NO, C if signal	Monitoring	T2-22
31	Power measurement "SMP" 4-20mA		Monitoring	J10-1
32	Power measurement "SMP" 4-20mA		Monitoring	J10-2

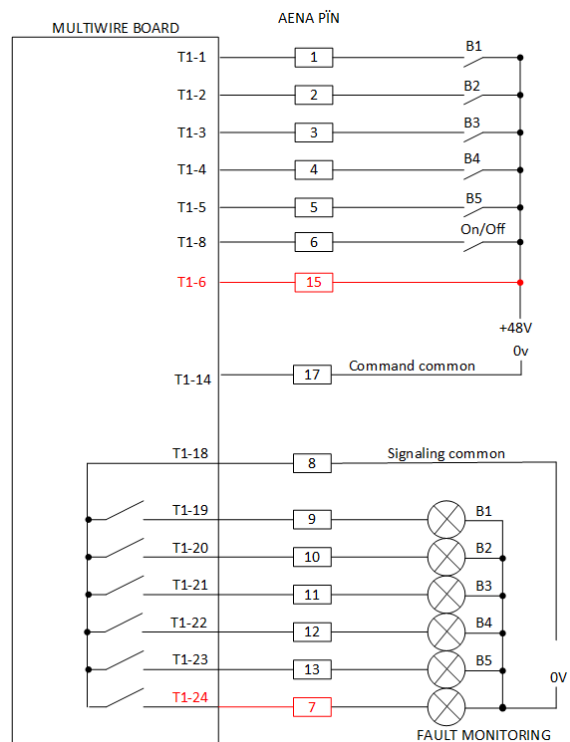
Note:

- COM connected to T1-16, T1-18, T1-20, T1-22, T1-24, T1-27, T1-30, T1-33, T2-2, T2-5, T2-8, T2-11, T2-14, T2-17, T2-20, T2-23, T2-25, T2-27, T2-29.
- NO : Normally open, C : Closed

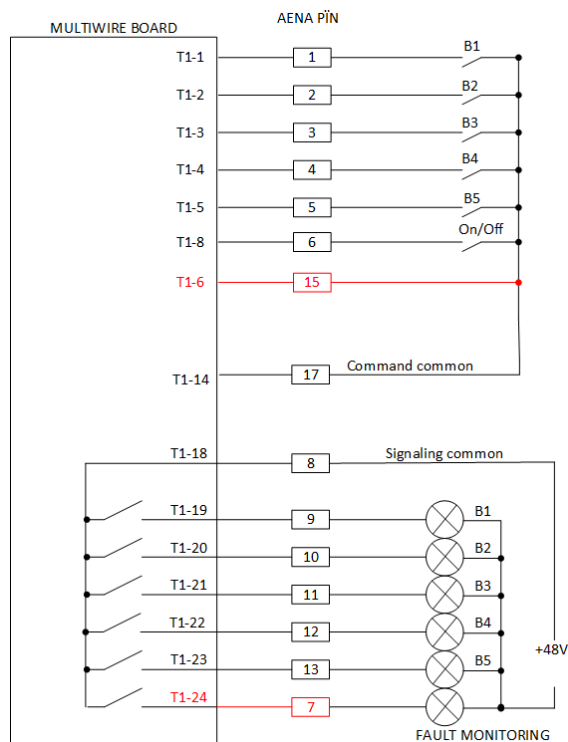
Note (*) :

Wiring diagram for **remote control voltage monitoring** 'pin 7 & 15 in AENA plug :

EXTERNAL VOLTAGE



INTERNAL VOLTAGE

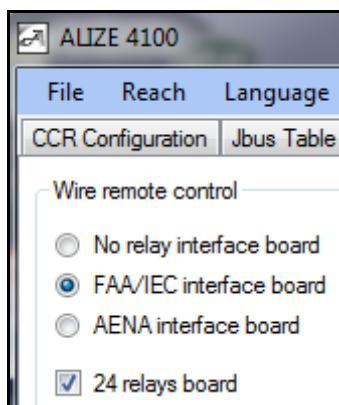


❗ If connection in pin 15 not present, the relay in pin 7 is closed.

❗ Function available with interface board firmware version from V37.

II.2.1.4 Multiwire remote control with 20 to 60Vdc control supply

ALIZE configuration:



The 34-pin terminal blocks making up the inputs and outputs for remote control are situated at the back of the CCR.

II.2.1.4.1 Inputs (20 to 60 Vdc only) :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	T1	B1 control	B1	Input voltage with respect to C
2	T1	B2 control	B2	Input voltage with respect to C
3	T1	B3 control	B3	Input voltage with respect to C
4	T1	B4 control	B4	Input voltage with respect to C
5	T1	B5 control	B5	Input voltage with respect to C
6	T1	B6 control	B6	Input voltage with respect to C
7	T1	B7 control (**)	B7	Input voltage with respect to C
8	T1	"ON" control	CC	Input voltage with respect to C
9	T1	Circuit 1 control (*)		Input voltage with respect to C
10	T1	Circuit 2 control (*)		Input voltage with respect to C
11	T1	Circuit 3 control (*)		Input voltage with respect to C
12	T1	Circuit 4 control (*)		Input voltage with respect to C
13	T1	Circuit 5 control (*)		Input voltage with respect to C
14	T1	C	CCI	Common to Pin1 to Pin 13 inputs

i The remote control **protection fuse** is marked as PFU2 on the interface board (5x20mm 250V/500mA)

(**) If Integrated circuit selector (ICS), this input is "Circuit 6 control".

(*) If integrated circuit selector (ICS).

II.2.1.4.2 Multiwire remote control outputs:

The table below describes inputs and outputs given by terminal blocks T1 and T2 of the remote control board, and indicates whether the information is available or not depending on the regulator power supply

MONITORING (Outputs)						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T1	16	Circuit 6 energised (*)	COM		♦	
	17		NO		♦	
	18	Brightness return common	COM			♦
	19	B1 return	NO			♦
	20	B2 return	NO			♦
	21	B3 return	NO			♦
	22	B4 return	NO			♦
	23	B5 return	NO			♦
	24	B6 return	NO			♦
	25	B7 return	NO			♦
	26	Local mode return	NC	♦		♦
	27		COM	♦	♦	♦
	28		NO		♦	
	29	No power line / Loop current	NC	♦		♦
	30		COM	♦	♦	♦
	31		NO		♦	
	32	Open circuit alarm	NC	♦		♦
	33		COM	♦	♦	♦
	34		NO		♦	

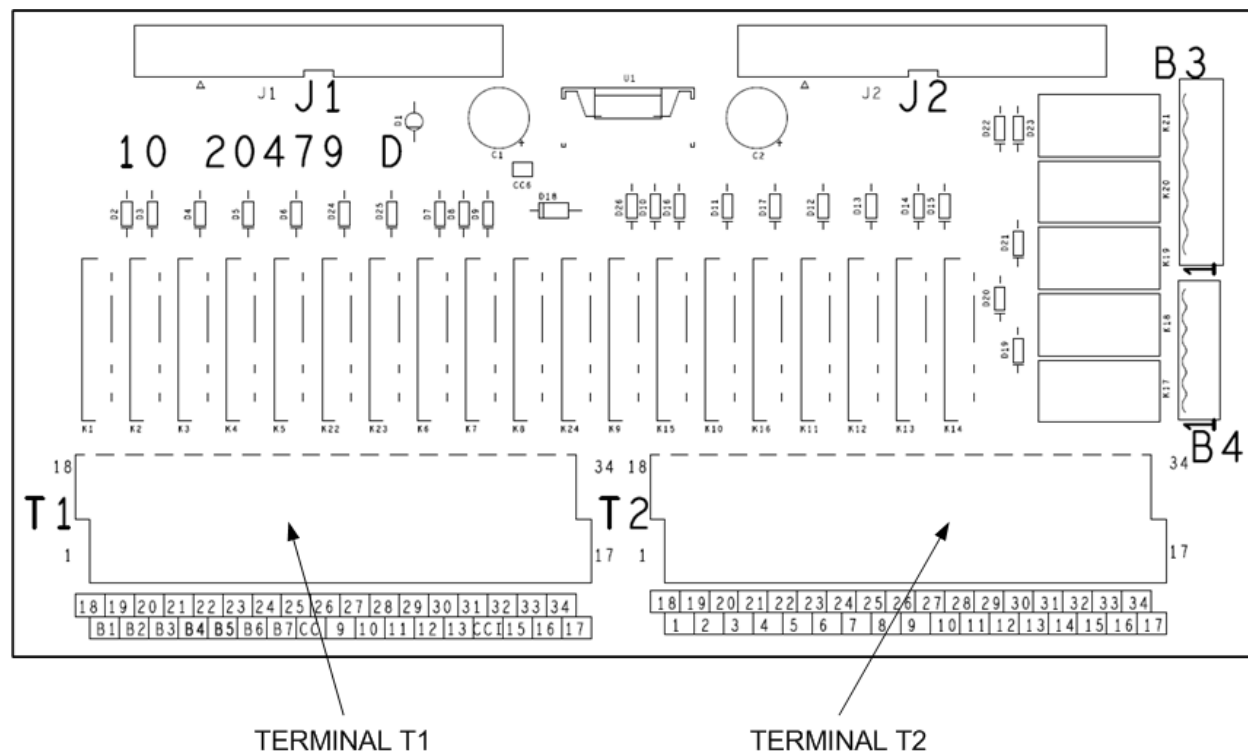
(*) If integrated circuit selector (ICS).

MONITORING (Outputs)						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T2	1	Over current alarm	NC	♦		♦
	2		COM	♦	♦	♦
	3		NO		♦	
	4	Regulation error alarm	NC	♦		♦
	5		COM	♦	♦	♦
	6		NO		♦	
	7	Earth fault Level 1 warning	NC	♦		♦
	8		COM	♦	♦	♦
	9		NO		♦	
	10	Earth fault Level 2 warning	NC	♦		♦
	11		COM	♦	♦	♦
	12		NO		♦	
	13	Burn lamp fault Level 1 warning	NC	♦		♦
	14		COM	♦	♦	♦
	15		NO		♦	
	16	Burn lamp fault Level 2 warning	NC	♦		♦
	17		COM	♦	♦	♦
	18		NO		♦	
	19	Power drop 10% or greater warning	NC	♦		♦
	20		COM	♦	♦	♦
	21		NO		♦	
	22	Load energized	NC	♦	♦	
	23		COM	♦	♦	♦
	24		NO			♦
	25	Circuit 1 energised (*)	COM		♦	
	26		NO		♦	
	27	Circuit 2 energised (*)	COM		♦	
	28		NO		♦	
	29	Circuit 3 energised (*)	COM		♦	
	30		NO		♦	
	31	Circuit 4 energised (*)	COM		♦	
	32		NO		♦	
	33	Circuit 5 energised (*)	COM		♦	
	34		NO		♦	

(*) If integrated circuit selector (ICS).

II.2.2 FAA RELAY BOARD

Printed Circuit Board reference : 10 20479 D

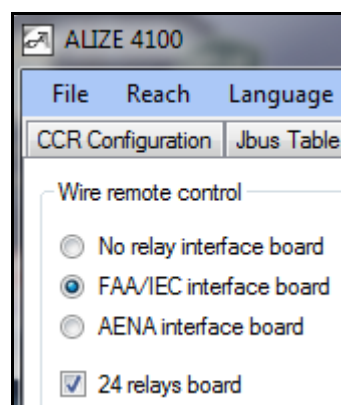


Contact Relays:

	AC	DC
Current range	100mA to 6A	100mA to 2A
Voltage range	0 to 250V	0 to 24V
Contact resistance	100mΩ	

II.2.2.1 FAA Multiwire remote control with 20 to 60Vdc control supply

ALIZE configuration:



II.2.2.2 FAA Multiwire remote control with EXTERNAL 20 to 60Vdc control supply

When delivered, the CCR is configured in factory as :

- "External" power supply: see [Wiring remote control voltage configuration](#).
- "ON order" : see [Operating modes for multiwire \(FAA & IEC\) remote control](#) :
- Default brightness B1 (2.8A)
- 1, 3 or 5 brightness, as ordered and indicated in the part number (see at the end [appendix C: PART NUMBER IDENTIFICATION](#).)

