GEFRAN

GPC 40A-600A

ADVANCED MODULAR POWER CONTROLLERS

MANUAL FOR CONFIGURATION AND INSTALLATION IN CANOpen NETWORKS

Software version: 1.5x

Code: **81904_MSW_GPC-CANOpen_07-2021_ENG**

This document supplements the following manuals:

- Instructions for use and warnings
  (CODE 81900/05/2020)
- Configuration and programming manual
  (CODE 81901/11/2020)

The software version this manual refers to concerns the Modbus RTU/CANopen Fieldbus interface board inserted in the GPC as a PORT 2 serial communication port.

CAUTION!

The manual herein should be considered

as making up an integral part of the product, and it must always be available to anyone interacting with it.

The manual must always accompany the product, even in the event of sale to another user.

Installation and/or maintenance technicians must read the manual and carefully follow the instructions given here and in the annexes as GEFRAN cannot be held liable for damage to persons, property and/or the product through failure to comply with the following conditions.

Customers are obliged to respect trade secrecy; consequently, the following documentation and its annexes cannot be tampered with or amended, reproduced or sold to third parties, without authorisation to do so from **GEFRAN**.

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1 • INTRODUCTION

The "**GPC 40A-600A**" series of modular power controllers with PROFINET Fieldbus interface is designed for rapid integration of a large quantity of compact control units for temperature regulation and heating device control (up to 380 zones), within sophisticated automation systems (such as PLC, Supervisory Systems, etc.) interconnected via communication networks and protocols defined by the standard.

This manual is not designed to describe the "CANopen" Fieldbus, as it is presumed the user is familiar with the same and will refer if any updates are required to the above-mentioned standard or the official website of C.i.A. - CAN in Automation GmbH. www.can-cia.org.

It is also presumed that the user is already familiar with the technical characteristics of GPC products, as described in the dedicated user manuals accompanying each product, or available for download from the GEFRAN S.P.A. website www.gefran.com.

1.1. WARNINGS

Use the EDS file corresponding to the ordering code of the GPC product purchased:

PRODUCT COMPATIBILITY TABLE, ".eds" FILES AND FW VERSIONS							
version history		**EDS (GPC-1PH)** GPC1HCxx	**EDS (GPC-2PH)** GPC2HCxx	**EDS (GPC-3PH)** GPC3HCxx	**FW GPC600A**	**FW GPC-CAN**	**MANUAL** CANopen GPC
1	Ver.	01	01	01	02.1x	01.5x	81904
	Date	19/01/2021	19/01/2021	19/01/2021	15/12/2020	19/01/2021	?

2 • BIBLIOGRAPHIC REFERENCES

/1/ ISO 11898, Road vehicles – Interchange of digital information – Controller Area Network (CAN) for highspeed communication, 1993

/2/ CiA DS 301 V4.01, CANopen Application Layer and Communication Profile, 2000

/3/ CiA DS 404 V1.20, CANopen Device Profile Measuring Device and Closed Loop Controllers, 2002

/4/ CiA DS 305 V1.00, CANopen Layer Setting Service and Protocol (LSS), 2000

/5/ CiA DS 205 V1.00, LMT Service and Protocol specification, 1996

/6/ CiA DR 303 V1.00, CANopen Cabling and Connector Pin Assignment, 1999

/7/ 81900_MHW_GPC_40/600A_ITA, ISTRUZIONI PER USO ED AVVERTENZE (INSTRUCTIONS AND WARNINGS IN ITALIAN)

/8/ 81901_MSW_GPC_40/600A_ITA MANUALE DI CONFIGURAZIONE E PROGRAMMAZIONE (CONFIGURATION AND PROGRAMMING MANUAL IN ITALIAN)

/9/ 80902_MEMORY MAP_GPC_40/600A_ITA_EN

3 • MAIN TECHNICAL CHARACTERISTICS

NMT:		Slave
Error Control:		Node Guarding, Heartbeat
Node ID:	HW switch, LMT, LSS	
No. of PDOs:		4 TX, 4 RX
PDO modes: Sync (acyclic), RTR		Event-triggered, Time-triggered, Sync (cyclic),
PDO linking:		Yes
PDO mapping:		Static
SDO No.:	1 Server, 0 Client	
Emergency Message:	Yes	
CANopen version:	DS 301 V4.0, DS 301 V3.0	
Framework:		No
Certified:	No	
Device Profile:		-

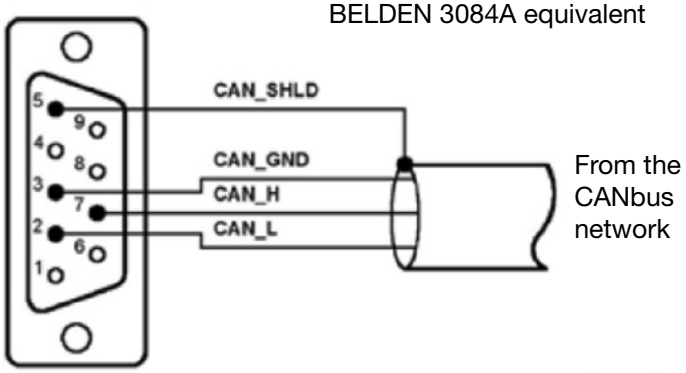
4 • INSTALLATION

For a complete description of the installation procedures and general electrical connections, refer to manual / 7 /, supplied with the products.

4.1. ELECTRICAL CONNECTIONS TO THE CANBUS NETWORK

D-BUS connector
9-pole female

Two 22/24 AWG pairs shielded cable
BELDEN 3084A equivalent



In accordance with / 6 /, the shielded cable must have particular features to ensure correct communication between CANopen devices:

Bus length (m)	Bus cable (1)		Termination resistance (Ω)	Baudrate (Kbit / s)
	Length-related Resistance (mΩ/ m)	Cross-section (mm2)		
0 … 40	70	0.25 … 0.34	124	1000 at 40 m
40 … 300	< 60	0.34 … 0.5	150 … 300	> 500 at 100 m
300 … 600	< 40	0.5 … 0.6	150 … 300	> 100 at 500 m
600 … 1000	< 26	0.75 … 0.8	150 … 300	> 50 at 1 Km

