DIRIS A40/A41
ETHERNET®

Operating instructions

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Contents

PRELIMINARY OPERATIONS

For personnel and product safety please read the contents of these operating instructions carefully before connecting.
Check the following points as soon as you receive the *DIRIS A40/A41* package:
• the packing is in good condition,

• the product has not been damaged during transit,
• the product reference number conforms to your order,
• the package contains the product and the operating instructions.

GENERAL INFORMATION

Functions

The optional Ethernet module is linked to the *DIRIS A40/A41* (ref. 48250201, 48250202, 48251201, 48251202) and enables connections to be made to a 10BaseT or 100BaseT type network. It also enables the *DIRIS* measurement units to be used and monitored from a PC or an API.

The module is available in 2 versions:
• **ETHERNET MODULE – Ref. 48250203:**
> Link to an RJ45 connection.
> MODBUS TCP or MODBUS RTU Protocol with TCP.
> WEB-server for product configuration, displaying the values and diagnostics.

• **ETHERNET MODULE WITH MODBUS RTU GATEWAY – Ref. 48250204:**
> MODBUS master gateway with RS485 3-point link with TCP.
> MODBUS TCP and MODBUS RTU protocols.
> WEB-server for product configuration, displaying the values and the diagnostics.
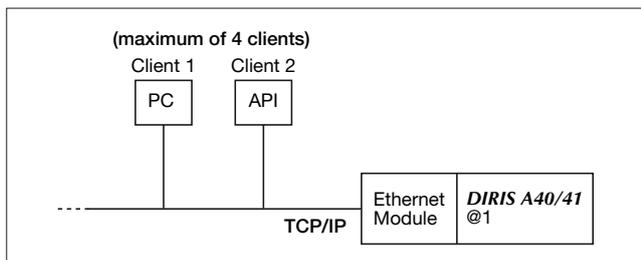
The gateway in this version enables the module to be used as a master gateway for a Jbus/Modbus network on RS485 with a maximum of 246 slaves. To do this, a Jbus/Modbus address other than 255 needs to be configured.

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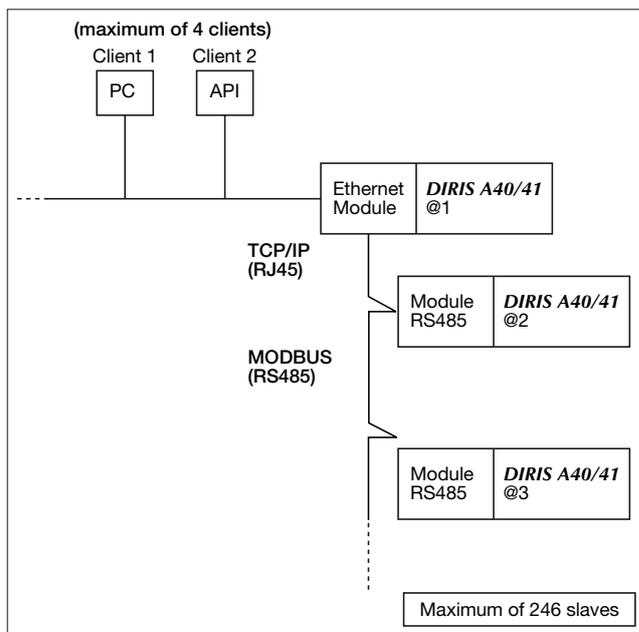
INSTALLATION

CONNECTION

The module is fitted onto the back of the *DIRIS A40/A41* in one of the 4 positions provided.

⚠ The *DIRIS A40/A41* must be switched off

①
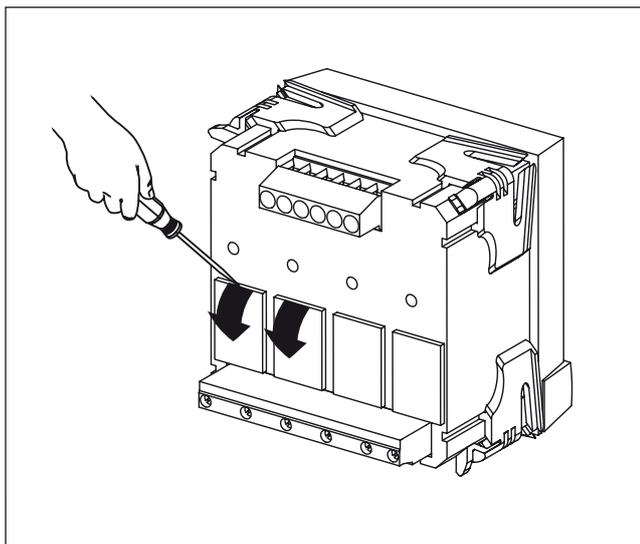
② Fix the module in one of the four positions.

③
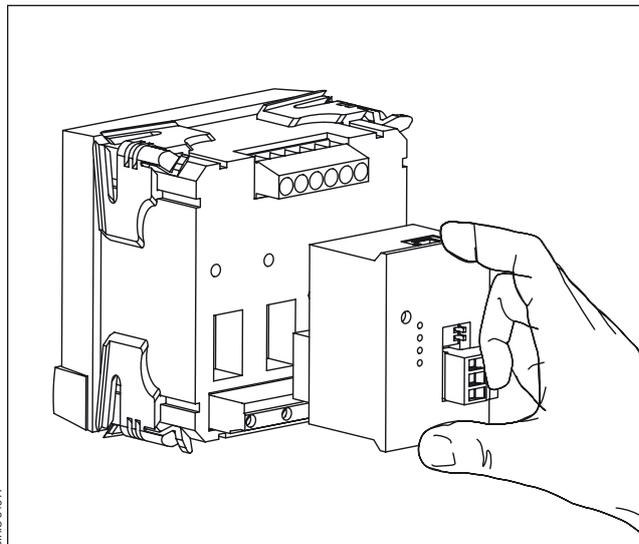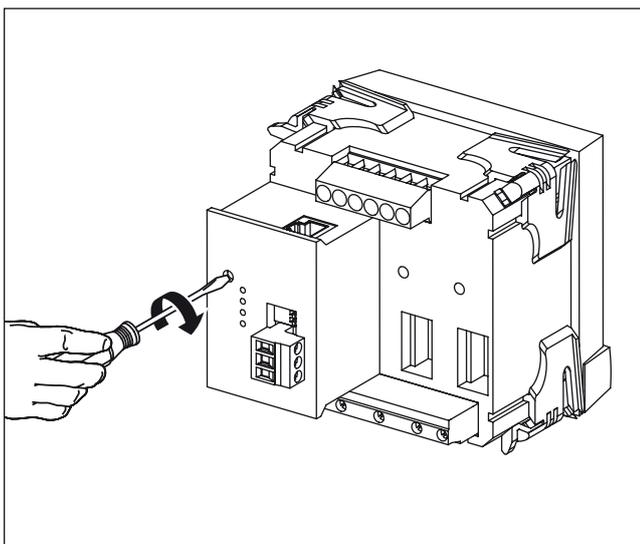
④ Follow indications when connecting the terminal.
Switch on voltage supply.