The 34-pin terminal blocks making up the inputs and outputs for remote control are situated at the back of the CCR.

II.2.2.2.1 Inputs (20 to 60 Vdc only) :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	T1	B1 control	B1	Input voltage with respect to C
2	T1	B2 control	B2	Input voltage with respect to C
3	T1	B3 control	B3	Input voltage with respect to C
4	T1	B4 control	B4	Input voltage with respect to C
5	T1	B5 control	B5	Input voltage with respect to C
6	T1	B6 control	B6	Input voltage with respect to C
7	T1	B7 control (**)	B7	Input voltage with respect to C
8	T1	"ON" control	CC	Input voltage with respect to C
9	T1	Circuit 1 control (*)		Input voltage with respect to C
10	T1	Circuit 2 control (*)		Input voltage with respect to C
11	T1	Circuit 3 control (*)		Input voltage with respect to C
12	T1	Circuit 4 control (*)		Input voltage with respect to C
13	T1	Circuit 5 control (*)		Input voltage with respect to C
14	T1	C	CCI	Common to Pin1 to Pin 13 inputs

Notes :

FAA Labels :

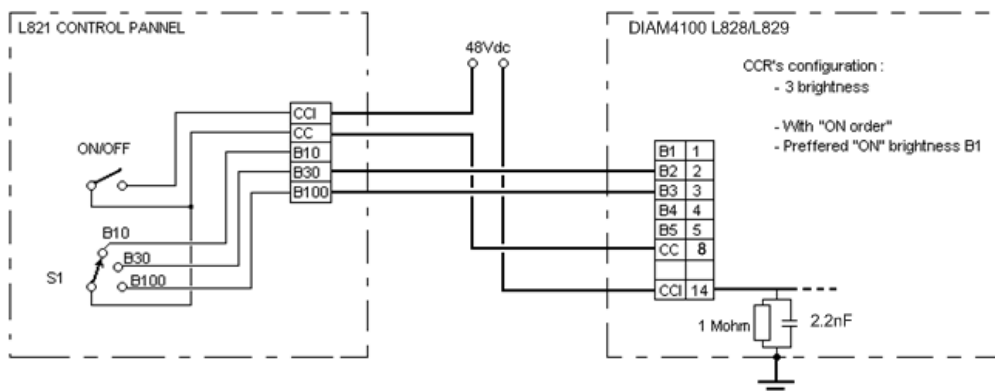
- CCI is the common of the external power supply (20 to 60Vdc) for all inputs (Pins 1 to 13).
- CC : when selected, the CCR goes to B1 (see [Operating modes for multiwire \(FAA & IEC\) remote control](#) :)
- (*) If there is a built-in circuit selector under the CCR (2 to 6 ways)
- (**) In case of 6 circuits selector, "B7 control" replaced by "Circuit 6 control".



The remote control **protection fuse** is marked as PFU2 on the interface board (5x20mm 250V/500mAT)

II.2.2.3 Example of FAA wiring : EXTERNAL 48Vdc

- According AC150/5340-30, and only for control lines
- 3 Steps CCR
- Polarity : irrelevant (see [Wiring remote control voltage configuration](#)):



II.2.2.4 FAA Multiwire remote control with INTERNAL 20 to 60Vdc control supply

When delivered, the CCR is configured in factory as :

- "Internal" power supply: see: [Wiring remote control voltage configuration](#)
- "ON order" see: [Operating modes for multiwire \(FAA & IEC\) remote control](#) :
- Default brightness B1 (2.8A)
- 1, 3 or 5 brightness, as ordered and indicated in the part number (see at the end [appendix C: PART NUMBER IDENTIFICATION](#).)

The 34-pin terminal blocks making up the inputs and outputs for remote control are situated at the back of the CCR.

II.2.2.4.1 Inputs (contacts free of voltage only) :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	T1	B1 control	B1	Contact or short-circuit with C
2	T1	B2 control	B2	Contact or short-circuit with C
3	T1	B3 control	B3	Contact or short-circuit with C
4	T1	B4 control	B4	Contact or short-circuit with C
5	T1	B5 control	B5	Contact or short-circuit with C
6	T1	B6 control	B6	Contact or short-circuit with C
7	T1	B7 control (**)	B7	Contact or short-circuit with C
8	T1	"ON" control	CC	Contact or short-circuit with C
9	T1	Circuit 1 control (*)		Contact or short-circuit with C
10	T1	Circuit 2 control (*)		Contact or short-circuit with C
11	T1	Circuit 3 control (*)		Contact or short-circuit with C
12	T1	Circuit 4 control (*)		Contact or short-circuit with C
13	T1	Circuit 5 control (*)		Contact or short-circuit with C
14	T1	C	CCI	Common to Pin1 to Pin 13 inputs

Notes :

FAA Labels :

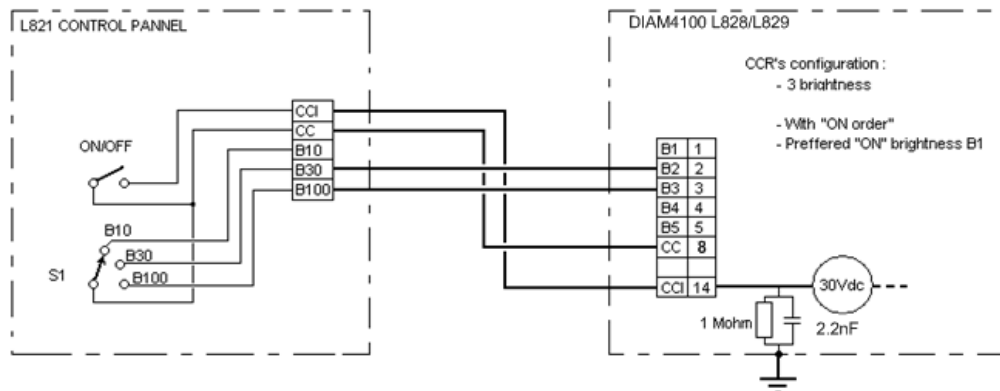
- CCI : common of the internal power supply (30Vdc) : must be linked to an input for activation (Pins 1 to 13).
- "CC" : when selected, the CCR goes to B1 (see: [Operating modes for multiwire \(FAA & IEC\) remote control](#) :)
- (*) If there is a built-in circuit selector under the CCR (2 to 6 ways)
- (**) In case of 6 circuits selector, "B7 control" replaced by "Circuit 6 control".



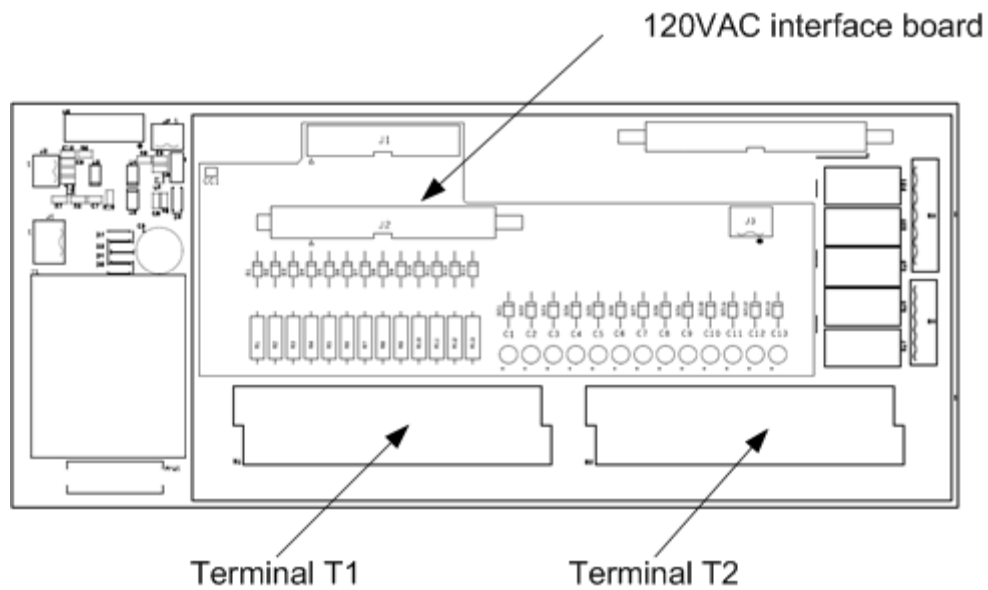
The remote control **protection fuse** is marked as PFU2 on the interface board (5x20mm 250V/500mAT)

II.2.2.5 Example of FAA wiring : INTERNAL 20 to 60Vdc

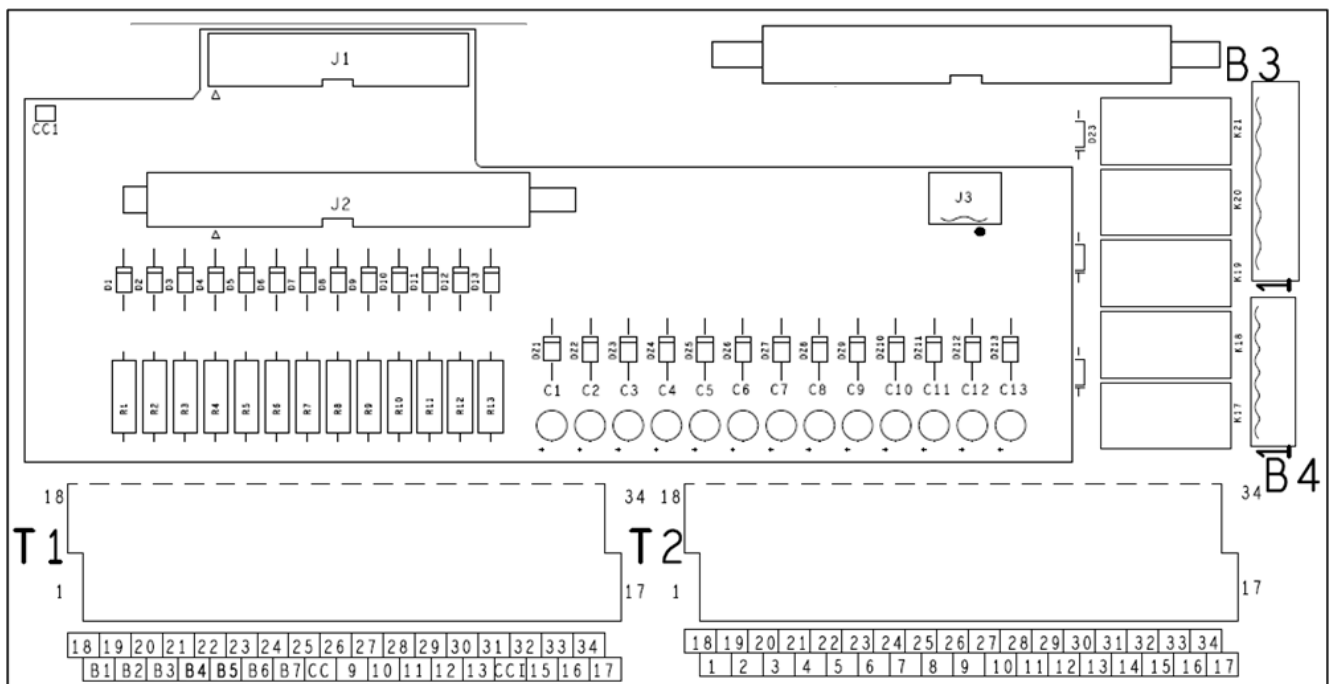
- According AC150/5340-30, and only for control lines
- 3 Steps CCR



II.2.2.6 FAA Multiwire remote control with 120Vac control supply



MARKING:



II.2.2.7 FAA Multiwire remote control with EXTERNAL 120Vac control supply

When delivered, the CCR is configured in factory as :

- "External" power supply, see: [Wiring remote control voltage configuration](#)
- a small daughter board is plugged on J1 of the FAA remote control board
- "ON order" see: [Operating modes for multiwire \(FAA & IEC\) remote control :](#)
- Default brightness B1 (2.8A)
- 1, 3 or 5 brightness, as ordered and indicated in the part number (see at the end [appendix C: PART NUMBER IDENTIFICATION](#))

The 34-pin terminal blocks making up the inputs and outputs for remote control are situated at the back of the CCR.