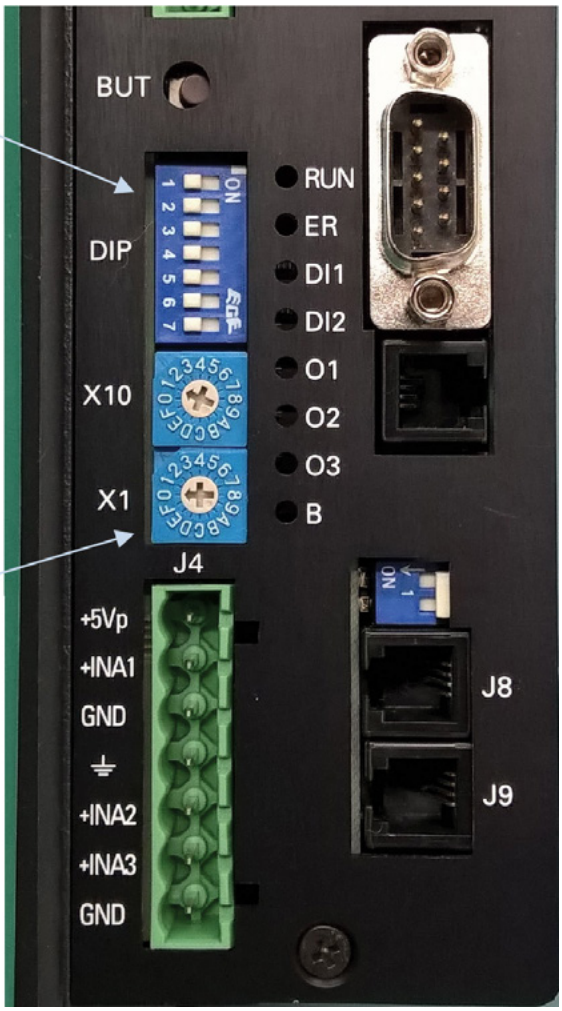
Recommended cable AC parameters: 120W impedance and 5nsec / m specific line delay.

GEFRAN S.p.A. supplies CANopen approved cables and connection systems as accessories to the GPCs.

4.2. ROTARY SWITCH AND DIP SWITCH SELECTION

The GPC configuration **dip-switch**, as described in manual /7/ in the chapter entitled "***Description of Dip-Switches***", is designed to define the operating mode of the instrument.

Dip "6", in particular, when it is in the "ON" position, allows the factory values to be restored at "POWER ON", for both temperature controller variables and CANopen communication parameters.



AFTER RESTARTING THE INSTRUMENT WITH THE FACTORY-SET PARAMETERS, REMEMBER TO SET "6" TO THE "OFF" POSITION.

DIP "7" MUST UNDER ALL CIRCUMSTANCES BE IN THE "OFF" POSITION!

The hexadecimal rotary switches on the GPC indicate the node address of the CANopen network that is acquired when the instrument is switched on.

The GPC is factory-set with the rotary switches in the "0" position and it is the customer's task to put it in the correct position, considering that only numbers 1 to 99 are valid.

The other positions of the rotary switches corresponding to particular functions described in the ***Hardware procedure for changing the Baud Rate of the CANopen port*** chapter and in the section in manual / 7 / on "***Use of MODBUS RTU port 1***".

WHEN TURNING THE ROTARY SWITCHES, THE GREEN RUN LED WILL STAY ON STEADILY; IT WILL START FLASHING AGAIN WHEN THE NEW VALUE HAS BEEN ACQUIRED, AFTER ABOUT 5 SECONDS.

4.3. HW PROCEDURE FOR CHANGING THE CANopen PORT BAUD RATE

TURN ON THE INSTRUMENT

SELECT NODE ADDRESS
Use the rotary switches (x1 and x10) to define the CANopen address of the node (range 1 -99)

SELECT CANopen BAUD RATE
Turn the rotary switch of the units (x1) to one of the following positions:
0 = 1Mbit / sec
1 = 800Kbit / sec
2 = 500Kbit / sec
3 = 250Kbit / sec
4 = 125Kbit / sec
5 = 100Kbit / sec
6 = 50Kbit / sec
7 = 20Kbit / sec
8 = 10Kbit / sec

CANopen BAUD RATE ACQUISITION
Turn the rotary switch of the tens (x10) to position “E”

RESET NODE ADDRESS
Return the rotary switches (x1 and x10) to the position of the desired node address

END
The new CANopen baud rate has been adopted

5 • PROCESS DATA ORGANISATION (PDO)

5.1. DEFAULT OBJECTS MAPPED IN THE PDO FOR GPC 40A-600A SINGLE PHASE

PDO	PREDEFINED COB-ID	OBJECT 1		OBJECT 2		OBJECT 3		OBJECT 4	
		INDEX	SUB	INDEX	SUB	INDEX	SUB	INDEX	SUB
	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)
01 TPDO	00000180+ID	2000	1	20B0	1	2217	1	201F	1
02 TPDO	00000280+ID	2400	1	2004	1	20BD	1	20BB	1
03 TPDO[1]	80000380+ID	2400	1	2004	1	20BD	1	20BB	1
04 TPDO[1]	80000480+ID	2400	1	2004	1	20BD	1	20BB	1
01 RPDO	00000200+ID	2494	1	2495	1	2496	1	2497	1
02 RPDO	00000300+ID	201E	1	6412	1	2040	1	24B2	1
03 RPDO[1]	80000400+ID	201E	1	6412	1	2040	1	24B2	1
04 RPDO[1]	80000500+ID	201E	1	6412	1	2040	1	24B2	1

PDO	OBJECT 1	OBJECT 2	OBJECT 3	OBJECT 4
01 TPDO	Instrument operating status	Voltage status	Physical state of digital outputs	Digital input status
02 TPDO	Analogue input value 1	Control output value 1	Single-phase load current 1	Single-phase load voltage 1
03 TPDO[1]	Analogue input value 1	Control output value 1	Single-phase load current 1	Single-phase load voltage 1
04 TPDO[1]	Analogue input value 1	Control output value 1	Single-phase load current 1	Single-phase load voltage 1
01 RPDO	Alarm threshold 1	Alarm threshold 2	Alarm threshold 3	Alarm threshold 4
02 RPDO	Controller 1 operating commands	Control output value 1	HB phase 1 alarm threshold	Value of analogue output 1
03 RPDO[1]	Controller 1 operating commands	Control output value 1	HB phase 1 alarm threshold	Value of analogue output 1
04 RPDO[1]	Controller 1 operating commands	Control output value 1	HB phase 1 alarm threshold	Value of analogue output 1

[1]: PDO that can be reactivated and remapped using the “PDO MAPPING” sequence described in the CANopen document / 2 /.