RJ 45

LED SYS
LED COM
LED Activity
LED Link

0/120Ω

RS 485
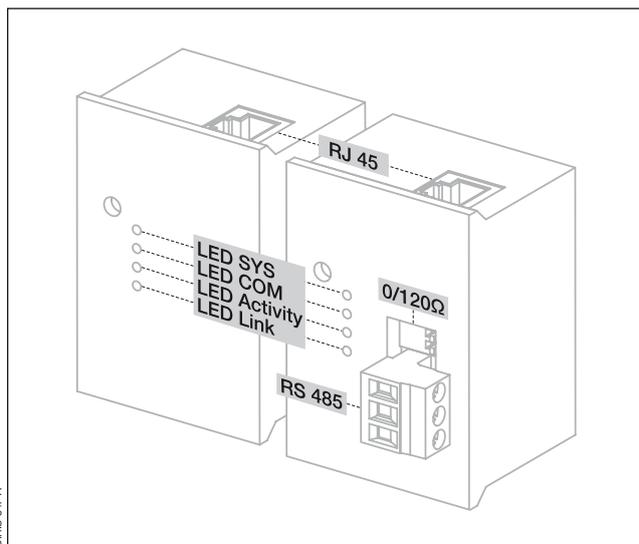
INSTALLATION

VISUAL DIAGNOSTIC

> **LED indicators**

LED	Colour	Status	Description
SYS	-	NOT LIT	No internal electrical supply Firmware is re-initialising Hardware is faulty
	Yellow	LIT	Loading phase of the software, waiting to start
		FLASHING AT 1Hz	Error during the start-up phase
	Green	LIT	Operating system functioning
COM	Red	NOT LIT	No errors
		FLASHING	Not used
		LIT	Internal JBUS error
	Green	NOT LIT	See red LED
		FLASHING	JBUS external error
		LIT	No error, fully functional
Link	Green	NOT LIT	No connection to the Ethernet network
		LIT	Ethernet Network connected
Activity	Yellow	FLASHING	Sending/receiving Ethernet frames

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ETHERNET CONFIGURATION ON DIRIS A40/A41

This involves setting up the IP parameters for the *DIRIS* connected to the gateway

IP address (Rth Adr IP) :
[CLASS A].[CLASS B].[CLASS C].[CLASS D]
Subnet mask (Eth MASH) :
[CLASS A].[CLASS B].[CLASS C].[CLASS D]
Gateway (Eth GATE) :
[CLASS A].[CLASS B].[CLASS C].[CLASS D]
DHCP activation (Eth DHCP) : Yes/ No

The factory setting is:

• **IP address:** 192.168.1.1
• **Subnet mask:** 255.255.255.0
• **Gateway:** 0.0.0.0
• **DHCP activation:** NO

ADRESSE IP :

**> For example: Programming the address 191.158.1.7
    CLASS A = 191**

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ADRESSE IP :

> For example: Programming the address 191.158.1.7
   CLASS D = 158
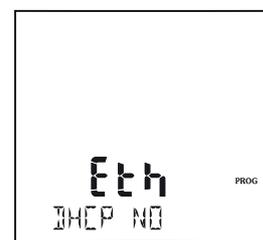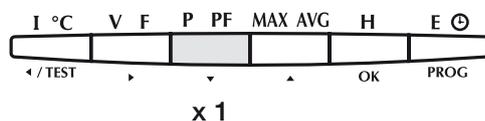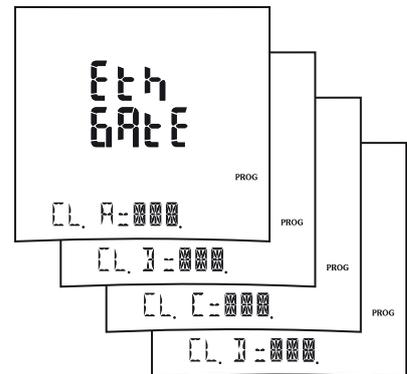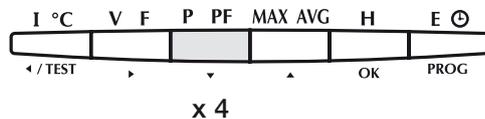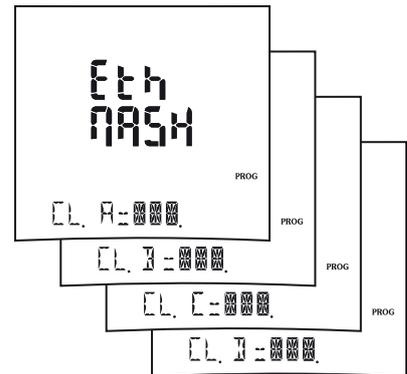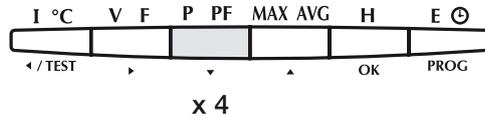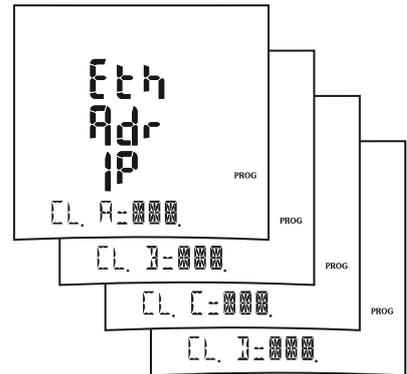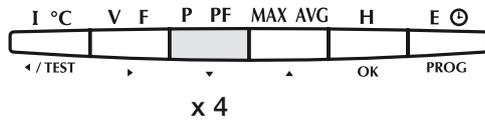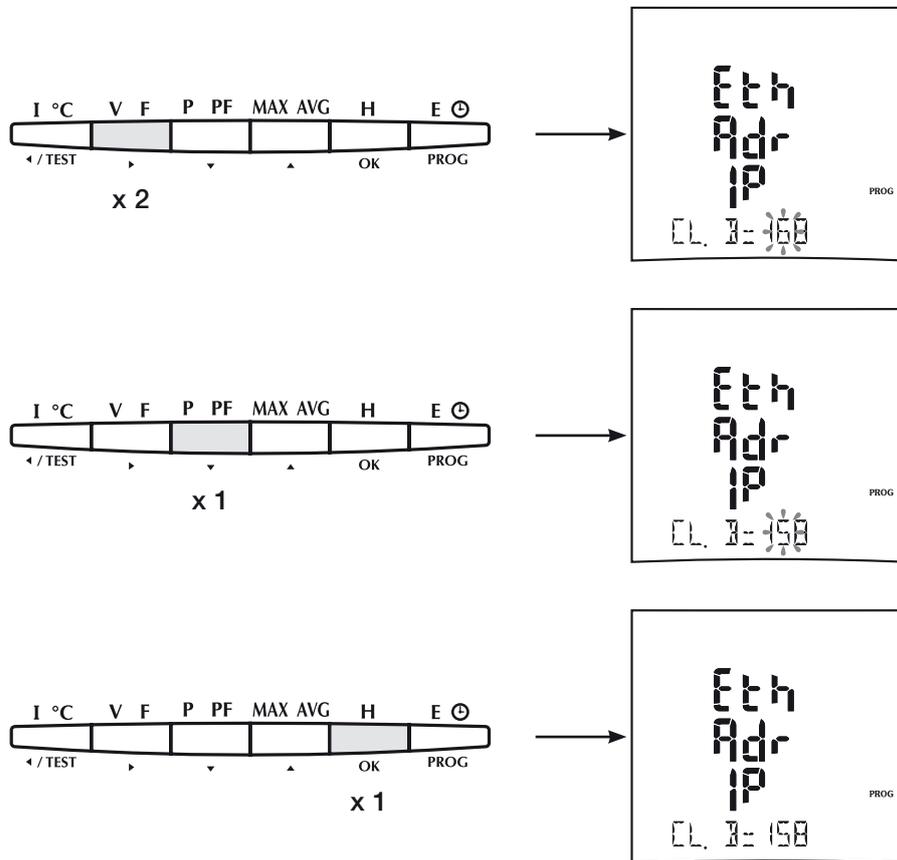
PROGRAMMING

ADRESSE IP :