II.2.2.7.1 Inputs (120Vac only) :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	T1	B1 control	B1	Input voltage with respect to C
2	T1	B2 control	B2	Input voltage with respect to C
3	T1	B3 control	B3	Input voltage with respect to C
4	T1	B4 control	B4	Input voltage with respect to C
5	T1	B5 control	B5	Input voltage with respect to C
6	T1	B6 control	B6	Input voltage with respect to C
7	T1	B7 control (**)	B7	Input voltage with respect to C
8	T1	"ON" control	CC	Input voltage with respect to C
9	T1	Circuit 1 control (*)		Input voltage with respect to C
10	T1	Circuit 2 control (*)		Input voltage with respect to C
11	T1	Circuit 3 control (*)		Input voltage with respect to C
12	T1	Circuit 4 control (*)		Input voltage with respect to C
13	T1	Circuit 5 control (*)		Input voltage with respect to C
14	T1	C	CCI	Common to Pin1 to Pin 13 inputs

Notes :

FAA Labels :

- CCI is the common of the external power supply (120Vac) for all inputs (Pins 1 to 13).
- CC : when selected, the CCR goes to B1 (see [Operating modes for multiwire \(FAA & IEC\) remote control :](#))

(*) If there is a built-in circuit selector under the CCR (2 to 6 ways)

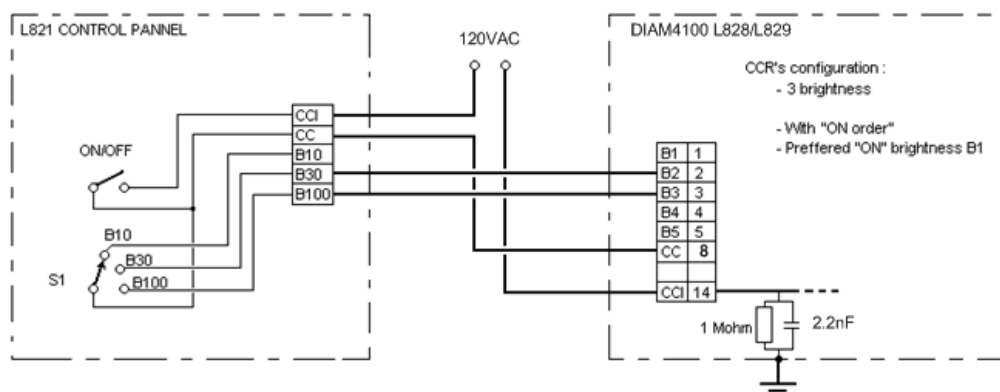
(**) In case of 6 circuits selector, "B7 control" replaced by "Circuit 6 control".



The remote control **protection fuse** is marked as PFU2 on the interface board (5x20mm 250V/500mAT)

II.2.2.8 Example of FAA wiring : EXTERNAL 120 Vac

- According AC150/5340-30, and only for control lines
- 3 Steps CCR
- Neutral : irrelevant
- Note than CCI is linked to earth through 1Mohm/2.2nF on the mother-board



II.2.2.9 FAA Multiwire remote control with INTERNAL 120Vac control supply

When delivered, the CCR is configured in factory as :

- "External" power supply, see: [Wiring remote control voltage configuration](#)
- a small daughter board is plugged on J1 of the FAA remote control board
- "ON order" see: [Operating modes for multiwire \(FAA & IEC\) remote control :](#)
- Default brightness B1 (2.8A)
- 1, 3 or 5 brightness, as ordered and indicated in the part number (see at the end [appendix C: PART NUMBER IDENTIFICATION](#))

The 34-pin terminal blocks making up the inputs and outputs for remote control are situated at the back of the CCR.

II.2.2.9.1 Inputs (contacts free of voltage only) :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	T1	B1 control	B1	Contact or short-circuit with C
2	T1	B2 control	B2	Contact or short-circuit with C
3	T1	B3 control	B3	Contact or short-circuit with C
4	T1	B4 control	B4	Contact or short-circuit with C
5	T1	B5 control	B5	Contact or short-circuit with C
6	T1	B6 control	B6	Contact or short-circuit with C
7	T1	B7 control (**)	B7	Contact or short-circuit with C
8	T1	"ON" control	CC	Contact or short-circuit with C
9	T1	Circuit 1 control (*)		Contact or short-circuit with C
10	T1	Circuit 2 control (*)		Contact or short-circuit with C
11	T1	Circuit 3 control (*)		Contact or short-circuit with C
12	T1	Circuit 4 control (*)		Contact or short-circuit with C
13	T1	Circuit 5 control (*)		Contact or short-circuit with C
14	T1	C	CCI	Common to Pin1 to Pin 13 inputs

Notes :

FAA Labels :

- CCI : common of the internal power supply (120Vac) : must be linked to an input for activation (Pins 1 to 13).
- CC : when selected, the CCR goes to B1 (see [Operating modes for multiwire \(FAA & IEC\) remote control :](#))

(*) If there is a built-in circuit selector under the CCR (2 to 6 ways)

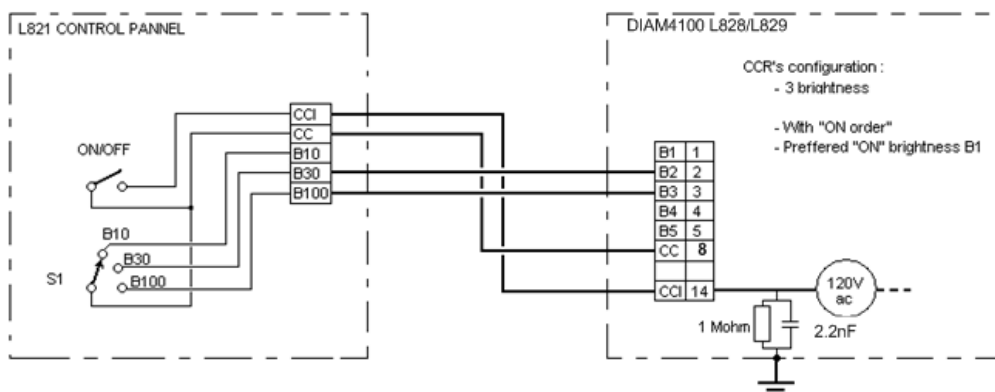
(**) In case of 6 circuits selector, "B7 control" replaced by "Circuit 6 control".



The remote control **protection fuse** is marked as PFU2 on the interface board (5x20mm 250V/500mA)

II.2.2.10 Example of FAA wiring : INTERNAL 120Vac

- According AC150/5340-30, and only for control lines
- 3 Steps CCR
- The 120V source is isolated from mains.
- Note than CCI is linked to earth through 1Mohm/2.2nF on the mother-board



II.2.2.11 FAA Multiwire remote control outputs:

The table below describes inputs and outputs given by terminal blocks T1 and T2 of the remote control board, and indicates whether the information is available or not depending on the regulator power supply

MONITORING (Outputs)						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T1	16	Circuit 6 energised	COM		♦	
	17		NO		♦	
	18	Brightness return common	COM			♦
	19	B1 return	NO			♦
	20	B2 return	NO			♦
	21	B3 return	NO			♦
	22	B4 return	NO			♦
	23	B5 return	NO			♦
	24	B6 return	NO			♦
	25	B7 return	NO			♦
	26	Local mode return	NC	♦		♦
	27		COM	♦	♦	♦
	28		NO		♦	
	29	No power line / Loop current	NC	♦		♦
	30		COM	♦	♦	♦
	31		NO		♦	
	32	Open circuit alarm	NC	♦		♦
	33		COM	♦	♦	♦
	34		NO		♦	

MONITORING (Outputs)						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T2	1	Over current alarm	NC	◆		◆
	2		COM	◆	◆	◆
	3		NO		◆	
	4	Regulation error alarm	NC	◆		◆
	5		COM	◆	◆	◆
	6		NO		◆	
	7	Earth fault Level 1 warning	NC	◆		◆
	8		COM	◆	◆	◆
	9		NO		◆	
	10	Earth fault Level 2 warning	NC	◆		◆
	11		COM	◆	◆	◆
	12		NO		◆	
	13	Burn lamp fault Level 1 warning	NC	◆		◆
	14		COM	◆	◆	◆
	15		NO		◆	
	16	Burn lamp fault Level 2 warning	NC	◆		◆
	17		COM	◆	◆	◆
	18		NO		◆	
	19	Power drop 10% or greater warning	NC	◆		◆
	20		COM	◆	◆	◆
	21		NO		◆	
	22	Load energized	NC	◆	◆	
	23		COM	◆	◆	◆
	24		NO			◆

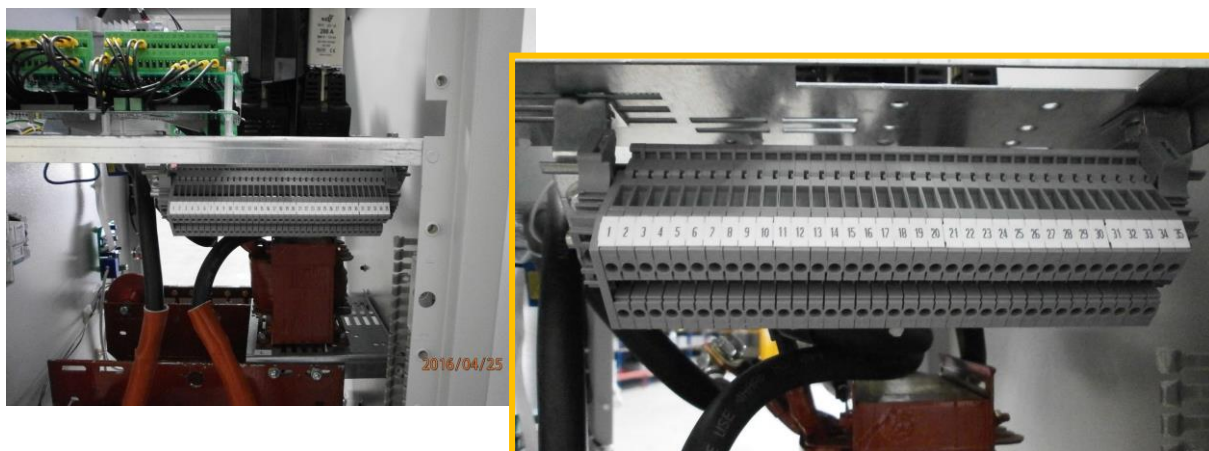
Contact Relays: 125VAC / 2A or 125VDC / 2A resistive load

FAA TYPE (MONITORING)						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T2	25	Circuit 1 energised	COM		◆	
	26		NO		◆	
	27	Circuit 2 energised	COM		◆	
	28		NO		◆	
	29	Circuit 3 energised	COM		◆	
	30		NO		◆	
	31	Circuit 4 energised	COM		◆	
	32		NO		◆	
	33	Circuit 5 energised	COM		◆	
	34		NO		◆	

Contact Relays: 125VAC / 0.3A or 30VDC / 1A resistive load

II.2.2.12 SPECIFIC TERMINAL BLOCK according FAA AC150/5345-10 :

The remote control connections of FAA compliant regulators are achieved through a set of chassis mounted terminal, inside the rear side of the device (see diagram IV, p.78)



INPUTS :

Terminal	T.Bloc	Function	FAA label	Pin Type
1	CHASSIS, B1-1	B1 control	B1	Contact or short-circuit with C
2	CHASSIS, B1-2	B2 control	B2	Contact or short-circuit with C
3	CHASSIS, B1-3	B3 control	B3	Contact or short-circuit with C
4	CHASSIS, B1-4	B4 control	B4	Contact or short-circuit with C
5	CHASSIS, B1-5	B5 control	B5	Contact or short-circuit with C
6	CHASSIS, B1-6	B6 control	B6	Contact or short-circuit with C
7	CHASSIS, B1-7	B7 control	B7	Contact or short-circuit with C
8	CHASSIS, B1-8	“ON” control	CC	Contact or short-circuit with C
9	CHASSIS, B1-14	C	CCI	Common to Pin1 to Pin 6 inputs