5.2. DEFAULT OBJECTS MAPPED IN THE PDO FOR GPC 40A-600A TWO-PHASE

PDO	PREDEFINED COB-ID	OBJECT 1		OBJECT 2		OBJECT 3		OBJECT 4	
		INDEX	SUB	INDEX	SUB	INDEX	SUB	INDEX	SUB
	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)
01 TPDO	00000180+ID	2000	1	20B0	1	2217	1	201F	1
02 TPDO	00000280+ID	2400	1	2004	1	20BD	1	20BB	1
03 TPDO	00000380+ID	2466	1	2004	2	20BD	2	20BB	2
04 TPDO[2]	80000480+ID	2466	1	2004	2	20BD	2	20BB	2
01 RPDO	00000200+ID	2494	1	2495	1	2496	1	2497	1
02 RPDO	00000300+ID	201E	1	6412	1	2040	1	24B2	1
03 RPDO	00000400+ID	201E	2	6412	2	2041	1	24B3	1
04 RPDO[2]	80000500+ID	201E	2	6412	2	2041	1	24B3	1

PDO	OBJECT 1	OBJECT 2	OBJECT 3	OBJECT 4
01 TPDO	Instrument operating status	Voltage status	Physical state of digital outputs	Digital input status
02 TPDO	Analogue input value 1	Control output value 1	Single-phase load current 1	Single-phase load voltage 1
03 TPDO	Analogue input value 2	Control output value 2	Single-phase load current 2	Single-phase load voltage 2
04 TPDO2	Analogue input value 2	Control output value 2	Single-phase load current 2	Single-phase load voltage 2
01 RPDO	Alarm threshold 1	Alarm threshold 2	Alarm threshold 3	Alarm threshold 4
02 RPDO	Controller 1 operating commands	Control output value 1	HB phase 1 alarm threshold	Value of analogue output 1
03 RPDO	Controller 2 operating commands	Control output value 2	HB phase 2 alarm threshold	Value of analogue output 2
04 RPDO2	Controller 2 operating commands	Control output value 2	HB phase 2 alarm threshold	Value of analogue output 2

[2]: PDO that can be reactivated and remapped using the “PDO MAPPING” sequence described in the CANopen document / 2 /.

5.3. DEFAULT OBJECTS MAPPED IN THE PDO FOR GPC 40A-600A THREE-PHASE

PDO	PREDEFINED COB-ID	OBJECT 1		OBJECT 2		OBJECT 3		OBJECT 4	
		INDEX	SUB	INDEX	SUB	INDEX	SUB	INDEX	SUB
	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)	(hex)
01 TPDO	00000180+ID	2000	1	20B0	1	2217	1	201F	1
02 TPDO	00000280+ID	2400	1	2004	1	20BD	1	20BB	1
03 TPDO	00000380+ID	2466	1	2004	2	20BD	2	20BB	2
04 TPDO	80000480+ID	2467	1	2004	3	20BD	3	20BB	3
01 RPDO	00000200+ID	2494	1	2495	1	2496	1	2497	1
02 RPDO	00000300+ID	201E	1	6412	1	2040	1	24B2	1
03 RPDO	00000400+ID	201E	2	6412	2	2041	1	24B3	1
04 RPDO	80000500+ID	201E	3	6412	3	2042	1	24B4	1

PDO	OBJECT 1	OBJECT 2	OBJECT 3	OBJECT 4
01 TPDO	Instrument operating status	Voltage status	Physical state of digital outputs	Digital input status
02 TPDO	Analogue input value 1	Control output value 1	Single-phase load current 1	Single-phase load voltage 1
03 TPDO	Analogue input value 2	Control output value 2	Single-phase load current 2	Single-phase load voltage 2
04 TPDO	Analogue input value 3	Control output value 3	Single-phase load current 3	Single-phase load voltage 3
01 RPDO	Alarm threshold 1	Alarm threshold 2	Alarm threshold 3	Alarm threshold 4
02 RPDO	Controller 1 operating commands	Control output value 1	HB phase 1 alarm threshold	Value of analogue output 1
03 RPDO	Controller 2 operating commands	Control output value 2	HB phase 2 alarm threshold	Value of analogue output 2
04 RPDO	Controller 3 operating commands	Control output value 3	HB phase 3 alarm threshold	Value of analogue output 3

5.4. LIST OF OBJECTS THAT CAN BE MAPPED IN THE PDO

The columns "**FUNCTION**" and "**ADD. (dec)**" Indicate the corresponding address of the MODBUS RTU / 9 / map; for a description of the functions, refer to configuration and programming manual / 8 /.

THE NUMBER OF SUBINDEX "n" IS A FUNCTION OF THE AREA CONCERNED:
1 = "MASTER" ZONE 1 PARAMETERS (GPC1HC01.EDS, GPC2HC01.EDS, GPC3HC01.EDS)
2 = "EXPANSION 1" ZONE 2 PARAMETERS (GPC2HC01.EDS, GPC3HC01.EDS)
3 = "EXPANSION 2" ZONE 3 PARAMETERS (GPC3HC01.EDS)