> **For example: Programming the address 191.158.1.7**
   CLASS C = 1

x 3

```
Eth
Adr
IP          PROG
CL. C=001
```

> **For example: Programming the address 191.158.1.7**
   CLASS C = 7

x 3

```
Eth
Adr
IP          PROG
CL. J=001
```

x 6

```
Eth
Adr
IP          PROG
CL. J=007
```

x 1

```
Eth
Adr
IP          PROG
CL. J=007
```

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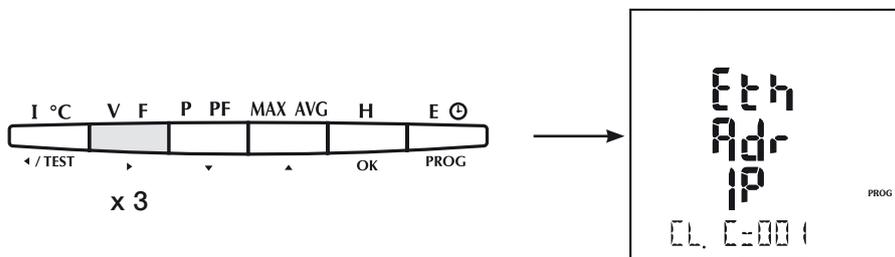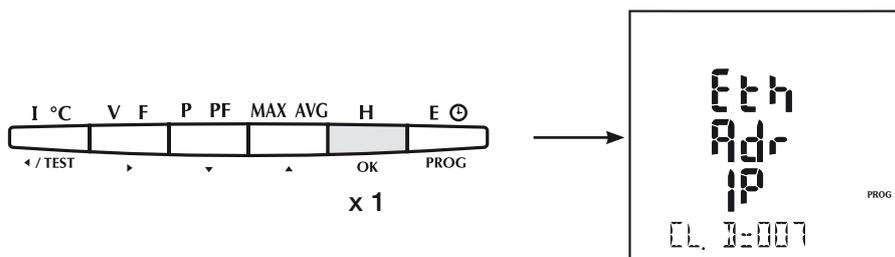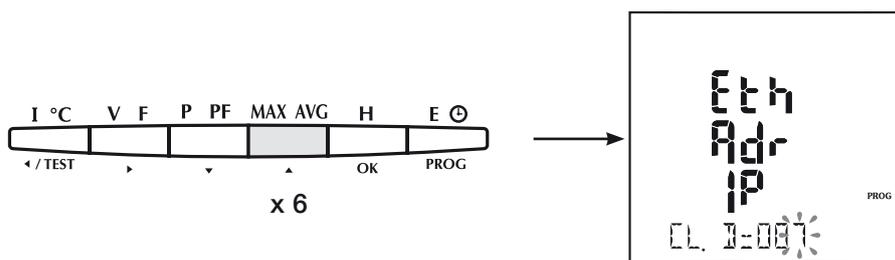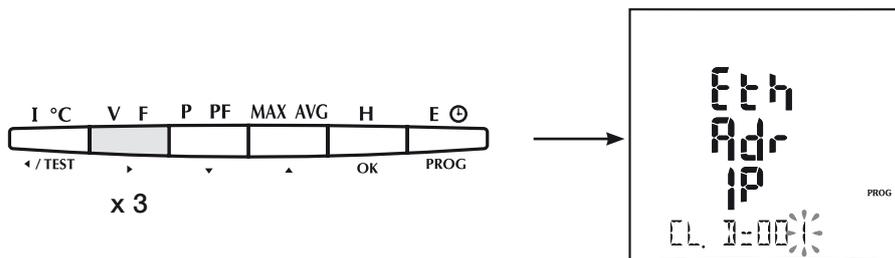
MASQUE:

> **For example: 255.255.255.0**
  The principle is the same as for the IP address

```
I  °C    V  F    P  PF   MAX AVG    H      E ⏰
◄ / TEST     ►       ▼       ▲      OK    PROG
              x 4
```

⟶

Eth
MASH
                    PROG

CL. A=255.
          CL. B=255.   PROG
                  CL. C=255.   PROG
                         CL. D=000.   PROG
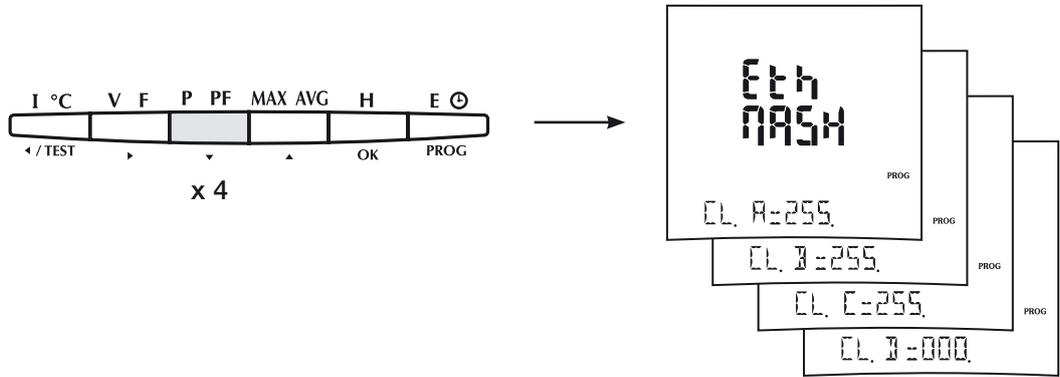
GATEWAY:

> **For example: 0.0.0.0**
  The principle is the same as for the IP address

```
I  °C    V  F    P  PF   MAX AVG    H      E ⏰
◄ / TEST     ►       ▼       ▲      OK    PROG
              x 4
```

⟶

Eth
GAtE
                    PROG

CL. A=000.
          CL. B=000.   PROG
                  CL. C=000.   PROG
                         CL. D=000.   PROG
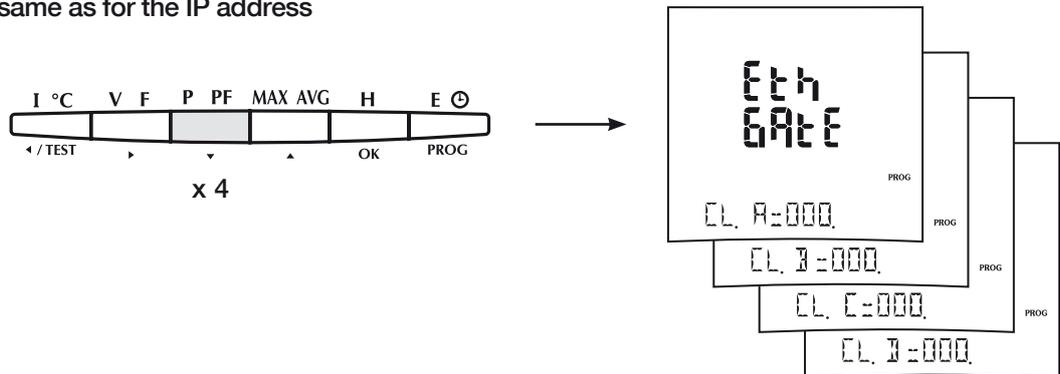
PROGRAMMING

DHCP :

> *WARNING: The DHCP function is not recommended.*
> *Contact your IT networks administrator.*