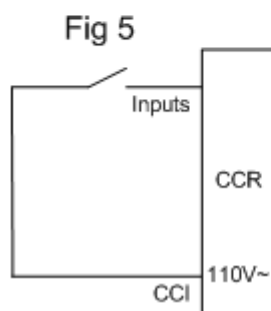
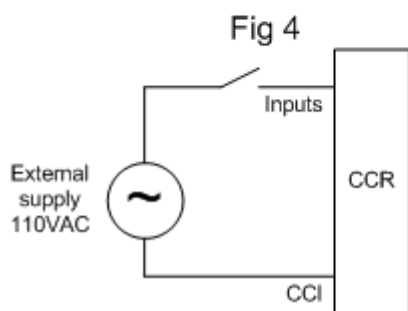
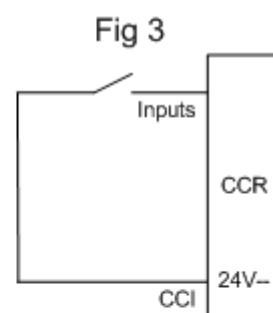
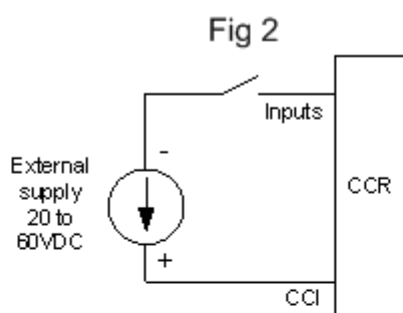
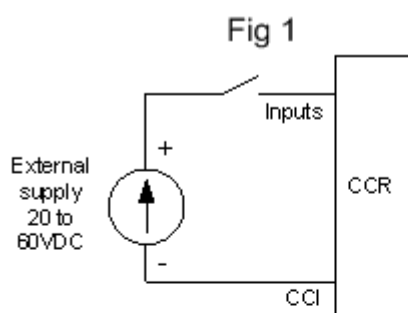
OUTPUTS :

Terminal	T.Bloc	Label	Pin Type
10	CHASSIS, B1-18	RETURN BRIGHTNESS COMMON	Dry contact
11	CHASSIS, B1-19	B1 RETURN	Dry contact
12	CHASSIS, B1-20	B2 RETURN	Dry contact
13	CHASSIS, B1-21	B3 RETURN	Dry contact
14	CHASSIS, B1-22	B4 RETURN	Dry contact
15	CHASSIS, B1-23	B5 RETURN	Dry contact
16	CHASSIS, B1-24	B6 RETURN	Dry contact
17	CHASSIS, B1-25	B7 RETURN	Dry contact
18	CHASSIS, B1-26	LOCAL MODE	Dry contact
19	CHASSIS, B1-27	LOCAL MODE	Dry contact
20	CHASSIS, B1-29	NO POWER LINE	Dry contact
21	CHASSIS, B1-30	NO POWER LINE	Dry contact
22	CHASSIS, B1-32	OPEN CIRCUIT	Dry contact
23	CHASSIS, B1-33	OPEN CIRCUIT	Dry contact
24	CHASSIS, B2-1	OVER CURRENT	Dry contact
25	CHASSIS, B2-2	OVER CURRENT	Dry contact
26	CHASSIS, B2-4	REGULATION ERROR	Dry contact
27	CHASSIS, B2-5	REGULATION ERROR	Dry contact
28	CHASSIS, B2-13	LAMP FAULT DETECT LEVEL 1	Dry contact
29	CHASSIS, B2-14	LAMP FAULT DETECT LEVEL 1	Dry contact
30	CHASSIS, B2-16	LAMP FAULT DETECT LEVEL 2	Dry contact
31	CHASSIS, B2-17	LAMP FAULT DETECT LEVEL 2	Dry contact
32	CHASSIS, B2-19	POWER DROP 0,1	Dry contact
33	CHASSIS, B2-20	POWER DROP 0,1	Dry contact
34	CHASSIS, B2-23	LOAD ENERGIZED	Dry contact
35	CHASSIS, B2-24	LOAD ENERGIZED	Dry contact

II.2.2.13 Wiring remote control voltage configuration

The DIAM CCR can be remotely controlled either by an external voltage (20 to 60 VDC positive or negative, or 120Vac), or by “free potential” contacts (internal power supply 30VDC from the CCR, or additional 120Vac source). This choice is made by the values at address 70 in the Jbus table.

CONTROL INPUTS CONFIGURATION										
Inputs configuration	Fig	Jbus address	B7	B6	B5	B4	B3	B2	B1	B0
External voltage +20V to +60V-- to control the inputs	1	70	X	0	X	X	X	X	0	0
External voltage -20V to -60V-- to control the inputs	2	70	X	1	X	X	X	X	0	0
Contacts to control the inputs. 24V-- internal voltage	3	70	X	0	X	X	X	X	0	1
FAA type only. External voltage 115V~ to control the inputs	4	70	X	0	X	0	X	X	1	0
FAA type only. Internal voltage 115V~ to control the inputs	5	70	X	0	X	0	X	X	1	0



ALIZE4100 configuration:

Fig 1:

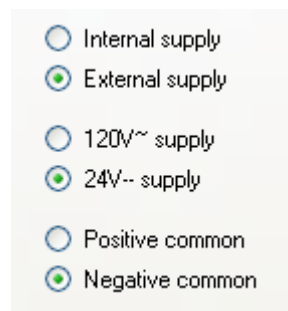


Fig 2:

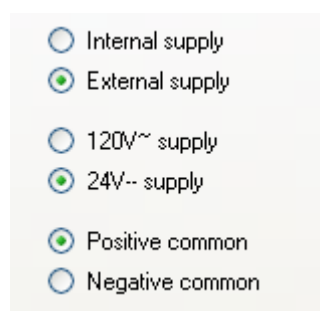


Fig 3:

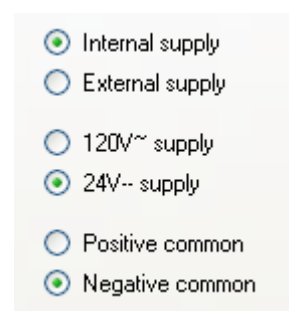


Fig 4:

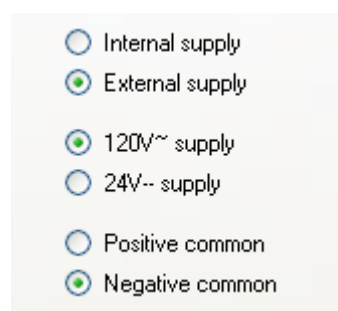
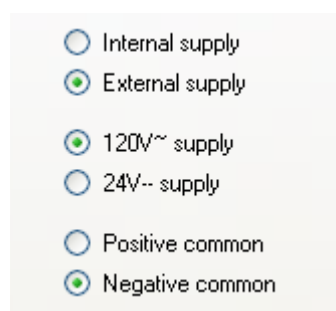


Fig 5:



IMPORTANT NOTICE :

This control inputs configuration, as other configuration elements, are set in factory according the kind of remote control board and the type of control supply.

See the part number wrote on the identification plate to know the type of remote control delivered (end [appendix C: PART NUMBER IDENTIFICATION](#) at the end of the manual)

II.2.2.14 Operating modes for multiwire (FAA & IEC) remote control

The device can be controlled in two ways:

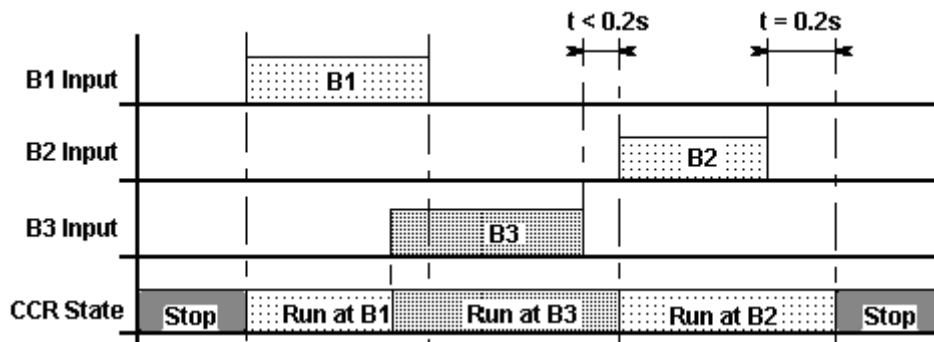
- “Without ON order”, with direct command of brightness levels. (preferred configuration)
- “With ON order” and brightness selection

The choice is made by setting a parameter in the jbus table using ALIZE4100 software.

ON ORDER CONFIGURATION									
Inputs configuration	Jbus address	B7	B6	B5	B4	B3	B2	B1	B0
Without ON ORDER	69	X	X	X	X	X	X	X	0
With ON ORDER (B0 Brightness)	69	X	X	X	X	X	X	0	1
With ON ORDER (B1 Brightness)	69	X	X	X	X	X	X	1	1

Without ON order:

Activating input B0, B1,... B7 causes the device to start up at the selected brightness. The CCR stops 0.2s after any order has stopped.



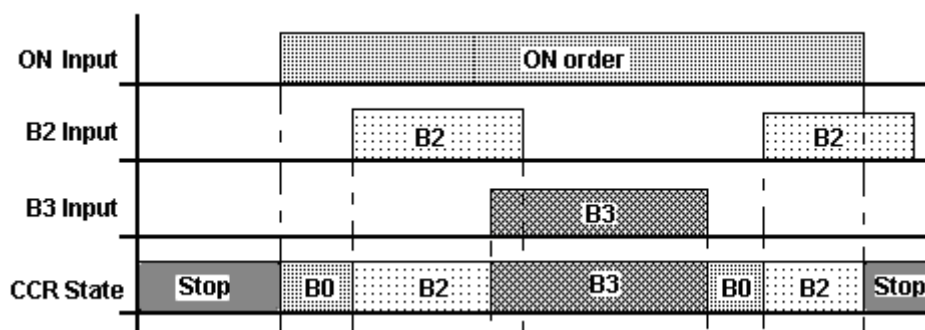
With ON order:

Activation of the “ON” input causes the CCR to start up at the preferred brightness defined (B0 or B1), if no brightness level has been selected.

Brightness level is changed by adding the desired brightness input.

The CCR stops when the “On” order is stopped whatever the states of the brightness inputs.

The choice of B0 or B1 is configurable using the ALIZE4100 software. (B0 is the default value)



II.2.3 DEC/BIN WIRE CONTROL MODE

Wire remote control inputs for brightness can be standard, one wire for each brightness (DEC mode) or coded on 3 bits, 3 wires to control the 7 brightness levels (BIN mode).

Terminal	T.Bloc	DEC mode (standard) Function	BIN mode Function
1	T1	B1 control	Bit 0
2	T1	B2 control	Bit 1
3	T1	B3 control	Bit 2
4	T1	B4 control	-
5	T1	B5 control	-
6	T1	B6 control	-
7	T1	B7 control (**)	(**)
8	T1	"ON" control	"ON" control
9	T1	Circuit 1 control (*)	Circuit 1 control (*)
10	T1	Circuit 2 control (*)	Circuit 2 control (*)
11	T1	Circuit 3 control (*)	Circuit 3 control (*)
12	T1	Circuit 4 control (*)	Circuit 4 control (*)
13	T1	Circuit 5 control (*)	Circuit 5 control (*)
14	T1	C	C

(*) If there is a built-in circuit selector under the CCR (2 to 6 ways)

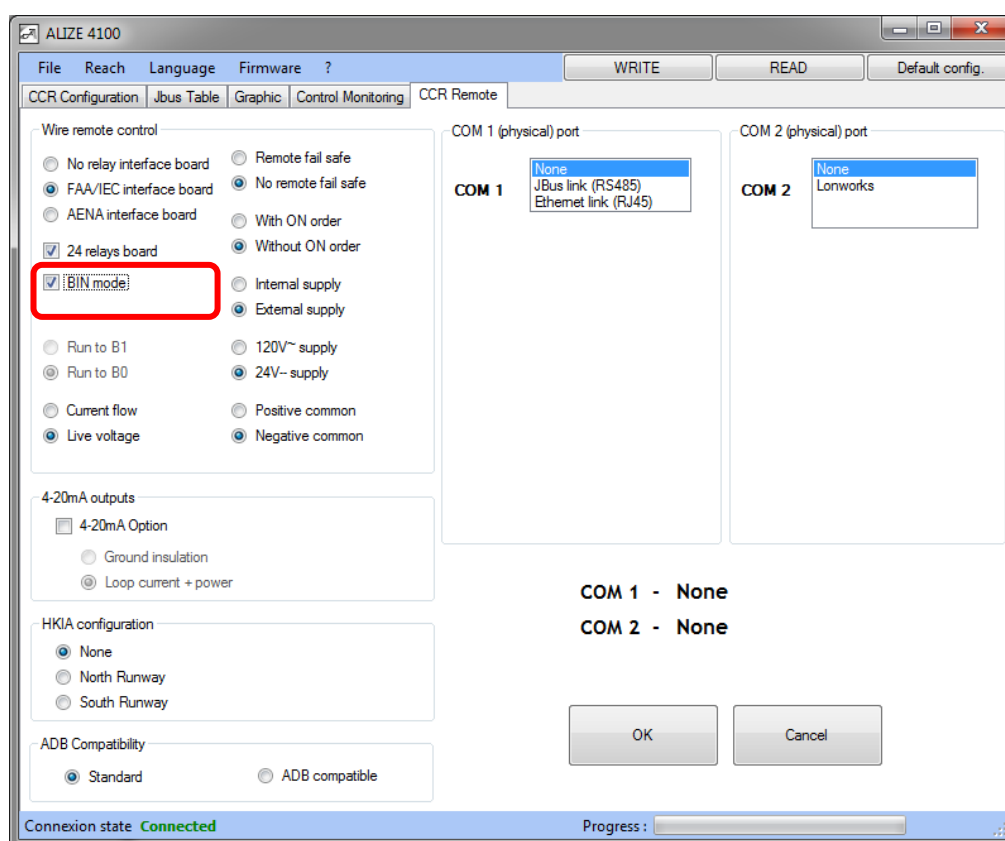
(**) In case of 6 circuits selector, "B7 control" replaced by "Circuit 6 control".