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2000	1	Instrument operating status	uns16	ro	---	467
2003	1	Auxiliary input value	uns16	ro	I.tA1	227
2004	n	Current control output value	int16	ro	Ou.P	2
201D	1	MASKOUT relay / digital output status	uns16	ro	---	319
201E	n	STATUS_W instrument operating commands	uns16	rw	---	305
201F	1	INPUT_DIG digital input status	uns16	ro	---	317
2021	n	Instrument operating status 1	uns16	ro	---	469
2022	n	Instrument operating status 2	uns16	ro	---	632
2023	n	Instrument operating status 3	uns16	ro	---	633
2024	n	Instrument operating status 4	uns16	ro	---	634
2029	n	ALSTATE IRQ alarms status	uns16	ro	---	318
202A	1	HB ALSTATE_HB alarms status	uns16	ro	---	504
202B	n	ALSTATE alarms status	uns16	ro	---	512
202C	n	SSR internal temperature	uns16	ro	INNTC_SSR	655
202D	n	POWER boards internal temperature	uns16	ro	INNTC_BOARD	536
2030	1	Phase 1 voltmetric input value	uns16	ro	I.tU1	232
2031	1	Phase 2 voltmetric input value	uns16	ro	I.tU2	492
2032	1	Phase 3 voltmetric input value	uns16	ro	I.tU3	493
2033	1	Phase 1 amperometric input value	uns16	ro	I.tA1on	468
2034	1	Phase 2 amperometric input value	uns16	ro	I.tA2on	498
2035	1	Phase 3 amperometric input value	uns16	ro	I.tA3on	499
2036	1	Phase 1 instantaneous amperometric input value	uns16	ro	I.tA1	473
2037	1	Phase 2 instantaneous amperometric input value	uns16	ro	I.tA2	490
2038	1	Phase 3 instantaneous amperometric input value	uns16	ro	I.tA3	491
2039	1	Phase 1 filtered voltmetric input value	uns16	ro	I.UF1	322
203A	1	Phase 2 filtered voltmetric input value	uns16	ro	I.UF2	496
203B	1	Phase 3 filtered voltmetric input value	uns16	ro	I.UF3	497
203C	1	Phase 1 filtered amperometric input value	uns16	ro	I.AF1	756
203D	1	Phase 2 filtered amperometric input value	uns16	ro	I.AF2	494
203E	1	Phase 3 filtered amperometric input value	uns16	ro	I.AF3	495
2040	1	HB phase 1 alarm threshold	uns16	rw	A.Hb1	55
2041	1	HB phase 2 alarm threshold	uns16	rw	A.Hb2	502
2042	1	HB phase 3 alarm threshold	uns16	rw	A.Hb3	503
20B0	1	Voltage status	uns16	ro	---	702
20B1	n	Frequency	uns16	ro	FrEq	315
20B2	n	Peak current in phase softstart	uns16	ro	I.tAP	709
20B6	1	Power factor	uns16	ro	CoS.F	716
20B7	n	Single-phase load power	uns16	ro	Ld.P	719
20B8	1	Three-phase load power	uns16	ro	Ld.P.t	720
20B9	n	Single-phase load impedence	uns16	ro	Ld.I	749
20BA	1	Three-phase load impedance	uns16	ro	Ld.I.t	750
20BB	n	Single-phase voltage	uns16	ro	Ld.V	751
20BC	1	Three-phase load voltage	uns16	ro	Ld.V.t	752
7400	1	Ammeter input value	int16	ro	I.tA1on	468

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20BD	n	Single-phase load current	uns16	ro	Ld.A	753
20BE	1	Three-phase load current	uns16	ro	Ld.A.t	754
20BF	1	Dynamic HB alarm threshold	uns16	ro	Hb.tr	744
2174	n	Input control from serial	uns16	rw	S.In	224
2217	n	Physical state of digital outputs	uns16	ro	---	664
2218	1	Output control from serial	uns16	rw	S.Ou	225
2400	1	Analogue input value	int16	ro	In.A	572
2450	n	LINE terminal internal temperature	uns16	ro	INNTC_LINE	534
2451	n	LOAD terminal internal temperature	uns16	ro	INNTC_LOAD	535
245B	1	Analogue input value from serial	uns16	rw	SERIAL_INA	581
2466	1	Analogue input value 2	int16	ro	In.A2	836
2467	1	Analogue input value 3	int16	ro	In.A3	843
2469	n	Instantaneous single-phase load voltage	uns16	ro	Ld.V IS	710
246A	n	Single-phase load voltage with output activated	uns16	ro	Ld.Von	711
2470	n	LSW single-phase load power	uns16	ro	Ld.P	880
2471	n	MSW single-phase load power	uns16	ro	Ld.P	881
2474	n	Energy 1 on LSW single-phase load	uns16	ro	Ld.E1	531
2475	n	Energy 1 on MSW single-phase load	uns16	ro	Ld.E1	532
2476	1	Energy 1 on LSW three-phase load	uns16	ro	Ld.E1.t	541
2477	1	Energy 1 on MSW three-phase load	uns16	ro	Ld.E1.t	542
2478	n	Energy 2 on LSW single-phase load	uns16	ro	Ld.E2	510
2479	n	Energy 2 on MSW single-phase load	uns16	ro	Ld.E2	511
247A	1	Energy 2 on LSW three-phase load	uns16	ro	Ld.E2.t	500
247B	1	Energy 2 on MSW three-phase load	uns16	ro	Ld.E2.t	501
2494	n	Alarm threshold 1	int16	rw	AL.1	12
2495	n	Alarm threshold 2	int16	rw	AL.2	13
2496	n	Alarm threshold 3	int16	rw	AL.3	14
2497	n	Alarm threshold 4	int16	rw	AL.4	58
24AF	1	Value of analogue output 1	int16	ro	Out.AO1	877
24B0	1	Value of analogue output 2	int16	ro	Out.AO2	878
24B1	1	Value of analogue output 3	int16	ro	Out.AO3	879
24B2	1	Value of analogue output from serial 1	int16	rw	SERIAL_OUTA1	727
24B3	1	Value of analogue output from serial 2	int16	rw	SERIAL_OUTA2	728
24B4	1	Value of analogue output from serial 3	int16	rw	SERIAL_OUTA3	729
24B6	1	Number of hours of LSW operation	uns16	ro	OH.c	396
24B7	1	Number of hours of MSW operation	uns16	ro	OH.c	397
24B8	n	LSW power feedback reference	uns16	rw	rif.P	884
24B9	n	MSW power feedback reference	uns16	rw	rif.P	885
24BA	n	LSW current feedback reference	uns16	ro	AriF	886
24BB	n	MSW current feedback reference	uns16	ro	AriF	887
24BD	n	Peak current projection during softstart	uns16	ro	I.tAProPk	898
24BE	n	RMS current projection in PA mode	uns16	ro	I.tAProRMS	899
24C7	n	Alarm threshold 5	int16	rw	AL.5	198
24C8	n	Alarm threshold 6	int16	rw	AL.6	199
24C9	n	Alarm threshold 7	int16	rw	AL.7	200
24CA	n	Alarm threshold 8	int16	rw	AL.8	201
24D8	n	Alarm 1 validation power	uns16	rw	A1.P	60
24D9	n	Alarm 2 validation power	uns16	rw	A2.P	61
24DA	n	Alarm 3 validation power	uns16	rw	A3.P	62
24DB	n	Alarm 4 validation power	uns16	rw	A4.P	63
24DC	n	Alarm 5 validation power	uns16	rw	A5.P	64
24DD	n	Alarm 6 validation power	uns16	rw	A6.P	65
24DE	n	Alarm 7 validation power	uns16	rw	A7.P	66
24DF	n	Alarm 8 validation power	uns16	rw	A8.P	67
24F4	n	Alarms status 3 stored for custom output 9	uns16	ro	---	297
7400	1	Ammeter input value	int16	ro	I.tA1on	468