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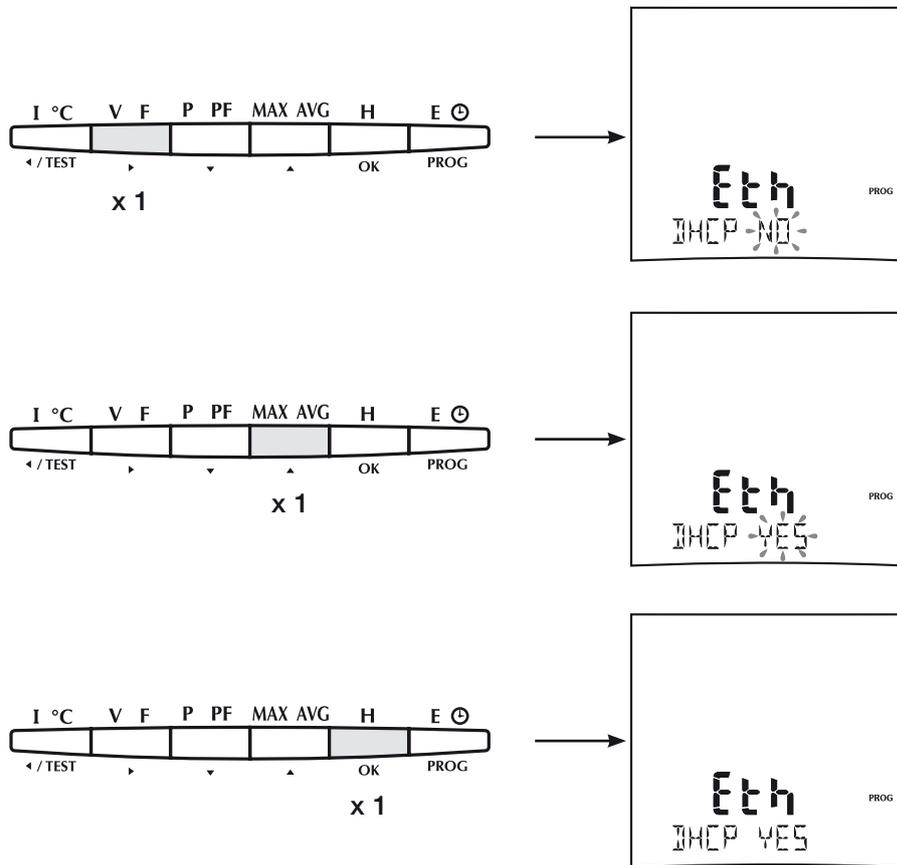
WEBSERVER

> The Webserver can be accessed by entering the product's IP address into your internet browser.

For example:

IP address of the *DIRIS* : 192.168.1.0

URL address: http://192.168.1.0/index.htm

The Web server makes the following available:

- The main *DIRIS* database parameters.
- The main instant and average meter readings.

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PROGRAMMING

ENVIRONMENTAL CONDITIONS AND TYPE OF TEST

> **Electromagnetic compatibility:**

Description	Standard	Level
Electrostatic discharge	IEC 61000-4-2	4 kV contact 8 kV air
Modulated A electromagnetic radiation	IEC 61000-4-3	10 V/m (80 MHz – 1 GHz) 3 V/m (1,4 GHz – 2 GHz) 1 V/m (2,0 GHz – 2,7 GHz)
Magnetic fields frequency factor	IEC 61000-4-8	50 Hz / 60 Hz 30 A/m
Rapid transients in bursts	IEC 61000-4-4	1 kV
Impulse waves (lightning)	IEC 61000-4-5	1 kV
Injection of HF current	IEC 61000-4-6	150 KHz – 80 MHz 80% AM, 1 KHz sinusoidal wave 1,5 x 10E-3 decade/s 3 V

> **Environmental:**

Operational temperature	-25 to +70°C
Storage temperature	-40 to +70°C

INTERFACE SPECIFICATIONS: SUPPLY

Supply voltage (from the *DIRIS*)	+ 9 VDC
Consumption	Between 1.3 and 1.7 W

RS485

Electrical specification	RS485 EIA 3-wire half duplex
Transmission speed	38,4 kBit/s
Stop bit	2
Parity	without
Maximum number of slaves	246

ETHERNET

Electrical specification	RJ45 Norme IEE 3-wire
Transmission speed	10MBits/s or 100MBits/s
Protocol	Modbus/TCP or Jbus/Modbus RTU with TCP

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A : NEW COMMUNICATION TABLE FROM 01/2009

These new tables are available for all new Socomec products on sale from January 2009. The aim is to have common tables for common values, irrespective of the Socomec product. We recommend that you use these new tables whenever possible for developing your applications.

1 > TABLE C550 Hex : Main measurements allocated from CT (current transformer) and VT (voltage transformer) values

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
50512	C550	2	hour meter	1/100 h	3
50514	C552	2	phase to phase voltage U12	V/100	3
50516	C554	2	phase to phase voltage U23	V/100	3
50518	C556	2	phase to phase voltage U31	V/100	3
50520	C558	2	phase to neutral voltage phase 1	V/100	3
50522	C55A	2	phase to neutral voltage phase 2	V/100	3
50524	C55C	2	phase to neutral voltage phase 3	V/100	3
50526	C55E	2	frequency	Hz/100	3
50528	C560	2	phase current 1	mA	3
50530	C562	2	phase current 2	mA	3
50532	C564	2	phase current 3	mA	3
50534	C566	2	neutral current	mA	3
50536	C568	2	Σ active power +/-	kW/100	3
50538	C56A	2	Σ reactive power +/-	kvar/100	3
50540	C56C	2	Σ apparent power	kVA/100	3
50542	C56E	2	Σ power factor -: leading and + : lagging	0,001	3
50544	C570	2	active power phase 1 +/-	kW/100	3
50546	C572	2	active power phase 2 +/-	kW/100	3
50548	C574	2	active power phase 3 +/-	kW/100	3
50550	C576	2	reactive power phase 1 +/-	kvar/100	3
50552	C578	2	reactive power phase 2 +/-	kvar/100	3
50554	C57A	2	reactive power phase 3 +/-	kvar/100	3
50556	C57C	2	apparent power phase 1	kVA/100	3
50558	C57E	2	apparent power phase 2	kVA/100	3
50560	C580	2	apparent power phase 3	kVA/100	3
50562	C582	2	power factor phase 1 -: leading and + : lagging	0,001	3
50564	C584	2	power factor phase 2 -: leading and + : lagging	0,001	3
50566	C586	2	power factor phase 3 -: leading and + : lagging	0,001	3
50568	C588	2	Reserved for manufacturer	-	3
50570	C58A	2	Reserved for manufacturer	-	3
50572	C58C	2	Reserved for manufacturer	-	3

COMMUNICATION

A : NEW COMMUNICATION TABLE FROM 01/2009

2 > TABLE C650 Hex : Energy monitoring

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
50768	C650	2	hour meter	1/100 h	3
50770	C652	2	Reserved for manufacturer	-	3
50772	C654	2	Reserved for manufacturer	-	3
50774	C656	2	Reserved for manufacturer	-	3
50776	C658	2	Reserved for manufacturer	-	3
50778	C65A	2	Reserved for manufacturer	-	3
50770	C652	2	active energy +	kWh	3
50772	C654	2	reactive energy +	kvarh	3
50774	C656	2	apparent apparente	kVAh	3
50776	C658	2	active energy -	kWh	3
50778	C65A	2	active energy +	kWh	3
50780	C65C	2	No. Compteurs d'Impulsions	-	3
50782	C65E	2	pulse meter 1	-	3
50784	C660	2	pulse meter 2	-	3
50786	C662	2	pulse meter 3	-	3
50788	C664	2	pulse meter 4	-	3
50790	C666	2	pulse meter 5	-	3
50792	C668	2	pulse meter 6	-	3
50794	C66A	2	Reserved for manufacturer	-	3
50796	C66C	2	Reserved for manufacturer	-	3
50798	C66E	2	Reserved for manufacturer	-	3
50800	C670	2	Reserved for manufacturer	-	3
50802	C672	2	S Predicted active power	kW/100	3
50804	C674	2	S Predicted reactive power	kvar/100	3
50806	C676	2	S Predicted apparent power	kVA/100	3
50808	C678	2	Ea+ between 2 tops	0,1 Ws	3
50810	C67A	2	Ea- between 2 tops	0,1 Ws	3
50812	C67C	2	Er+ between 2 tops	0,1 vars	3
50814	C67E	2	Er- between 2 tops	0,1 vars	3
50816	C680	2	Reserved for manufacturer	-	3
50816	C680	1	Reserved for manufacturer	-	3
50817	C681	1	Reserved for manufacturer	-	3

3 > TABLE C750 Hex : Additional measurements allocated from CT values (current transformer) and VT (voltage transformer) values