BIN control monde			
Bit 2	Bit 1	Bit 0	Brightness level
✗	✗	✗	No brightness
✗	✗	✓	1
✗	✓	✗	2
✗	✓	✓	3
✓	✗	✗	4
✓	✗	✓	5
✓	✓	✗	6
✓	✓	✓	7

Brightness feedback in BIN mode (relay board):

Monitoring						
Terminal	Pin B1	Information feedback	Relay contact	CCR power		
				OFF	ON	
					Information feedback: NO	Information feedback: YES
T1	18	Brightness return common	COM			◆
	19	Bit 0 return	NO			◆
	20	Bit 1 return	NO			◆
	21	Bit 2 return	NO			◆
	22	Not used	NO			
	23	Not used	NO			
	24	Not used	NO			
	25	Not used	NO			

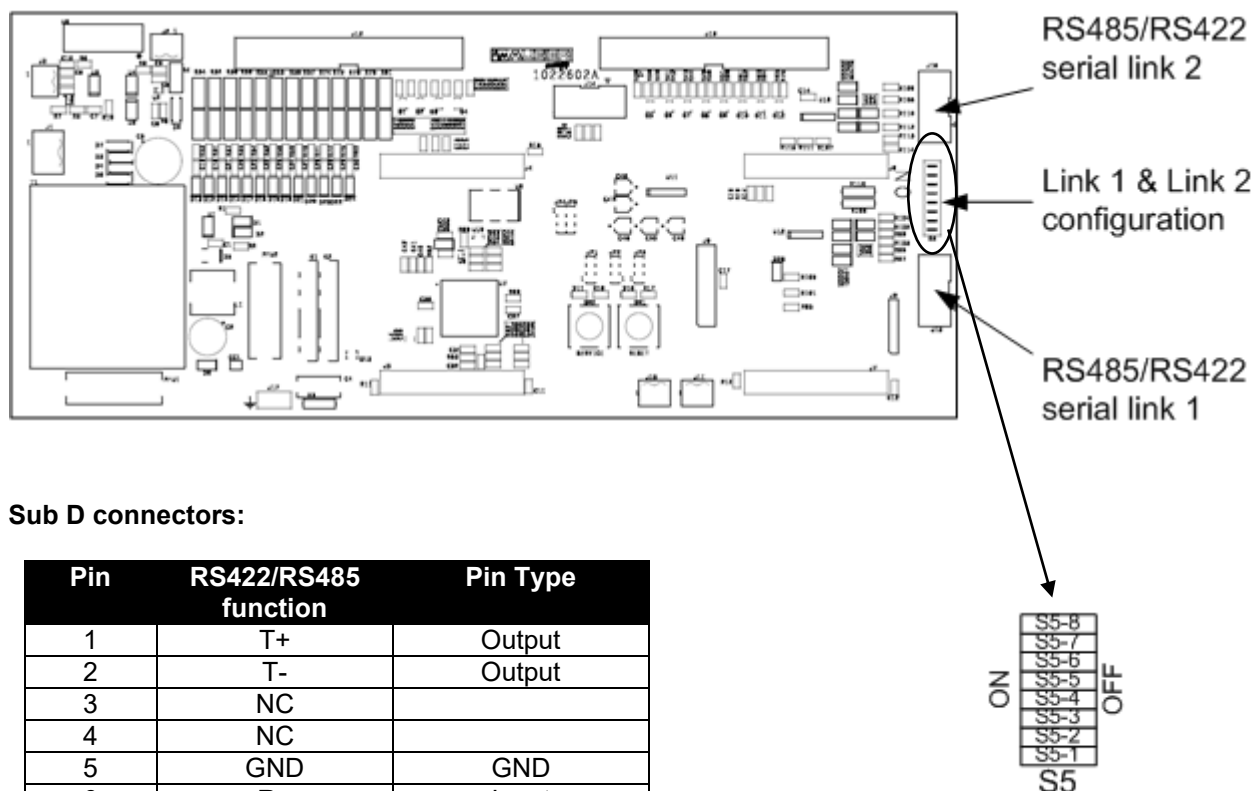
i BIN mode can be enabled using ALIZE4100, (setting bit 13 at address 70 in the Jbus table or directly in the frame "CCR Remote)



i BIN mode is available with interface board firmware from V26 and higher

II.3 RS422/RS485 SERIAL LINK:

Each serial link is equipped with two SubD 9-pin (1 female and 1 male sockets).
The links are electrically insulated from all the other circuits:



Sub D connectors:

Pin	RS422/RS485 function	Pin Type
1	T+	Output
2	T-	Output
3	NC	
4	NC	
5	GND	GND
6	R+	Input
7	R-	Input
8	NC	
9	NC	

RS422/RS485 network polarity and termination

Link number	Function	Dip switch
1	Termination impedance	S5-1
		S5-2
	Polarising resistors	S5-3
		S5-4
2	Termination impedance	S5-5
		S5-6
	Polarising resistors	S5-7
		S5-8

Polarising resistors.

Set the two switches to "ON" to activate the two polarising resistors on lines R- and R+. (value = 2200 ohms)

Generally, these switches are set to ON for the CCR on the end of the line. For all other CCRs linked on the same bus, leave them set to OFF.

Termination impedance.

- Set the two switches to "ON" to insert a 120 ohm resistance in the Jbus line.
- This impedance must *compulsorily* be inserted in the last CCR in the line, and *only* in this one.

N.B.: do not forget to connect similar impedance on the input line of the *master device* (robot or micro-computer), if this is placed at the end of the line and does not carry one.

Serial link parameters:

The asynchronous serial links are defined as follows:

Preferred parameters : 9600 baud, 8 data bits, 1 stop bits, no parity.
JBUS protocol with Id=1 at delivery.

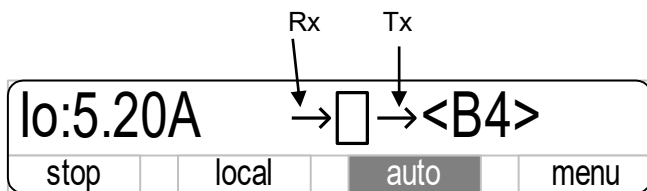
It is possible to change the speed and the ID in the “*Serial Link*” menu:

- Speed: **2400-4800-9600-19200** Baud
- ID: **1 to 249**

These changes are active after a device reset (mains disconnection).

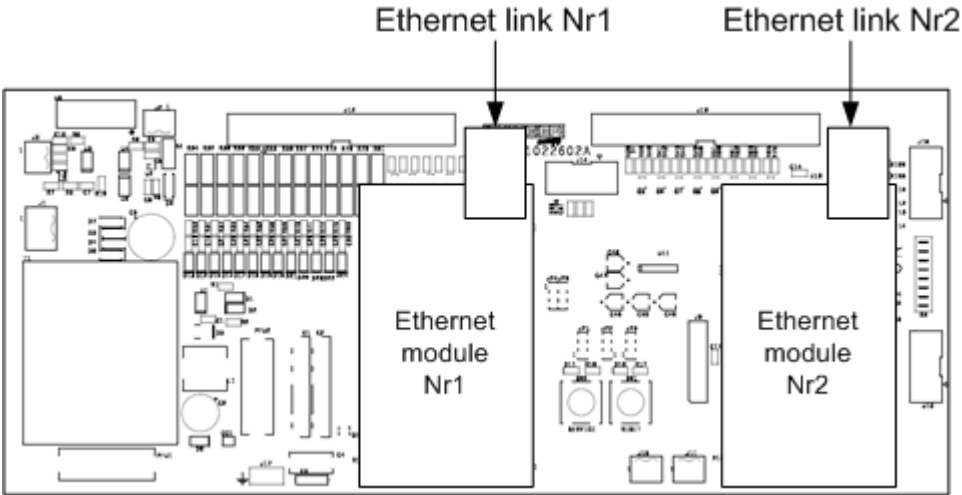
The 2 serial links access to the same jbus table with the same priority (the last order is the one taken).

Communication (for the link 1 or 2) is shown on the display, by mean of 2 arrows Rx & Tx :



i The JBUS table is defined in appendix b: jbus table

II.4 ETHERNET LINK:



DIAM4100 CCR can be equipped with one or two Ethernet interfaces. The used protocol is **MODBUS TCP** (port 502).
Supplied functions are : function 3 (number of words <= 100), function 6.and function 16 (number of words =1)
Slave ID = 1.

IP parameters:

Ethernet interface number	Default mask and address	Maximum number of sockets (clients)
1	Mask: 255.255.255.0 Address: 192.168.100.160	2
2	Mask: 255.255.255.0 Address: 192.168.100.161	2

The IP mask (4 bytes) and the IP adress (4 bytes) are configurable in the following menu:

Parametres TCP/IP

esc

←

→

OK

Communication is shown on the display, by mean of 2 arrows in & out :

Io:5.20A

→□→<B4>

stop

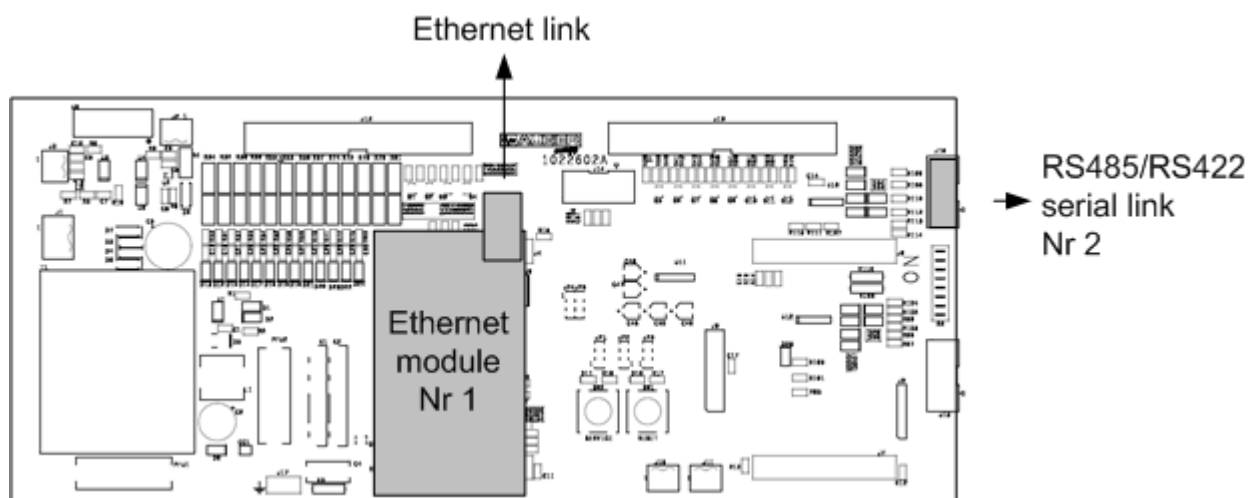
local

auto

menu

Connection of the network is made at the rear of the CCR (RJ45 8 pins)

II.5 ETHERNET LINK + SERIAL LINK RS422/RS485:



See above the characteristics of the Ethernet link and serial link.
The two ways have the same priority.