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
24F5	n	Alarms status 3 stored for custom output 10	uns16	ro	---	298
24F6	n	Alarms status 4 stored for custom output 9	uns16	ro	---	299
24F7	n	Alarms status 4 stored for custom output 10	uns16	ro	---	300
24F8	n	VOLTAGE STATUS stored for custom output 9	uns16	ro	---	301
24F9	n	VOLTAGE STATUS stored for custom output 10	uns16	ro	---	302
24FA	n	ALSTATE_IRQ stored for custom9 output	uns16	ro	---	332
24FB	n	ALSTATE_IRQ stored for custom output 10	uns16	ro	---	333
24FE	1	Instrument operating status 10	uns16	rw	STATUS10	909
5025	n	Word controller operating commands	uns16	rw	---	-
6410	n	Current control output value	int16	ro	Ou.P	2
6412	n	Manual control output value	int16	rw	Ou.P	252
7400	1	Ammeter input value	int16	ro	I.tA1on	468

6.1. "COMMUNICATION PROFILE" AREA

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1000	0	Device type	unsigned32	ro	00000000
1001	0	Error register	unsigned8	ro	-
1002	0	Manufacturer status register	unsigned32	ro	-
1003	0	Number of errors in pre-defined error field	unsigned8	rw	-
	1	Error field n	unsigned32	ro	-
	2	Error field n-1	unsigned32	ro	-
	3	Error field n-2	unsigned32	ro	-
	4	Error field n-3	unsigned32	ro	-
	5	Error field n-4	unsigned32	ro	-
	6	Error field n-5	unsigned32	ro	-
	7	Error field n-6	unsigned32	ro	-
	8	Error field n-7	unsigned32	ro	-
1004	0	Number of PDOs supported	unsigned32	ro	00040004
	1	Number of synchronous PDOs	unsigned32	ro	00000004
	2	Number of asynchronous PDOs	unsigned32	ro	00040004
1005	0	COB-IB SYNC message	unsigned32	rw	00000080
1008	0	Manufacturer device name (GPC)	string	ro	78435047
1009	0	Manufacturer hardware version	string	ro	02
100A	0	Manufacturer software version	string	ro	0150
100B	0	Node-ID	unsigned32	ro	-
100C	0	Guard Time	unsigned16	rw	0000
100D	0	Life Time Factor	unsigned8	rw	00
100E	0	Node Guarding Identifier	unsigned32	rw	00000700+ID
100F	0	Number of SDOs supported	unsigned32	ro	00000001
1010	0	Number of Store parameters function	unsigned8	ro	04
	1	Save all parameters	unsigned32	rw	00000001
	2	Save communication parameters	unsigned32	rw	00000001
	3	Save application parameters	unsigned32	rw	00000001
	4	Save manufacturer parameters	unsigned32	rw	00000001
1011	0	Number of Restore parameters function	unsigned8	ro	04
	1	Restore all parameters	unsigned32	rw	00000001
	2	Restore communication parameters	unsigned32	rw	00000001
	3	Restore application parameters	unsigned32	rw	00000001
	4	Restore manufacturer parameters	unsigned32	rw	00000001
1014	0	COB-IB Emergency Object	unsigned32	rw	00000080+ID
1017	0	Producer Heartbeat Time	unsigned16	rw	0
1016	0	Number of Consumer Heartbeat Time	unsigned8	ro	01
	1	Consumer Heartbeat Time	unsigned32	rw	00000000
1018	0	Number of Identity Object	unsigned8	ro	04
	1	Vendor ID	unsigned32	ro	01000093
	2	Product code (see note 9)	unsigned32	ro	-
	3	Revision number	unsigned32	ro	-
	4	Serial number	unsigned32	ro	-
1029	0	Number of Error Classes	unsigned8	ro	7
	1	Communication Error (see note 7)	unsigned8	rw	0
	2	Digital Input Error	unsigned8	rw	0
	3	Analogue Input Error	unsigned8	rw	0
	4	Digital Output Error	unsigned8	rw	0
	5	Analogue Output Error	unsigned8	rw	0
	6	Controller Error	unsigned8	rw	0
	7	Alarm Error	unsigned8	rw	0

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1200	0	Number of Server SDO Parameter	unsigned8	ro	02
	1	COB-ID RX SDO	unsigned32	ro	00000600+ID
	2	COB-ID TX SDO	unsigned32	ro	00000580+ID
1400	0	Number of RPDO1 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO GPC	unsigned32	rw	00000200+ID
	2	Transmission type 1st RPDO GPC	unsigned8	rw	FF
	3	Inhibit time 1st RPDO GPC	unsigned16	rw	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO GPC	unsigned16	rw	0
1401	0	Number of RPDO2 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO GPC	unsigned32	rw	00000300+ID
	2	Transmission type 2nd RPDO GPC	unsigned8	rw	FF
	3	Inhibit time 2nd RPDO GPC	unsigned16	rw	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO GPC	unsigned16	rw	0
1402	0	Number of RPDO3 Communication parameter 1	unsigned8	ro	05
	1	COB-ID 3rd RPDO GPC	unsigned32	rw	00000400+ID
	2	Transmission type 3rd RPDO GPC	unsigned8	rw	FF
	3	Inhibit time 3rd RPDO GPC	unsigned16	rw	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 3rd RPDO GPC	unsigned16	rw	0
1403	0	Number of RPDO4 Communication parameter 2	unsigned8	ro	05
	1	COB-ID 4th RPDO GPC	unsigned32	rw	00000500+ID
	2	Transmission type 4th RPDO GPC	unsigned8	rw	FF
	3	Inhibit time 4th RPDO GPC	unsigned16	rw	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 4th RPDO GPC	unsigned16	rw	0
1600	0	Number of RPDO1 Mapping parameter	unsigned8	rw	04
	1	1st object mapped for 1st RPDO GPC	unsigned32	rw	24940110
	2	2nd object mapped for 1st RPDO GPC	unsigned32	rw	24950110
	3	3rd object mapped for 1st RPDO GPC	unsigned32	rw	24960110
	4	4th object mapped for 1st RPDO GPC	unsigned32	rw	24970110
1601	0	Number of RPDO2 Mapping parameter	unsigned8	rw	04
	1	1st object mapped for 2nd RPDO GPC	unsigned32	rw	201E0110
	2	2nd object mapped for 2nd RPDO GPC	unsigned32	rw	64120110
	3	3rd object mapped for 2nd RPDO GPC	unsigned32	rw	20400110
	4	4th object mapped for 2nd RPDO GPC	unsigned32	rw	24B20110
1602	0	Number of RPDO3 Mapping parameter 1	unsigned8	rw	04
	1	1st object mapped for 3rd RPDO GPC	unsigned32	rw	201E0210
	2	2nd object mapped for 3rd RPDO GPC	unsigned32	rw	64120210
	3	3rd object mapped for 3rd RPDO GPC	unsigned32	rw	20410110
	4	4th object mapped for 3rd RPDO GPC	unsigned32	rw	24B30110
1603	0	Number of RPDO4 Mapping parameter 2	unsigned8	rw	04
	1	1st object mapped for 4th RPDO GPC	unsigned32	rw	201E0310
	2	2nd object mapped for 4th RPDO GPC	unsigned32	rw	64120310
	3	3rd object mapped for 4th RPDO GPC	unsigned32	rw	20420110
	4	4th object mapped for 4th RPDO GPC	unsigned32	rw	24B40110
1800	0	Number of TPDO1 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO GPC	unsigned32	rw	00000180+ID
	2	Transmission type 1st TPDO GPC	unsigned8	rw	FF
	3	Inhibit time 1st TPDO GPC	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO1 GPC	unsigned16	rw	0