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51024	C750	2	avg U12	V/100	3
51026	C752	2	avg U23	V/100	3
51028	C754	2	avg U31	V/100	3
51030	C756	2	avg V1	V/100	3
51032	C758	2	avg V2	V/100	3
51034	C75A	2	avg V3	V/100	3
51036	C75C	2	avg F	Hz/100	3
51038	C75E	2	avg I1	mA	3
51040	C760	2	avg I2	mA	3
51042	C762	2	avg I3	mA	3
51044	C764	2	avg In	mA	3
51046	C766	2	avg Σ active power +	kW/100	3
51048	C768	2	avg Σ active power -	kW/100	3
51050	C76A	2	avg Σ reactive power +	kvar/100	3
51052	C76C	2	avg Σ reactive power -	kvar/100	3
51054	C76E	2	avg Σ apparent power	kVA/100	3
51056	C770	2	max/avg U12	V/100	3

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A : NEW COMMUNICATION TABLE FROM 01/2009

3 > TABLE C750 Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51058	C772	2	max/avg U23	V/100	3
51060	C774	2	max/avg U31	V/100	3
51062	C776	2	max/avg V1	V/100	3
51064	C778	2	max/avg V2	V/100	3
51066	C77A	2	max/avg V3	V/100	3
51068	C77C	2	max/avg F	Hz/100	3
51070	C77E	2	max/avg I1	mA	3
51072	C780	2	max/avg I2	mA	3
51074	C782	2	max/avg I3	mA	3
51076	C784	2	max/avg In	mA	3
51078	C786	2	max/avg Σ active power +	kW/100	3
51080	C788	2	max/avg Σ active power -	kW/100	3
51082	C78A	2	max/avg Σ reactive power +	kvar/100	3
51084	C78C	2	max/avg Σ reactive power -	kvar/100	3
51086	C78E	2	max/avg Σ apparent power	kVA/100	3
51088	C790	1	Reserved for manufacturer	-	3
51089	C791	1	Reserved for manufacturer	-	3
51090	C792	1	Reserved for manufacturer	-	3
51091	C793	1	Reserved for manufacturer	-	3
51092	C794	1	Reserved for manufacturer	-	3
51093	C795	1	Reserved for manufacturer	-	3

4 > TABLE C850 Hex : Main measurements not allocated from CT values (current transformer) and VT (voltage transformer) values

CAUTION : using this table involves multiplying values by transformation ratios.

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51280	C850	1	hour meter	h	3
51281	C851	1	phase to phase voltage U12	V/100	3
51282	C852	1	phase to phase voltage U23	V/100	3
51283	C853	1	phase to phase voltage U31	V/100	3
51284	C854	1	phase to neutral voltage 1	V/100	3
51285	C855	1	phase to neutral voltage 2	V/100	3
51286	C856	1	phase to neutral voltage 3	V/100	3
51287	C857	1	frequency	Hz/100	3
51288	C858	1	phase current 1	mA	3
51289	C859	1	phase current 3	mA	3
51291	C85B	1	neutral current	mA	3
51292	C85C	1	Σ active power +/-	kW/100	3
51293	C85D	1	Σ reactive power +/-	kvar/100	3
51294	C85E	1	Σ apparent power +/-	kVA/100	3
51295	C85F	1	Σ power factor L/C -: leading and + : lagging	0,001	3
51296	C860	1	phase active power 1 +/-	kW/100	3
51297	C861	1	phase active power 2 +/-	kW/100	3
51298	C862	1	phase active power 3 +/-	kW/100	3
51299	C863	1	phase reactive power 1 +/-	kvar/100	3
51300	C864	1	phase reactive power 2 +/-	kvar/100	3
51301	C865	1	phase reactive power 3 +/-	kvar/100	3
51302	C866	1	phase apparent power 1	kVA/100	3
51303	C867	1	phase apparent power 2	kVA/100	3
51304	C868	1	phase apparent power 3	kVA/100	3

A : NEW COMMUNICATION TABLE FROM 01/2009

4 > TABLE C850 Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51305	C869	1	phase power factor 1 -: leading and + : lagging	0,001	3
51306	C86A	1	phase power factor 2 -: leading and + : lagging	0,001	3
51307	C86B	1	phase power factor 3 -: leading and + : lagging	0,001	3
51308	C86C	1	Reserved for manufacturer	-	3
51309	C86D	1	Reserved for manufacturer	-	3
51310	C86E	1	Reserved for manufacturer	-	3
51311	C86F	1	Ea+	MWh	3
51312	C870	1	Reserved for manufacturer	-	3
51313	C871	1	ER+	MWh	3

5 > TABLE C900Hex : Temperature measurements

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51456	C900	1	Internal temperature sensor present 0 : no - 1 : yes	-	3
51457	C901	1	Temperature module	°C	3
51458	C902	1	External temperature sensors (1 to 5max)	-	3
51459	C903	1	extern temperature 1	°C	3
51460	C904	1	extern temperature 2	°C	3
51461	C905	1	extern temperature 3	°C	3
51462	C906	1	Reserved for manufacturer	-	3
51463	C907	1	Reserved for manufacturer	-	3

6 > TABLE C950Hex : Harmonics

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
			THD		
51536	C950	1	thd U12	0,001	3
51537	C951	1	thd U23	0,001	3
51538	C952	1	thd U31	0,001	3
51539	C953	1	thd V1	0,001	3
51540	C954	1	thd V2	0,001	3
51541	C955	1	thd V3	0,001	3
51542	C956	1	thd I1	0,001	3
51543	C957	1	thd I2	0,001	3
51544	C958	1	thd I3	0,001	3
51545	C959	1	thd In	0,001	3
			Current		
51546	C95A	1	Max rank		3
51547	C95B	1	Harmonic I1 row 3	0,001	3
51548	C95C	1	Harmonic I2 row 3	0,001	3
51549	C95D	1	Harmonic I3 row 3	0,001	3
51550	C95E	1	Harmonic IN row 3	0,001	3
51551	C95F	1	Harmonic I1 row 5	0,001	3
51552	C960	1	Harmonic I2 row 5	0,001	3
51553	C961	1	Harmonic I3 row 5	0,001	3
51554	C962	1	Harmonic IN row 5	0,001	3
51555	C963	1	Harmonic I1 row 7	0,001	3