II.6 REMOTE FAIL SAFE MODE:

A « remote fail safe mode » can be set on the CCR. This mode is used to set a default brightness if the serial communication or the wire control fail.

- If the option « remote fail safe mode » is set, in case of loss of communication (timeout configurable in the jbus table) or cut out of the wire remote link, the CCR drive a default brightness (configurable in the jbus table).
- If this option is set; a permanent wire link must be applied on an wire input to avoid the CCR start in default brightness when the normal wire control is "off".

Remote control board	Interface board reference	Permanent wire control
IEC board (without relay)	30 08928	B1 - 10
FAA board (with relays)	30 09259	B1 - 12

Adress 69, bit 5	Remote fail safe
0	No
1	Yes

Value at address	Description	Default value	Value
140	Timeout	250 (5s)	0 to 65535 (*20ms)
141	Default brightness	3	0 to 7, (0 = stop, X = Brightness X)

In case of a double link (double serial link, double Ethernet link or Ethernet link + serial link, it is possible to monitor only the way Nr 1. In case of non second link communication, the CCR don't switch to a default brightness.

Adress 70, bit 7	Remote fail safe
0	In case of double link with remote fail safe set to yes. →Remote fail safe on the 2 ways
1	In case of double link with remote fail safe set to yes. →Remote fail safe only on the way Nr 1

II.6.1 REMOTE PRIORITY:

The CCR can be controlled by 3 inputs :

- Wires control
- COM 1 input (RS422 or RS485 or MODBUS TCP)
- COM 2 input (RS422 or RS485 or MODBUS TCP)

Standard priority:

- The wires remote control has the highest priority. The COM 1 or COM2 control is applied when there is no wire order ("stop" wire order).
- The two COM 1 and COM2 have the same priority, the last order from COM 1 or COM 2 is applied.

Reverse priority :

- The COM 1 or COM 2 control link has the highest priority. If the CCR don't answer request for a timeout period, the wire remote control the CCR. The timeout delay is setting at the address 226 in the jbus table.
- The two COM 1 and COM2 have the same priority, the last order from COM 1 or COM 2 is applied.

Remote priority setting :

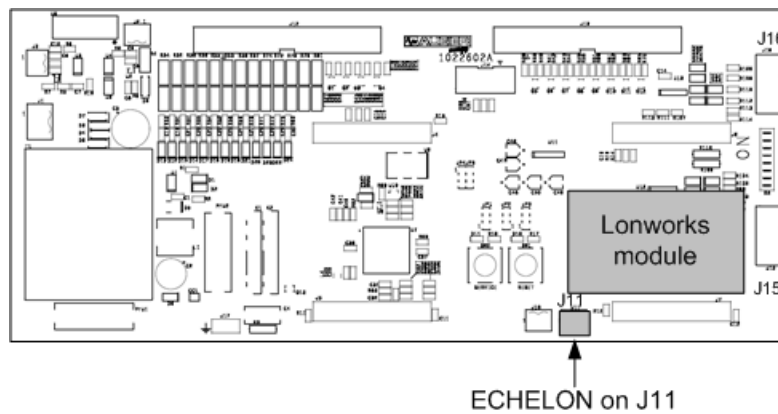
Adress 69, bit 3	Remote priority
0	Standard (wire control), default value
1	Reverse priority (COM1 ou COM2)

Timeout :

Value at adress	Description	Default value	Value
140	Timeout	250 (5s)	0 to 65535 (*20ms)

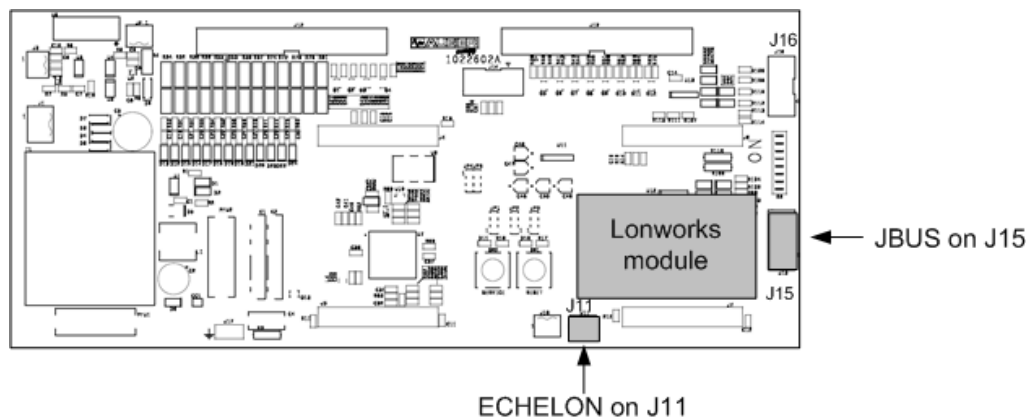
 The reverse priority can be choose for interface board firmware version from :V6

II.7 LONWORKS LINK:

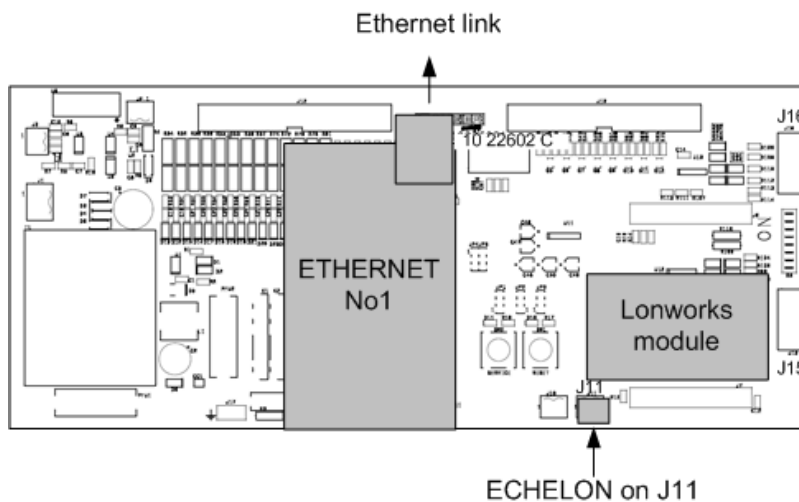


The lonworks interface use an FT10 module.

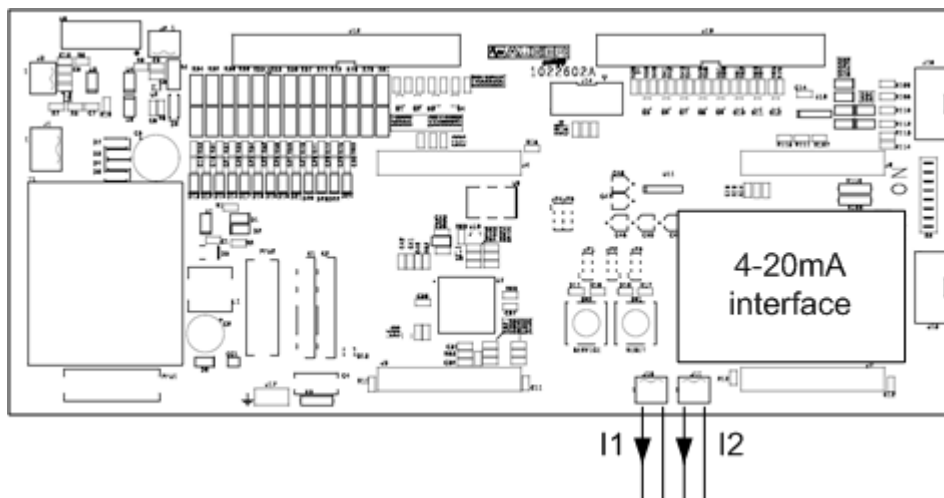
II.8 LONWORKS LINK + SERIAL LINK RS422/RS485



II.9 LONWORKS LINK + ETHERNET LINK



II.10 4-20mA OUTPUTS (OPTION)



II.10.14-20mA LOOP CURRENT :

The CCR can be delivered with two independent 4-20mA current loops with the following features :

- The two outputs are isolated (500V~).
- The load to be connected must be less than 200 Ohms.
- I1 is connected to J10 (pin 1 = +, pin2 = -), I2 is connected on J11 (pin 1 = +, pin2 = -)

4-20mA outputs configuration									
4-20mA output	Jbus address	B7	B6	B5	B4	B3	B2	B1	B0
I1 → loop current, I2 → loop power	69	X	X	X	0	X	X	X	X
I1 → loop insulation, I2 not used	69	X	X	X	1	X	X	X	X

II.10.24-20MA CURRENT LOOP FOR OUTPUT CURRENT AND POWER MEASUREMENTS :

- First output (J10):
 $I1 = 4 \text{ mA} + (I_o / 10A) * 16 \text{ mA}$.

Example: for $I_o = 6.6 \text{ Arms}$, $I1 = 4 \text{ mA} + (6.6/10) * 16 \text{ mA} = 14.56 \text{ mA}$

- Second output:
 $I2 = 4 \text{ mA} + (\text{Output Power}/\text{Nominal Power}) * 16 \text{ mA}$.

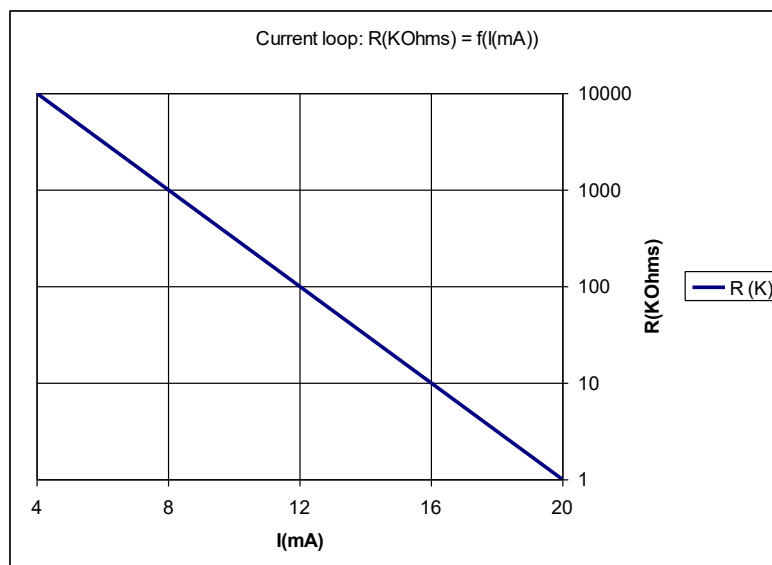
Example: For 15 KVA nominal power and 9.6 KVA in the loop (64% of the nominal power),

$I2 = 4 \text{ mA} + (9.6/15) * 16 \text{ mA} = 14.24 \text{ mA}$

II.10.34-20MA LOOP CURRENT (GROUND INSULATION):

- First output:
If $R(\Omega)_{\text{earth}} \geq 10M\Omega$, $I1 = 4mA$
If $R(\Omega)_{\text{earth}} \leq 1K\Omega$, $I1 = 20mA$

Between $1K\Omega$ and $10M\Omega$, the loop current follows the ground value, according the curve



- Second output: not used

III REMOTE CONTROL SPARE PARTS LIST

Designation	Reference
Remote control board	30 10028
Fuses PFU1, PFU2	PFU1: 10 22514 (250V 100mAT 5x20) , PFU2: 10 19783 (250V 500mAT 5x20)
IEC wire interface board	30 13547
FAA wire interface board	30 13312

IV APPENDIX A: DIAGRAMS

BP 131 - 06513 CARROS Cedex - France
Phone : 04 92 08 62 00 - Fax : 04 92 08 62 31