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1801	0	Number of TPDO2 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO GPC	unsigned32	rw	00000280+ID
	2	Transmission type 2nd TPDO GPC	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO GPC	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO GPC	unsigned16	rw	0
1802	0	Number of TPDO3 Communication parameter 1	unsigned8	ro	05
	1	COB-ID 3rd TPDO GPC	unsigned32	rw	00000380+ID
	2	Transmission type 3rd TPDO GPC	unsigned8	rw	FF
	3	Inhibit time 3rd TPDO GPC	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 3rd TPDO GPC	unsigned16	rw	0
1803	0	Number of TPDO4 Communication parameter 2	unsigned8	ro	05
	1	COB-ID 4th TPDO GPC	unsigned32	rw	00000480+ID
	2	Transmission type 4th TPDO GPC	unsigned8	rw	FF
	3	Inhibit time 4th TPDO GPC	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 4thTPDO GPC	unsigned16	rw	10
1A00	0	Number of TPDO1 Mapping parameter	unsigned8	rw	04
	1	1st object mapped for 1st TPDO GPC	unsigned32	rw	20000110
	2	2nd object mapped for 1st TPDO GPC	unsigned32	rw	20B00110
	3	3rd object mapped for 1st TPDO GPC	unsigned32	rw	22170110
	4	4th object mapped for 1st TPDO GPC	unsigned32	rw	201F0110
1A01	0	Number of TPDO2 Mapping parameter	unsigned8	rw	04
	1	1st object mapped for 2nd TPDO GPC	unsigned32	rw	24000110
	2	2nd object mapped for 2nd TPDO GPC	unsigned32	rw	20040110
	3	3rd object mapped for 2nd TPDO GPC	unsigned32	rw	20BD0110
	4	4thobject mapped for 2nd TPDO GPC	unsigned32	rw	20BB0110
1A02	0	Number of TPDO3 Mapping parameter 1	unsigned8	rw	04
	1	1st object mapped for 3rd TPDO GPC	unsigned32	rw	24660110
	2	2nd object mapped for 3rd TPDO GPC	unsigned32	rw	20040210
	3	3rd object mapped for 3rd TPDO GPC	unsigned32	rw	20BD0210
	4	4th object mapped for 3rd TPDO GPC	unsigned32	rw	20BB0210
1A03	0	Number of TPDO4 Mapping parameter 2	unsigned8	rw	04
	1	1st object mapped for 4th TPDO GPC	unsigned32	rw	24670110
	2	2nd object mapped for 4th TPDO GPC	unsigned32	rw	20040310
	3	3rd object mapped for 4th TPDO GPC	unsigned32	rw	20BD0310
	4	4th object mapped for 4th TPDO GPC	unsigned32	rw	20BB0310

6.2. “DEVICE PROFILE” AND “MANUFACTURER PROFILE” AREA

The columns “**FUNCTION**” and “**ADD. (dec)**” Indicate the corresponding address of the MODBUS RTU / 9 / map; for a description of the functions, refer to configuration and programming manual / 8 /.

THE NUMBER OF SUBINDEX “n” IS A FUNCTION OF THE AREA CONCERNED:
1 = “MASTER” ZONE 1 PARAMETERS (GPC1HC01.EDS, GPC2HC01.EDS, GPC3HC01.EDS)
2 = “EXPANSION 1” ZONE 2 PARAMETERS (GPC2HC01.EDS, GPC3HC01.EDS)
3 = “EXPANSION 2” ZONE 3 PARAMETERS (GPC3HC01.EDS)

MODBUS SERIAL NETWORK INSTALLATION						
INDEX (hex)	**SUB INDEX**	**DESCRIPTION**	**DATA TYPE**	**ACC.**	**FUNCTION**	**ADD. (dec)**
2342	1	Instrument identification code	uns16	ro	Cod	46
2344	1	Modbus serial baud rate selection 1	uns16	ro	bAu	45
2345	1	Modbus serial baud rate selection 2	uns16	ro	bAu.2	626
2172	1	Modbus serial parity selection 1	uns16	ro	PAr	47
2173	1	Modbus serial parity selection 2	uns16	ro	Par.2	627
INPUTS						
ANALOGUE INPUTS						
INDEX (hex)	**SUB INDEX**	**DESCRIPTION**	**DATA TYPE**	**ACC.**	**FUNCTION**	**ADD. (dec)**
2410	1	Analogue input probe type 1	uns16	rw	tP.A1	573
245C	1	Type of analogue input probe 2	uns16	rw	tP.A2	837
245D	1	Type of analogue input probe 3	uns16	rw	tP.A3	844
241A	1	Analogue input 1 bottom of scale	int16	rw	LS.A1	574
245E	1	Analogue input 2 bottom of scale	int16	rw	LS.A2	838
245F	1	Analogue input 3 bottom of scale	int16	rw	LS.A3	845
2420	1	Analogue input 1 top of scale	int16	rw	HS.A1	575
2460	1	Analogue input 2 top of scale	int16	rw	HS.A2	839
2461	1	Analogue input 3 top of scale	int16	rw	HS.A3	846
2425	1	Analogue input 1 correction offset	int16	rw	oFS.A1	577
2462	1	Analogue input 2 correction offset	int16	rw	oFS.A2	841
2463	1	Analogue input 3 correction offset	int16	rw	oFS.A3	848
2400	1	Analogue input value 1	int16	ro	In.A1	572
2466	1	Analogue input value 2	int16	ro	In.A2	836
2467	1	Analogue input value 3	int16	ro	In.A3	843
242A	1	Analogue input digital filter 1	uns16	rw	FLt.A1	576
2464	1	Analogue input digital filter 2	uns16	rw	FLt.A2	840
2465	1	Analogue input digital filter 3	uns16	rw	FLt.A3	847
LOAD CURRENT VALUES						
INDEX (hex)	**SUB INDEX**	**DESCRIPTION**	**DATA TYPE**	**ACC.**	**FUNCTION**	**ADD. (dec)**
20CC	1	Bottom of the TA1 input scale	uns16	ro	L.tA1	746
20CD	1	Bottom of the TA2 input scale	uns16	ro	L.tA2	747
20CE	1	Bottom of the TA3 input scale	uns16	ro	L.tA3	748
2210	1	Top of the phase 1 CT input scale	int16	ro	H.tA1	405
2240	1	Top of the phase 2 CT input scale	int16	ro	H.tA2	413
2244	1	Maximum phase 3 CT input scale limit	int16	ro	H.tA3	414
2212	1	Phase 1 TA input correction offset	int16	rw	o.tA1	220
2242	1	Phase 2 TA input correction offset	int16	rw	o.tA2	415
2246	1	Phase 3 TA input correction offset	int16	rw	o.tA3	416
2468	n	Transformation ratio for external TA input	uns16	rw	r.tA	393
2003	1	Phase 1 instantaneous amperometric input value	uns16	ro	I.tA1	227
2036	1	Phase 1 instantaneous amperometric input value	uns16	ro	I.tA1	473