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A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51556	C964	1	Harmonic I2 row 7	0,001	3
51557	C965	1	Harmonic I3 row 7	0,001	3
51558	C966	1	Harmonic IN row 7	0,001	3
51559	C967	1	Harmonic I1 row 9	0,001	3
51560	C968	1	Harmonic I2 row 9	0,001	3
51561	C969	1	Harmonic I3 row 9	0,001	3
51562	C96A	1	Harmonic IN row 9	0,001	3
51563	C96B	1	Harmonic I1 row 11	0,001	3
51564	C96C	1	Harmonic I2 row 11	0,001	3
51565	C96D	1	Harmonic I3 row 11	0,001	3
51566	C96E	1	Harmonic IN row 11	0,001	3
51567	C96F	1	Harmonic I1 row 13	0,001	3
51568	C970	1	Harmonic I2 row 13	0,001	3
51569	C971	1	Harmonic I3 row 13	0,001	3
51570	C972	1	Harmonic IN row 13	0,001	3
51571	C973	1	Harmonic I1 row 15	0,001	3
51572	C974	1	Harmonic I2 row 15	0,001	3
51573	C975	1	Harmonic I3 row 15	0,001	3
51574	C976	1	Harmonic IN row 15	0,001	3
51575	C977	1	Harmonic I1 row 17	0,001	3
51576	C978	1	Harmonic I2 row 17	0,001	3
51577	C979	1	Harmonic I3 row 17	0,001	3
51578	C97A	1	Harmonic IN row 17	0,001	3
51579	C97B	1	Harmonic I1 row 19	0,001	3
51580	C97C	1	Harmonic I2 row 19	0,001	3
51581	C97D	1	Harmonic I3 row 19	0,001	3
51582	C97E	1	Harmonic IN row 19	0,001	3
51583	C97F	1	Harmonic I1 row 21	0,001	3
51584	C980	1	Harmonic I2 row 21	0,001	3
51585	C981	1	Harmonic I3 row 21	0,001	3
51586	C982	1	Harmonic IN row 21	0,001	3
51587	C983	1	Harmonic I1 row 23	0,001	3
51588	C984	1	Harmonic I2 row 23	0,001	3
51589	C985	1	Harmonic I3 row 23	0,001	3
51590	C986	1	Harmonic IN row 23	0,001	3
51591	C987	1	Harmonic I1 row 25	0,001	3
51592	C988	1	Harmonic I2 row 25	0,001	3
51593	C989	1	Harmonic I3 row 25	0,001	3
51594	C98A	1	Harmonic IN row 25	0,001	3
51595	C98B	1	Harmonic I1 row 27	0,001	3
51596	C98C	1	Harmonic I2 row 27	0,001	3
51597	C98D	1	Harmonic I3 row 27	0,001	3
51598	C98E	1	Harmonic IN row 27	0,001	3
51599	C98F	1	Harmonic I1 row 29	0,001	3
51600	C990	1	Harmonic I2 row 29	0,001	3
51601	C991	1	Harmonic I3 row 29	0,001	3
51602	C992	1	Harmonic IN row 29	0,001	3
51603	C993	1	Harmonic I1 row 31	0,001	3
51604	C994	1	Harmonic I2 row 31	0,001	3
51605	C995	1	Harmonic I3 row 31	0,001	3
51606	C996	1	Harmonic IN row 31	0,001	3
51607	C997	1	Harmonic I1 row 33	0,001	3
51608	C998	1	Harmonic I2 row 33	0,001	3
51609	C999	1	Harmonic I3 row 33	0,001	3

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A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51610	C99A	1	Harmonic IN row 33	0,001	3
51611	C99B	1	Harmonic I1 row 35	0,001	3
51612	C99C	1	Harmonic I2 row 35	0,001	3
51613	C99D	1	Harmonic I3 row 35	0,001	3
51614	C99E	1	Harmonic IN row 35	0,001	3
51615	C99F	1	Harmonic I1 row 37	0,001	3
51616	C9A0	1	Harmonic I2 row 37	0,001	3
51617	C9A1	1	Harmonic I3 row 37	0,001	3
51618	C9A2	1	Harmonic IN row 37	0,001	3
51619	C9A3	1	Harmonic I1 row 39	0,001	3
51620	C9A4	1	Harmonic I2 row 39	0,001	3
51621	C9A5	1	Harmonic I3 row 39	0,001	3
51622	C9A6	1	Harmonic IN row 39	0,001	3
51623	C9A7	1	Harmonic I1 row 41	0,001	3
51624	C9A8	1	Harmonic I2 row 41	0,001	3
51625	C9A9	1	Harmonic I3 row 41	0,001	3
51626	C9AA	1	Harmonic IN row 41	0,001	3
51627	C9AB	1	Harmonic I1 row 43	0,001	3
51628	C9AC	1	Harmonic I2 row 43	0,001	3
51629	C9AD	1	Harmonic I3 row 43	0,001	3
51630	C9AE	1	Harmonic IN row 43	0,001	3
51631	C9AF	1	Harmonic I1 row 45	0,001	3
51632	C9B0	1	Harmonic I2 row 45	0,001	3
51633	C9B1	1	Harmonic I3 row 45	0,001	3
51634	C9B2	1	Harmonic IN row 45	0,001	3
51635	C9B3	1	Harmonic I1 row 47	0,001	3
51636	C9B4	1	Harmonic I2 row 47	0,001	3
51637	C9B5	1	Harmonic I3 row 47	0,001	3
51638	C9B6	1	Harmonic IN row 47	0,001	3
51639	C9B7	1	Harmonic I1 row 49	0,001	3
51640	C9B8	1	Harmonic I2 row 49	0,001	3
51641	C9B9	1	Harmonic I3 row 49	0,001	3
51642	C9BA	1	Harmonic IN row 49	0,001	3
51643	C9BB	1	Harmonic I1 row 51	0,001	3
51644	C9BC	1	Harmonic I2 row 51	0,001	3
51645	C9BD	1	Harmonic I3 row 51	0,001	3
51646	C9BE	1	Harmonic IN row 51	0,001	3
51647	C9BF	1	Harmonic I1 row 53	0,001	3
51648	C9C0	1	Harmonic I2 row 53	0,001	3
51649	C9C1	1	Harmonic I3 row 53	0,001	3
51650	C9C2	1	Harmonic IN row 53	0,001	3
51651	C9C3	1	Harmonic I1 row 55	0,001	3
51652	C9C4	1	Harmonic I2 row 55	0,001	3
51653	C9C5	1	Harmonic I3 row 55	0,001	3
51654	C9C6	1	Harmonic IN row 55	0,001	3
51655	C9C7	1	Harmonic I1 row 57	0,001	3
51656	C9C8	1	Harmonic I2 row 57	0,001	3
51657	C9C9	1	Harmonic I3 row 57	0,001	3
51658	C9CA	1	Harmonic IN row 57	0,001	3
51659	C9CB	1	Harmonic I1 row 59	0,001	3
51660	C9CC	1	Harmonic I2 row 59	0,001	3
51661	C9CD	1	Harmonic I3 row 59	0,001	3
51662	C9CE	1	Harmonic IN row 59	0,001	3
51663	C9CF	1	Harmonic I1 row 61	0,001	3

A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51664	C9D0	1	Harmonic I2 row 61	0,001	3
51665	C9D1	1	Harmonic I3 row 61	0,001	3
51666	C9D2	1	Harmonic IN row 61	0,001	3
51667	C9D3	1	Harmonic I1 row 63	0,001	3
51668	C9D4	1	Harmonic I2 row 63	0,001	3
51669	C9D5	1	Harmonic I3 row 63	0,001	3
51670	C9D6	1	Harmonic IN row 63	0,001	3
			Phase to phase voltage		
51671	C9D7	1	Max rank		3
51672	C9D8	1	Harmonic U12 row 3	0,001	3
51673	C9D9	1	Harmonic U23 row 3	0,001	3
51674	C9DA	1	Harmonic U31 row 3	0,001	3
51675	C9DB	1	Harmonic U12 row 5	0,001	3
51676	C9DC	1	Harmonic U23 row 5	0,001	3
51677	C9DD	1	Harmonic U31 row 5	0,001	3
51678	C9DE	1	Harmonic U12 row 7	0,001	3
51679	C9DF	1	Harmonic U23 row 7	0,001	3
51680	C9E0	1	Harmonic U31 row 7	0,001	3
51681	C9E1	1	Harmonic U12 row 9	0,001	3
51682	C9E2	1	Harmonic U23 row 9	0,001	3
51683	C9E3	1	Harmonic U31 row 9	0,001	3
51684	C9E4	1	Harmonic U12 row 11	0,001	3
51685	C9E5	1	Harmonic U23 row 11	0,001	3
51686	C9E6	1	Harmonic U31 row 11	0,001	3
51687	C9E7	1	Harmonic U12 row 13	0,001	3
51688	C9E8	1	Harmonic U23 row 13	0,001	3
51689	C9E9	1	Harmonic U31 row 13	0,001	3
51690	C9EA	1	Harmonic U12 row 15	0,001	3
51691	C9EB	1	Harmonic U23 row 15	0,001	3
51692	C9EC	1	Harmonic U31 row 15	0,001	3
51693	C9ED	1	Harmonic U12 row 17	0,001	3
51694	C9EE	1	Harmonic U23 row 17	0,001	3
51695	C9EF	1	Harmonic U31 row 17	0,001	3
51696	C9F0	1	Harmonic U12 row 19	0,001	3
51697	C9F1	1	Harmonic U23 row 19	0,001	3
51698	C9F2	1	Harmonic U31 row 19	0,001	3
51699	C9F3	1	Harmonic U12 row 21	0,001	3
51700	C9F4	1	Harmonic U23 row 21	0,001	3
51701	C9F5	1	Harmonic U31 row 21	0,001	3
51702	C9F6	1	Harmonic U12 row 23	0,001	3
51703	C9F7	1	Harmonic U23 row 23	0,001	3
51704	C9F8	1	Harmonic U31 row 23	0,001	3
51705	C9F9	1	Harmonic U12 row 25	0,001	3
51706	C9FA	1	Harmonic U23 row 25	0,001	3
51707	C9FB	1	Harmonic U31 row 25	0,001	3
51708	C9FC	1	Harmonic U12 row 27	0,001	3
51709	C9FD	1	Harmonic U23 row 27	0,001	3
51710	C9FE	1	Harmonic U31 row 27	0,001	3
51711	C9FF	1	Harmonic U12 row 29	0,001	3
51712	CA00	1	Harmonic U23 row 29	0,001	3
51713	CA01	1	Harmonic U31 row 29	0,001	3
51714	CA02	1	Harmonic U12 row 31	0,001	3
51715	CA03	1	Harmonic U23 row 31	0,001	3
51716	CA04	1	Harmonic U31 row 31	0,001	3