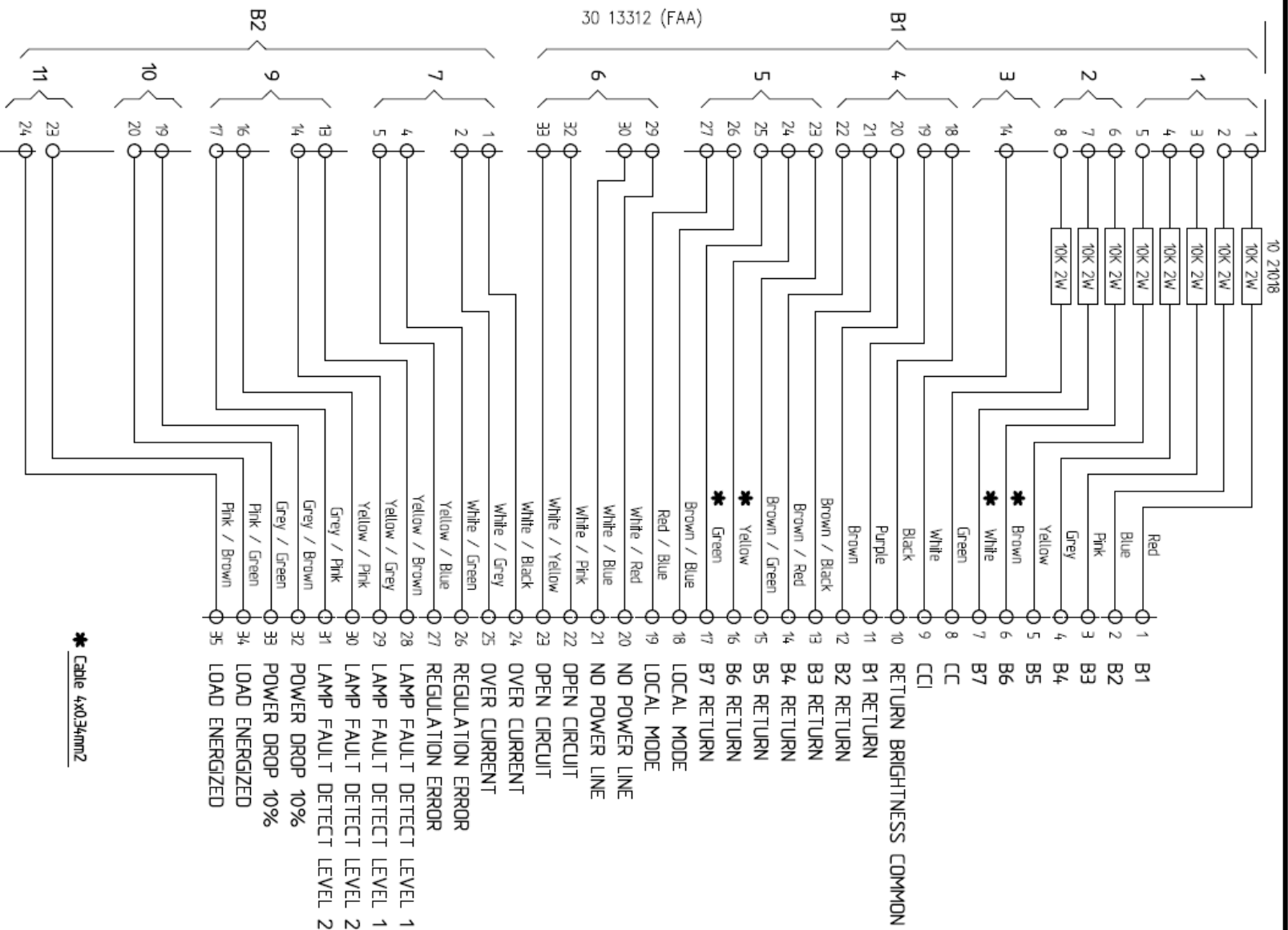
DIAGRAM OF CONNECTION

FAA REMOTE CONTROL TERMINAL BLOCK

DIAGRAM OF CONNECTION											
FAA REMOTE CONTROL TERMINAL BLOCK											
N°		N		4		45		05242		a	
Date	23/11/15	Design.	S.C.	Approved	Scale						
Modify				Des.	Apr.	Date	Rev.				
Carte 30 09259=30 18312, modif bornier				S.C.		18/09/18	a				

REMOTE CONTROL

30 13312 (FAA)



* Cable 4x0.34mm²

V APPENDIX B: JBUS TABLE

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
0	R		Ram	Warnings	Bit0	Stop	Start	0	Main switch status
					Bit1	OK	Pb power line	0	Power supply over range
					Bit2	OK	Pb EFD	0	Level 1 or Level 2 or EFD board defect
					Bit3	OK	Pb current	0	Open circuit or Over current or Regulation error
					Bit4	OK	Pb regul	0	Regulation error
					Bit5	OK	Pb open circuit	0	Open circuit
					Bit6	OK	Pb Overcurrent	0	Over current
					Bit7	Local or Stop	Remote control		Bit 7:8, 0:0 = Local , 0:1 = Stop, 1:0 = Remote
					Bit8	Local or Remote	Stop mode		
					Bit9	OK	EFD level 1 warning	0	Earth fault detect (OPTION)
					Bit10	OK	EFD level 2 warning	0	Earth fault detect (OPTION)
					Bit11	OK	LFD level 1 warning	0	Lamp fault detect (OPTION)
					Bit12	OK	LFD level 2 warning	0	Lamp fault detect (OPTION)
					Bit13	OK	Internal failure	0	CCR internal problem
1	R		Ram	Brightness back indication					0 : Stop 1 : Brightness B1 2 : Brightness B2 3 : Brightness B3 4 : Brightness B4 5 : Brightness B5 6 : Brightness B6 7 : Brightness B7 8 : Brightness B0 (Heat)
2	R		Ram	Io loop current					*10mA
3	R		Ram	U injection EFD				500	*V
4	R		Ram	Uo loop voltage					*V
5				RESERVED					
6	R		Ram	Mains voltage Ui					*V
7	R		Ram	Mains current Ii					*A (OPTION)
8	R		Ram	Output power Po					*VA
9	R		Ram	Ethernet board firmware					
10	R		Ram	EFD Resistance					*KOhms (1..65000)
11	R		Ram	Number of burnt lamps					
12	R		Ram	Open load ratio measurement					*%

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
13	R		Ram	Heat sink temperature					Only for DIAM4200
14	R			EFD board status	Bit0		Communication error		
					Bit1		Internal error		
15	R			Interface board status	Bit0		Communication error		
					Bit1		Internal error		
16	R		Eeprom	Status flags	Bit0	No EFD HV (500V--)	EFD HV (500V--)		EFD Option
					Bit1	No Uaux	Uaux present		Auxiliary voltage
					Bit2	Maintenance	Loop		CIMALT position
					Bit3	No power drop	10% or greater Power drop		Power drop
					Bit4	No time overlap	Time overlap		Time management (OPTION)
17	R		Eeprom	Mother board firmware version					1 to 255
18	R		Eeprom	Mother board firmware correction					0 to 255
19	R			EFD board firmware version					1 to 255
20	R			Interface board firmware version					1 to 255
21	R		Ram	Phase shift U I					0 to 500
22	R		Eeprom	Load plate					*1/8
23	R		Eeprom	Rated mains voltage				230	*V 208V, 220V, 230V, 240V, 380V, 400V ,415V ,480V
24	R		Eeprom	Rated power				5000	*VA, 1KVA, 2.5KVA, 4KVA, 5KVA, 7.5KVA, 10KVA, 15KVA, 20KVA, 25KVA, 30KVA
25	R		Eeprom	Serial link ID				1	1 to 249
26	R		Eeprom	Serial link speed				9600	In Baud 2400, 4800, 9600, 19200
27	R		Eeprom	USB link speed				3840	*10 Baud 960, 1920, 3840, 5760, 11520
28	R		Eeprom	USB link Id				1	1 to 15
29	R		Eeprom	B0 setting				150	*10mA
30	R/W		Eeprom	B1 setting				280	*10mA
31	R		Eeprom	B2 setting				340	*10mA
32	R		Eeprom	B3 setting				410	*10mA
33	R		Eeprom	B4 setting				520	*10mA
34	R		Eeprom	B5 setting				660	*10mA
35	R		Eeprom	B6 setting				660	*10mA
36	R		Eeprom	B7 setting				660	*10mA
37	R		Eeprom	Nb of Brightness				6	1 to 8

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
38	R		Eeprom	R Level EFD1				1000	*K Ω (10K Ω to 10M Ω)
39	R		Eeprom	R Level EFD2				100	*K Ω (10K Ω to 10M Ω)
40	R		Eeprom	Level 1 Overcurrent				680	*10mA (0 to 9Arms)
41	R		Eeprom	Level 2 Overcurrent				693	*10mA (0 to 9Arms)
42	R		Eeprom	Level 3 Overcurrent				825	*10mA (0 to 9Arms)
43	R		Eeprom	No of restarts				3	0 to 255
44	R		Eeprom	Open circuit level				100	*10mA (0 to 9Arms)
45	R		Eeprom	Open circuit time delay				60	*10ms (20ms to 2.5s)
46	R		Eeprom	Overcurrent level 1 time delay				250	*10ms (20ms to 2.5s)
47	R		Eeprom	Overcurrent level 2 time delay				100	*10ms (20ms to 2.5s)
48	R		Eeprom	Overcurrent level 3 time delay				20	*10ms (20ms to 2.5s)
49	R		Eeprom	Level B0 maxi				IB0+0.1A	*10mA (1 to 6.8Arms)
50	R		Eeprom	Level B0 mini				IB0-0.1A	*10mA (1 to 6.8Arms)
51	R		Eeprom	Level B1 maxi				IB1+0.1A	*10mA (1 to 6.8Arms)
52	R		Eeprom	Level B1 mini				IB1-0.1A	*10mA (1 to 6.8Arms)
53	R		Eeprom	Level B2 maxi				IB2+0.1A	*10mA (1 to 6.8Arms)
54	R		Eeprom	Level B2 mini				IB2-0.1A	*10mA (1 to 6.8Arms)
55	R		Eeprom	Level B3 maxi				IB3+0.1A	*10mA (1 to 6.8Arms)
56	R		Eeprom	Level B3 mini				IB3-0.1A	*10mA (1 to 6.8Arms)
57	R		Eeprom	Level B4 maxi				IB4+0.1A	*10mA (1 to 6.8Arms)
58	R		Eeprom	Level B4 mini				IB4-0.1A	*10mA (1 to 6.8Arms)
59	R		Eeprom	Level B5 maxi				IB5+0.1A	*10mA (1 to 6.8Arms)
60	R		Eeprom	Level B5 mini				IB5-0.1A	*10mA (1 to 6.8Arms)
61	R		Eeprom	Level B6 maxi				IB6+0.1A	*10mA (1 to 6.8Arms)
62	R		Eeprom	Level B6 mini				IB6-0.1A	*10mA (1 to 6.8Arms)
63	R		Eeprom	Level B7 maxi				IB7+0.1A	*10mA (1 to 6.8Arms)
64	R		Eeprom	Level B7 mini				IB7-0.1A	*10mA (1 to 6.8Arms)
65	R		Eeprom	Language				0	0 : French, 1 : English 2: Spanish
66	R		Eeprom	Wig-Wag cycle time				25	*100ms (1s to 25s)
67	R		Eeprom	Wig-Wag time				17	*100ms (1s to 25s)
68	R		Eeprom	Display brightness				8	1..8

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
69	R		Eeprom	Parameters					Reserved
70	R		Eeprom	Interface					Reserved
71	R		Eeprom	Calibrating current				660	*10mA (1 to 6.8Arms)
72	R		Eeprom	lo equalizer				1000	800 to 1200
73	R		Eeprom	Uo equalizer				1000	500 to 2000
74	R		Eeprom	Ui equalizer				1000	500 to 2000
75	R		Eeprom	li equalizer				1000	500 to 2000
76	R		Eeprom	Operating time clock					H2, H1 see note 1
77	R		Eeprom	Operating time clock					H0, M, see note 1
78	R		Eeprom	Powered-on time clock					H2, H1, see note 1
79	R		Eeprom	Powered-on time clock					H0, M, see note 1
80	R		Eeprom	Brightness B0 time clock					H2, H1, see note 1
81	R		Eeprom	Brightness B0 time clock					H0, M, see note 1
82	R		Eeprom	Brightness B1 time clock					H2, H1 see note 1
83	R		Eeprom	Brightness B1 time clock					H0, M see note 1
84	R		Eeprom	Brightness B2 time clock					H2, H1 see note 1
85	R		Eeprom	Brightness B2 time clock					H0, M see note 1