2037	1	Phase 2 instantaneous amperometric input value	uns16	ro	I.tA2	490
2038	1	Phase 3 instantaneous amperometric input value	uns16	ro	I.tA3	491
7400	1	Ammeter input value	uns16	ro	I.tA1on	468
2033	1	Phase 1 amperometric input value	uns16	ro	I.tA1on	468
2034	1	Phase 2 amperometric input value	uns16	ro	I.tA2on	498
2035	1	Phase 3 amperometric input value	uns16	ro	I.tA3on	499
20B2	1	Peak current in phase softstart	uns16	ro	I.tAP	709
20B6	1	Power factor	uns16	ro	CoS.F	716
20BD	n	Single-phase load current	uns16	ro	Ld.A	753
20BE	1	Three-phase load current	uns16	ro	Ld.A.t	754
2206	1	TA input digital filter in seconds	uns16	rw	Ft.tA	219
203C	1	Phase 1 filtered amperometric input value	uns16	ro	I.AF1	756
203D	1	Phase 2 filtered amperometric input value	uns16	ro	I.AF2	494
203E	1	Phase 3 filtered amperometric input value	uns16	ro	I.AF3	495
24BD	n	Peak current projection during softstart	uns16	ro	I.tAProPk	898
24BE	n	RMS current projection in PA mode	uns16	ro	I.tAProRMS	899

LOAD VOLTAGE VALUES

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20BB	n	Single-phase voltage	uns16	ro	Ld.V	751
2469	n	Instantaneous single-phase load voltage	uns16	ro	Ld.V IS	710
246A	n	Single-phase load voltage with output activated	uns16	ro	Ld.Von	711
20BC	1	Three-phase load voltage	uns16	ro	Ld.V.t	752
246B	n	Bottom of voltmeter input scale	uns16	ro	L.t.VL	439
246C	n	Bottom of voltmeter input scale	uns16	ro	H.t.VL	443
246D	n	Voltmeter input correction offset	int16	rw	o.t.VL	444
246E	n	Voltmeter input digital filter	uns16	rw	Ft.t.VL	442
20B0	1	Voltage status	uns16	ro	---	702

LINE VOLTAGE VALUES

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2430	1	Bottom of the TV1 input scale	uns16	ro	L.tV1	453
2431	1	Bottom of the TV2 input scale	uns16	ro	L.tV2	454
2432	1	Bottom of the TV3 input scale	uns16	ro	L.tV3	455
2214	1	Top of the phase 1 TV input scale	uns16	ro	H.tU1	410
2248	1	Top of the phase 2 TV input scale	uns16	ro	H.tU2	417
224C	1	Top of the phase 3 TV input scale	uns16	ro	H.tU3	418
2208	1	TV input digital filter in seconds	uns16	rw	Ft.tU	412
2216	1	Phase 1 TV input correction offset	int16	rw	o.tU1	411
224A	1	Phase 2 TV input correction offset	int16	rw	o.tU2	419
224E	1	Phase 3 TV input correction offset	int16	rw	o.tU3	420
2030	1	Phase 1 voltmetric input value	uns16	ro	I.tU1	232
2031	1	Phase 2 voltmetric input value	uns16	ro	I.tU2	492
2032	1	Phase 3 voltmetric input value	uns16	ro	I.tU3	493
2039	1	Phase 1 filtered voltmetric input value	uns16	ro	I.UF1	322
203A	1	Phase 2 filtered voltmetric input value	uns16	ro	I.UF2	496
203B	1	Phase 3 filtered voltmetric input value	uns16	ro	I.UF3	497
20B1	n	Frequency	uns16	ro	FrEq	315
24C0	1	Three-phase line 1 unbalance threshold	uns16	rw	Unb.1	256
24C1	1	Three-phase line 2 unbalance threshold	uns16	rw	Unb.2	257
24C2	1	Three-phase line 3 unbalance threshold	uns16	rw	Unb.3	258