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A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51717	CA05	1	Harmonic U12 row 33	0,001	3
51718	CA06	1	Harmonic U23 row 33	0,001	3
51719	CA07	1	Harmonic U31 row 33	0,001	3
51720	CA08	1	Harmonic U12 row 35	0,001	3
51721	CA09	1	Harmonic U23 row 35	0,001	3
51722	CA0A	1	Harmonic U31 row 35	0,001	3
51723	CA0B	1	Harmonic U12 row 37	0,001	3
51724	CA0C	1	Harmonic U23 row 37	0,001	3
51725	CA0D	1	Harmonic U31 row 37	0,001	3
51726	CA0E	1	Harmonic U12 row 39	0,001	3
51727	CA0F	1	Harmonic U23 row 39	0,001	3
51728	CA10	1	Harmonic U31 row 39	0,001	3
51729	CA11	1	Harmonic U12 row 41	0,001	3
51730	CA12	1	Harmonic U23 row 41	0,001	3
51731	CA13	1	Harmonic U31 row 41	0,001	3
51732	CA14	1	Harmonic U12 row 43	0,001	3
51733	CA15	1	Harmonic U23 row 43	0,001	3
51734	CA16	1	Harmonic U31 row 43	0,001	3
51735	CA17	1	Harmonic U12 row 45	0,001	3
51736	CA18	1	Harmonic U23 row 45	0,001	3
51737	CA19	1	Harmonic U31 row 45	0,001	3
51738	CA1A	1	Harmonic U12 row 47	0,001	3
51739	CA1B	1	Harmonic U23 row 47	0,001	3
51740	CA1C	1	Harmonic U31 row 47	0,001	3
51741	CA1D	1	Harmonic U12 row 49	0,001	3
51742	CA1E	1	Harmonic U23 row 49	0,001	3
51743	CA1F	1	Harmonic U31 row 49	0,001	3
51744	CA20	1	Harmonic U12 row 51	0,001	3
51745	CA21	1	Harmonic U23 row 51	0,001	3
51746	CA22	1	Harmonic U31 row 51	0,001	3
51747	CA23	1	Harmonic U12 row 53	0,001	3
51748	CA24	1	Harmonic U23 row 53	0,001	3
51749	CA25	1	Harmonic U31 row 53	0,001	3
51750	CA26	1	Harmonic U12 row 55	0,001	3
51751	CA27	1	Harmonic U23 row 55	0,001	3
51752	CA28	1	Harmonic U31 row 55	0,001	3
51753	CA29	1	Harmonic U12 row 57	0,001	3
51754	CA2A	1	Harmonic U23 row 57	0,001	3
51755	CA2B	1	Harmonic U31 row 57	0,001	3
51756	CA2C	1	Harmonic U12 row 59	0,001	3
51757	CA2D	1	Harmonic U23 row 59	0,001	3
51758	CA2E	1	Harmonic U31 row 59	0,001	3
51759	CA2F	1	Harmonic U12 row 61	0,001	3
51760	CA30	1	Harmonic U23 row 61	0,001	3
51761	CA31	1	Harmonic U31 row 61	0,001	3
51762	CA32	1	Harmonic U12 row 63	0,001	3
51763	CA33	1	Harmonic U23 row 63	0,001	3
51764	CA34	1	Harmonic U31 row 63	0,001	3
Phase to neutral voltage					
51765	CA35	1	Max rank		3
51766	CA36	1	Harmonic V1 row 3	0,001	3
51767	CA37	1	Harmonic V2 row 3	0,001	3
51768	CA38	1	Harmonic V3 row 3	0,001	3
51769	CA39	1	Harmonic V1 row 5	0,001	3

A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51770	CA3A	1	Harmonic V2 row 5	0,001	3
51771	CA3B	1	Harmonic V3 row 5	0,001	3
51772	CA3C	1	Harmonic V1 row 7	0,001	3
51773	CA3D	1	Harmonic V2 row 7	0,001	3
51774	CA3E	1	Harmonic V3 row 7	0,001	3
51775	CA3F	1	Harmonic V1 row 9	0,001	3
51776	CA40	1	Harmonic V2 row 9	0,001	3
51777	CA41	1	Harmonic V3 row 9	0,001	3
51778	CA42	1	Harmonic V1 row 11	0,001	3
51779	CA43	1	Harmonic V2 row 11	0,001	3
51780	CA44	1	Harmonic V3 row 11	0,001	3
51781	CA45	1	Harmonic V1 row 13	0,001	3
51782	CA46	1	Harmonic V2 row 13	0,001	3
51783	CA47	1	Harmonic V3 row 13	0,001	3
51784	CA48	1	Harmonic V1 row 15	0,001	3
51785	CA49	1	Harmonic V2 row 15	0,001	3
51786	CA4A	1	Harmonic V3 row 15	0,001	3
51787	CA4B	1	Harmonic V1 row 17	0,001	3
51788	CA4C	1	Harmonic V2 row 17	0,001	3
51789	CA4D	1	Harmonic V3 row 17	0,001	3
51790	CA4E	1	Harmonic V1 row 19	0,001	3
51791	CA4F	1	Harmonic V2 row 19	0,001	3
51792	CA50	1	Harmonic V3 row 19	0,001	3
51793	CA51	1	Harmonic V1 row 21	0,001	3
51794	CA52	1	Harmonic V2 row 21	0,001	3
51795	CA53	1	Harmonic V3 row 21	0,001	3
51796	CA54	1	Harmonic V1 row 23	0,001	3
51797	CA55	1	Harmonic V2 row 23	0,001	3
51798	CA56	1	Harmonic V3 row 23	0,001	3
51799	CA57	1	Harmonic V1 row 25	0,001	3
51800	CA58	1	Harmonic V2 row 25	0,001	3
51801	CA59	1	Harmonic V3 row 25	0,001	3
51802	CA5A	1	Harmonic V1 row 27	0,001	3
51803	CA5B	1	Harmonic V2 row 27	0,001	3
51804	CA5C	1	Harmonic V3 row 27	0,001	3
51805	CA5D	1	Harmonic V1 row 29	0,001	3
51806	CA5E	1	Harmonic V2 row 29	0,001	3
51807	CA5F	1	Harmonic V3 row 29	0,001	3
51808	CA60	1	Harmonic V1 row 31	0,001	3
51809	CA61	1	Harmonic V2 row 31	0,001	3
51810	CA62	1	Harmonic V3 row 31	0,001	3
51811	CA63	1	Harmonic V1 row 33	0,001	3
51812	CA64	1	Harmonic V2 row 33	0,001	3
51813	CA65	1	Harmonic V3 row 33	0,001	3
51814	CA66	1	Harmonic V1 row 35	0,001	3
51815	CA67	1	Harmonic V2 row 35	0,001	3
51816	CA68	1	Harmonic V3 row 35	0,001	3
51817	CA69	1	Harmonic V1 row 37	0,001	3
51818	CA6A	1	Harmonic V2 row 37	0,001	3
51819	CA6B	1	Harmonic V3 row 37	0,001	3
51820	CA6C	1	Harmonic V1 row 39	0,001	3
51821	CA6D	1	Harmonic V2 row 39	0,001	3
51822	CA6E	1	Harmonic V3 row 39	0,001	3
51823	CA6F	1	Harmonic V1 row 41	0,001	3