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
86	R		Eeprom	Brightness B3 time clock					H2, H1 see note 1
87	R		Eeprom	Brightness B3 time clock					H0, M see note 1
88	R		Eeprom	Brightness B4 time clock					H2, H1 see note 1
89	R		Eeprom	Brightness B4 time clock					H0, M see note 1
90	R		Eeprom	Brightness B5 time clock					H2, H1 see note 1
91	R		Eeprom	Brightness B5 time clock					H0, M see note 1
92	R		Eeprom	Brightness B6 time clock					H2, H1 see note 1
93	R		Eeprom	Brightness B6 time clock					H0, M see note 1
94	R		Eeprom	Brightness B7 time clock					H2, H1 see note 1
95	R		Eeprom	Brightness B7 time clock					H0, M see note 1
96	R		Eeprom	Operating time clock level				39	H2, H1 see note 1 (10000 Hours)
97	R		Eeprom	Operating time clock level				4096	H0, M see note 1 (10000 Hours)
98	R		Eeprom	Level 1 of no of burnt lamps				5	1 to 20
99	R		Eeprom	Level 2 of no of burnt lamps				10	1 to 20
100	R/W		Eeprom	BRIGHTNESS CCR CONTROL & ICS control. (if Integrated circuit selector, see NOTE 3).					LSB: 0 : Stop 1 : Brightness B1 2 : Brightness B2 3 : Brightness B3 4 : Brightness B4 5 : Brightness B5 6 : Brightness B6 7 : Brightness B7 8 : Brightness B0 (Heat) MSB: ICS control (see NOTE 3).
101	R		Ram	EFD injection control					EFD board control (OPTION)
102	R		Ram	CCR control in remote mode					
103	R		Ram	Circuit selector feedback					
105	R		Eeprom	Initialisation parameter					

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
106	R/W	Sup	Eeprom	Memory 0 lamps B0					0 to 1000
107	R/W	Sup	Eeprom	Memory 0 lamps B1					0 to 1000
108	R/W	Sup	Eeprom	Memory 0 lamps B2					0 to 1000
109	R/W	Sup	Eeprom	Memory 0 lamps B3					0 to 1000
110	R/W	Sup	Eeprom	Memory 0 lamps B4					0 to 1000
111	R/W	Sup	Eeprom	Memory 0 lamps B5					0 to 1000
112	R/W	Sup	Eeprom	Memory 0 lamps B6					0 to 1000
113	R/W	Sup	Eeprom	Memory 0 lamps B7					0 to 1000
114	R/W	Sup	Eeprom	Memory X lamps B0					0 to 1000
115	R/W	Sup	Eeprom	Memory X lamps B1					0 to 1000
116	R/W	Sup	Eeprom	Memory X lamps B2					0 to 1000
117	R/W	Sup	Eeprom	Memory X lamps B3					0 to 1000
118	R/W	Sup	Eeprom	Memory X lamps B4					0 to 1000
119	R/W	Sup	Eeprom	Memory X lamps B5					0 to 1000
120	R/W	Sup	Eeprom	Memory X lamps B6					0 to 1000
121	R/W	Sup	Eeprom	Memory X lamps B7					0 to 1000
122	R/W	Sup	Ram	Password					0 to 9999
123	R	Cal		Signal reading pointer					

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
125	R		Ram	Interface board relays status 1	Bit0	Off	On		OUT_K17
					Bit1	Off	On		OUT_K18
					Bit2	Off	On		OUT_K19
					Bit3	Off	On		OUT_K20
					Bit4	Off	On		OUT_K21
					Bit5	Off	On		OUT_K22
					Bit6	Off	On		OUT_K23
					Bit7	Off	On		OUT_K24
					Bit8	Off	On		
					Bit9	Off	On		
					Bit10	Off	On		
					Bit11	Off	On		
					Bit12	Off	On		
					Bit13	Off	On		
					Bit14	Off	On		
					Bit15	Off	On		
126	R		Ram	Interface board relays status 2	Bit0	Off	On		OUT_K1
					Bit1	Off	On		OUT_K2
					Bit2	Off	On		OUT_K3
					Bit3	Off	On		OUT_K4
					Bit4	Off	On		OUT_K5
					Bit5	Off	On		OUT_K6
					Bit6	Off	On		OUT_K7
					Bit7	Off	On		OUT_K8
					Bit8	Off	On		OUT_K9
					Bit9	Off	On		OUT_K10
					Bit10	Off	On		OUT_K11
					Bit11	Off	On		OUT_K12
					Bit12	Off	On		OUT_K13
					Bit13	Off	On		OUT_K14
					Bit14	Off	On		OUT_K15
					Bit15	Off	On		OUT_K16

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
127	R		Ram	Input auxiliary inputs	Bit0	Off	On		AUX1
					Bit1	Off	On		AUX2
					Bit2	Off	On		AUX3
					Bit3	Off	On		AUX4
128	R			Phase angle					0 to 100
129	R		Eeprom	IP Mask module 1 (bytes 0&1)				255.255	65535 (0 to 65535)
130	R		Eeprom	IP Mask module 1 (bytes 2&3)				255.0	65280 (0 to 65535)
131	R		Eeprom	IP Adress module 1 (bytes 0&1)				192.168	(49320) (0 to 65535)
132	R		Eeprom	IP Adress module 1 (bytes 2&3)				100.160	(25760) (0 to 65535)
133	R		Eeprom	IP Mask module 2 (bytes 0&1)				255.255	65535 (0 to 65535)
134	R		Eeprom	IP Mask module 2 (bytes 2&3)				255.0	65280 (0 to 65535)
135	R		Eeprom	IP Adress module 2 (bytes 0&1)				192.168	(49320) (0 to 65535)
136	R		Eeprom	IP Adress module 2 (bytes 2&3)				100.161	(25761) (0 to 65535)
137	R		Eeprom	Regulation gain (start)				100	1 to 200
138	R		Eeprom	Delai Regulation gain (run)				100	*20ms (0 to 65535)
139	R		Eeprom	Regulation gain (run)				130	1 to 200
140	R		Eeprom	Remote fail safe mode: Time out				250	x20ms, 5 to 65535 (100ms to 20min)
141	R		Eeprom	Remote fail safe mode: Default brightness				3	0:Stop 1: Brightness B1 2: Brightness B2 3: Brightness B3 4: Brightness B4 5: Brightness B5 6: Brightness B6 7: Brightness B7 8: Brightness B0
142	R		Eeprom	Fluo pannel option (time)				25	*20ms (0 to 65535)
143	R		Eeprom	Fluo pannel option (current)				500	*10mA (100 to 660)
144	R		Eeprom	Memory power B0					
145	R		Eeprom	Memory power B1					
146	R		Eeprom	Memory power B2					
147	R		Eeprom	Memory power B3					
148	R		Eeprom	Memory power B4					
149	R		Eeprom	Memory power B5					
150	R		Eeprom	Memory power B6					
151	R		Eeprom	Memory power B7					
152	R			Phase shift Capacitive current					0 to 100%
153.. 189									

Adr.	R/W	Mode	Memory	Label	Detail	Bit clear	Bit set	Default Value	Comments
190	R			Word 1 switch over					
191	R			Life word					Incremented each line cycle (20ms)
192	R			Word 2 switch over					
193									
194	R			Soft download					85 in decimal
195	R		Ram	Mother board number					
196	R		Eeprom	Main menu display number				0	0: Output current, Brightness 1: Output current, Output voltage 2: Output current, Output power 3: Selector position (if option present)
197	R		Eeprom	Circuit selector: Circuits qty				2	1 to 6 (OPTION)
198	R		Eeprom	Circuit selector: Circuit in local mode				0	0 to 6 in alternate mode, 0 to 63 in simultaneous mode (OPTION)
199	R/W		Eeprom	Circuit selector: Circuit in remote mode. (if Integrated circuit selector, see NOTE 3).				0	0 to 6 in alternate mode, 0 to 63 in simultaneous mode (OPTION)
200.. 230									
231	R		Eeprom	Parameters 2					
232	R		Eeprom	Parameters 3					
233.. 241									
242	R		Eeprom	Rampe consigne					*10mA/20ms
243	R		Eeprom	Kp					/1000
244	R		Eeprom	Ki					/1000
245.. 248									
249	R		Ram	Lonworks interface flags					
250	R		Eeprom	LFD: X lamps learning				1	1 to 10
251.. 255									
256	R		Eeprom	LFD: Nr of learning				1	1 to 10
257	R		Eeprom	Parameters 4					
258									
259	R		Ram	Input active power					W
260	R		Ram	Input power factor					/1000, see Note 2
261	R		Ram	Output active power					W
262	R		Ram	Output power factor					/1000, see Note 2
263	R		Ram	Efficiency					/1000
264	R		Ram	Power line frequency					Hz/100

Note1 : The 4 bytes are coded: H2-H1-H0-M (H2,H1,H0 to compute the hours and M for minutes)
 Example: Reading operating time:
 Contents of address @106: 0x0102 in Hexadecimal, and of address @108 : 0x0324 in hexadecimal
 The time is interpreted as: 0x010203 hours and 0x24 minutes (66051 Hours and 36 minutes)

Note 2: These values are signed values from -1000 to 1000, the reading power factor must be divided per 1000, negative value is significant of capacitive power factor, positive value is significant of inductive power factor.

R: Read
 R/W: Read and Write

Note 3: If CCR with Integrated Circuit Selector (ICS), the ICS can be controlled using address 199 or 100. **If value at address 199 is equal to 0**, the ICS is controlled by the MSB at address 100.

In case of alternate circuit selector:

Circuit Nr						Value	
6	5	4	3	2	1	LSB (@199)	MSB(@100)
OFF	OFF	OFF	OFF	OFF	OFF	0	0
OFF	OFF	OFF	OFF	OFF	ON	1	256
OFF	OFF	OFF	OFF	ON	OFF	2	512
OFF	OFF	OFF	ON	OFF	OFF	3	768
OFF	OFF	ON	OFF	OFF	OFF	4	1024
OFF	ON	OFF	OFF	OFF	OFF	5	1280
ON	OFF	OFF	OFF	OFF	OFF	6	1536

In case of simultaneous circuit selector:

Circuit Nr						Value	
6	5	4	3	2	1	LSB (@199)	MSB(@100)
OFF	OFF	OFF	OFF	OFF	OFF	0	0
OFF	OFF	OFF	OFF	OFF	ON	1	256
OFF	OFF	OFF	OFF	ON	OFF	2	512
OFF	OFF	OFF	OFF	ON	ON	3	768
OFF	OFF	OFF	ON	OFF	OFF	4	1024
...	...	...	...	...	...	...	...
OFF	OFF	ON	ON	ON	OFF	14	3584
OFF	OFF	ON	ON	ON	ON	15	3840
...	...	...	...	...	...	...	...
ON	ON	ON	ON	OFF	ON	61	15616
ON	ON	ON	ON	ON	OFF	62	15872
ON	ON	ON	ON	ON	ON	63	16128

Example: Using simultaneous circuit selector, write 3 at address 199 select circuit 1 and 2. **Or if value at address 199 is equal to 0:**
 Writing 768 (3 x 256) at address 100 select circuit 1 and 2 with CCR in standby.
 Writing 769 (3 x 256 + 1) at address 100 select circuit 1 and 2 with CCR at brightness level 1 (B1).
 Writing 1027 (4 x 256 + 3) at address 100 select circuit 3 with CCR at brightness level 3 (B3).



Energy Technology srl
Operating office :
Via della Solidarieta 2/1
40056 Valsamoggia – Loc. Crespellano (BO) – Italy
Ph : + 39 051 6656 611 Fax : +39 051 6656 677
ocem@ocem.com – www.ocem.com
VAT Nr: IT 031 4821 1208
OCCEM a division of Energy Technology srl