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A : NEW COMMUNICATION TABLE FROM 01/2009

6 > TABLE C950Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
51824	CA70	1	Harmonic V2 row 41	0,001	3
51825	CA71	1	Harmonic V3 row 41	0,001	3
51826	CA72	1	Harmonic V1 row 43	0,001	3
51827	CA73	1	Harmonic V2 row 43	0,001	3
51828	CA74	1	Harmonic V3 row 43	0,001	3
51829	CA75	1	Harmonic V1 row 45	0,001	3
51830	CA76	1	Harmonic V2 row 45	0,001	3
51831	CA77	1	Harmonic V3 row 45	0,001	3
51832	CA78	1	Harmonic V1 row 47	0,001	3
51833	CA79	1	Harmonic V2 row 47	0,001	3
51834	CA7A	1	Harmonic V3 row 47	0,001	3
51835	CA7B	1	Harmonic V1 row 49	0,001	3
51836	CA7C	1	Harmonic V2 row 49	0,001	3
51837	CA7D	1	Harmonic V3 row 49	0,001	3
51838	CA7E	1	Harmonic V1 row 51	0,001	3
51839	CA7F	1	Harmonic V2 row 51	0,001	3
51840	CA80	1	Harmonic V3 row 51	0,001	3
51841	CA81	1	Harmonic V1 row 53	0,001	3
51842	CA82	1	Harmonic V2 row 53	0,001	3
51843	CA83	1	Harmonic V3 row 53	0,001	3
51844	CA84	1	Harmonic V1 row 55	0,001	3
51845	CA85	1	Harmonic V2 row 55	0,001	3
51846	CA86	1	Harmonic V3 row 55	0,001	3
51847	CA87	1	Harmonic V1 row 57	0,001	3
51848	CA88	1	Harmonic V2 row 57	0,001	3
51849	CA89	1	Harmonic V3 row 57	0,001	3
51850	CA8A	1	Harmonic V1 row 59	0,001	3
51851	CA8B	1	Harmonic V2 row 59	0,001	3
51852	CA8C	1	Harmonic V3 row 59	0,001	3
51853	CA8D	1	Harmonic V1 row 61	0,001	3
51854	CA8E	1	Harmonic V2 row 61	0,001	3
51855	CA8F	1	Harmonic V3 row 61	0,001	3
51856	CA90	1	Harmonic V1 row 63	0,001	3
51857	CA91	1	Harmonic V2 row 63	0,001	3
51858	CA92	1	Harmonic V3 row 63	0,001	3

7 > TABLE E000 Hex : Primary configuration

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
57344	E000	1	Network type : 0 : 1BL 1 : 2BL 2 : 3BL 3 : 3NBL 4 : 4BL 5 : 4NBL	–	3; 6; 16
57345	E001	1	CT secondary : 1: 1 A 5: 5 A	A	3; 6; 16
57346	E002	1	CT primary	A	3; 6; 16
57347	E003	1	Neutral current input on CT : 0 : No 1: Yes	–	3; 6; 16
57348	E004	1	CTN secondary : 1: 1 A 5: 5 A	A	3; 6; 16
57349	E005	1	CTN primary	A	3; 6; 16
57350	E006	1	Voltage input on TP : 0 : No 1: Yes	–	3; 6; 16

A : NEW COMMUNICATION TABLE FROM 01/2009

7 > TABLE E000 Hex (continued)

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
57351	E007	1	TP secondary : 60 : 60 V 100 : 100 V 110 : 110 V 115 : 115 V 120 : 120 V 173 : 173 V 190 : 190 V	V	3; 6; 16
57352	E008	2	TP primary	V	3; 6; 16
57354	E00A	1	Synchronisation start 0 : internal - 1 : external	–	3; 6; 16
57355	E00B	1	Internal synchronisation of mean powers P+/- Q+/- : 300 : 5mn - 480 : 8mn - 600 : 10mn 900 : 15mn - 1200 : 20mn - 1800 : 30mn	s	3; 6; 16

8 > TABLE E110 Hex : Ethernet configuration

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
57616	E110	1	Ethernet Adress IP Class A (0-255)	–	3; 6; 16
57617	E111	1	Ethernet Adress IP Class B (0-255)	–	3; 6; 16
57618	E112	1	Ethernet Adress IP Class C (0-255)	–	3; 6; 16
57619	E113	1	Ethernet Adress IP Class D (0-255)	–	3; 6; 16
57620	E114	1	Ethernet GATE Class A (0-255)	–	3; 6; 16
57621	E115	1	Ethernet GATE Class B (0-255)	–	3; 6; 16
57622	E116	1	Ethernet GATE Class C (0-255)	–	3; 6; 16
57623	E117	1	Ethernet GATE Class D (0-255)	–	3; 6; 16
57624	E118	1	Ethernet MASK Class A (0-255)	–	3; 6; 16
57625	E119	1	Ethernet MASK Class B (0-255)	–	3; 6; 16
57626	E11A	1	Ethernet MASK Class C (0-255)	–	3; 6; 16
57627	E11B	1	Ethernet MASK Class D (0-255)	–	3; 6; 16
57628	E11C	1	Use of DHCP 0 : No - 1 : Yes	–	3; 6; 16
57629	E11D	1	Reserved for manufacturer	–	3; 6; 16
57630	E11E	1	JBUS RTU over Ethernet 0 : No - 1 ; Yes	–	3; 6; 16
57631	E11F	1	JBUS/MODBUS gateway speed > Ethernet 0 = 2400 bps - 1 = 4800 bps - 2 = 9600 bps 3 = 19200 bps - 4 = 38400 bps	–	3; 6; 16
57632	E120	1	JBUS/MODBUS gateway parity > Ethernet 0 = none 1 = even 2 = odd	0 = none 1 = even 2 = odd	
57633	E121	1	JBUS/MODBUS gateway stop bits > Ethernet	-	3; 6; 16
57634	E122	1	Time out Jbus / Modbus > Ethernet	500 ms	3; 6; 16
57635	E123	1	JBUS slave address (RS485 & RTU over Ethernet)	1-247	3; 6; 16

A : NEW COMMUNICATION TABLE FROM 01/2009

9 > TABLE E200 Hex : Ethernet configuration

Decimal address	Hex. address	No. of words	Description	Unit	JBUS function available
57856	E200	1	Action : 0xA1 : Eeprom backup configuration 0xB2 : Product Reset	-	6; 16

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HEAD OFFICE

SOCOMEC GROUP

S.A. SOCOMEC capital 11 302 300 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse - F-67235 Benfeld Cedex - FRANCE

INTERNATIONAL
SALES DEPARTMENT

SOCOMEC

1, rue de Westhouse - B.P. 60010
F - 67235 Benfeld Cedex - FRANCE
Tel. +33 (0)3 88 57 41 41 - Fax +33 (0)3 88 74 08 00
scp.vex@socomec.com

www.socomec.com

socomec
Innovative Power Solutions