POWER ON LOAD						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20B7	n	LSW single-phase load power	uns16	ro	Ld.P	719
2470	n	LSW single-phase load power	uns16	ro	Ld.P	880
2471	n	MSW single-phase load power	uns16	ro	Ld.P	881
20B8	1	LSW three-phase load power	uns16	ro	Ld.P.t	720
2472	1	LSW three-phase load power	uns16	ro	Ld.P.t	882
2473	1	MSW three-phase load power	uns16	ro	Ld.P.t	883
20B9	n	Single-phase load impedence	uns16	ro	Ld.I	749
20BA	1	Three-phase load impedance	uns16	ro	Ld.I.t	750
2474	n	Energy 1 on LSW single-phase load	uns16	ro	Ld.E1	531
2475	n	Energy 1 on MSW single-phase load	uns16	ro	Ld.E1	532
2476	1	Energy 1 on LSW three-phase load	uns16	ro	Ld.E1.t	541
2477	1	Energy 1 on MSW three-phase load	uns16	ro	Ld.E1.t	542
2478	n	Energy 2 on LSW single-phase load	uns16	ro	Ld.E2	510
2479	n	Energy 2 on MSW single-phase load	uns16	ro	Ld.E2	511
247A	1	Energy 2 on LSW three-phase load	uns16	ro	Ld.E2.t	500
247B	1	Energy 2 on MSW three-phase load	uns16	ro	Ld.E2.t	501
247C	n	Energy reset on single-phase load 1	bool	rw	reset Ld.E1	114
247D	n	Energy reset on single-phase load 2	bool	rw	reset Ld.E2	115
DIGITAL INPUTS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2338	1	Digital input 1 function	uns16	rw	diG.1	140
2339	1	Digital input 2 function	uns16	rw	diG.2	618
2456	1	Digital input 3 function	uns16	rw	diG.3	694
247E	1	Digital input 4 function	uns16	rw	diG.4	712
2480	1	Definition of digital input types	uns16	rw	tP.diG	385
2481	1	PWM 1 input timeout	uns16	rw	PWM.t1	356
2482	1	PWM 2 input timeout	uns16	rw	PWM.t2	357
2483	1	PWM 3 input timeout	uns16	rw	PWM.t3	362
2484	1	PWM 1 input low-pass digital filter	uns16	rw	Ft.PWM1	438
2485	1	PWM 2 input low-pass digital filter	uns16	rw	Ft.PWM2	372
2486	1	PWM 3 input low-pass digital filter	uns16	rw	Ft.PWM3	373
2013	1	Digital Input 1 active	bool	ro	Status diG1	68
201B	1	Digital Input 2 active	bool	ro	Status diG2	92
2457	1	Digital Input 3 active	bool	ro	diG3 status	67
245F	1	Digital Input 4 active	bool	ro	diG4 status	66
201F	1	Digital input status	uns16	ro	INPUT_DIG	317
2487	1	PWM 1 input value	uns16	ro	In.PWM1	518
2488	1	PWM 2 input value	uns16	ro	In.PWM2	435
2489	1	PWM 3 input value	uns16	ro	In.PWM3	457

ALARMS

GENERIC ALARMS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2490	n	Alarm 1 reference quantity selection	uns16	rw	A1.r	215
2491	n	Alarm 2 reference quantity selection	uns16	rw	A2.r	216
2492	n	Alarm 3 reference quantity selection	uns16	rw	A3.r	217
2493	n	Alarm 4 reference quantity selection	uns16	rw	A4.r	218
24C3	n	Alarm 5 reference quantity selection	uns16	rw	A5.r	202
24C4	n	Alarm 6 reference quantity selection	uns16	rw	A6.r	203
24C5	n	Alarm 7 reference quantity selection	uns16	rw	A7.r	204
24C6	n	Alarm 8 reference quantity selection	uns16	rw	A8.r	205
2494	n	Alarm threshold 1	int16	rw	AL.1	12
2495	n	Alarm threshold 2	int16	rw	AL.2	13

2496	n	Alarm threshold 3	int16	rw	AL.3	14
2497	n	Alarm threshold 4	int16	rw	AL.4	58
24C7	n	Alarm threshold 5	int16	rw	AL.5	198
24C8	n	Alarm threshold 6	int16	rw	AL.6	199
24C9	n	Alarm threshold 7	int16	rw	AL.7	200
24CA	n	Alarm threshold 8	int16	rw	AL.8	201
2498	n	Alarm 1 hysteresis	int16	rw	Hy.1	27
2499	n	Alarm 2 hysteresis	int16	rw	Hy.2	30
249A	n	Alarm 3 hysteresis	int16	rw	Hy.3	53
249B	n	Alarm 4 hysteresis	int16	rw	Hy.4	59
24CB	n	Alarm 5 hysteresis	int16	rw	Hy.5	210
24CC	n	Alarm 6 hysteresis	int16	rw	Hy.6	211
24CD	n	Alarm 7 hysteresis	int16	rw	Hy.7	212
24CE	n	Alarm 8 hysteresis	int16	rw	Hy.8	213
249C	n	Alarm 1 type	uns16	rw	A1.t	406
249D	n	Alarm 2 type	uns16	rw	A2.t	407
249E	n	Alarm 3 type	uns16	rw	A3.t	408
249F	n	Alarm 4 type	uns16	rw	A4.t	409
24CF	n	Alarm 5 type	uns16	rw	A5.t	206
24D0	n	Alarm 6 type	uns16	rw	A6.t	207
24D1	n	Alarm 7 type	uns16	rw	A7.t	208
24D2	n	Alarm 8 type	uns16	rw	A8.t	209
2080	1	Alarm 1 direct / reverse	bool	rw	AL1 direct	46
2084	1	Alarm 1 absolute / relative	bool	rw	AL1 absolute	47
2088	1	Alarm 1 normal / symmetrical	bool	rw	AL1 normal	48
208C	1	Alarm 1 disabled at start-up	bool	rw	AL1 disable	49
2090	1	Alarm 1 with memory	bool	rw	AL1 memory	50
2081	1	Alarm 2 direct / reverse	bool	rw	AL2 direct	54
2085	1	Alarm 2 absolute / relative	bool	rw	AL2 absolute	55
2089	1	Alarm 2 normal / symmetrical	bool	rw	AL2 normal	56
208D	1	Alarm 2 disabled at start-up	bool	rw	AL2 disable	57
2091	1	Alarm 2 with memory	bool	rw	AL2 memory	58
2082	1	Alarm 3 direct / reverse	bool	rw	AL3 direct	36
2086	1	Alarm 3 absolute / relative	bool	rw	AL3 absolute	37
208A	1	Alarm 3 normal / symmetrical	bool	rw	AL3 normal	38
208E	1	Alarm 3 disabled at start-up	bool	rw	AL3 disable	39
2092	1	Alarm 3 with memory	bool	rw	AL3 memory	40
2083	1	Alarm 4 direct / reverse	bool	rw	AL4 direct	70
2087	1	Alarm 4 absolute / relative	bool	rw	AL4 absolute	71
208B	1	Alarm 4 normal / symmetrical	bool	rw	AL4 normal	72
208F	1	Alarm 4 disabled at start-up	bool	rw	AL4 disable	73
2093	1	Alarm 4 with memory	bool	rw	AL4 memory	74
2019	1	Reset alarm memory	bool	rw	Reset AL	79
2336	n	Enabling alarms	uns16	rw	AL.n	195
650D	n	Alarm 1 on	bool	ro	AL1 status	4
651D	n	Alarm 2 on	bool	ro	AL2 status	5
652D	n	Alarm 3 on	bool	ro	AL3 status	62
653D	n	Alarm 4 on	bool	ro	AL4 status	69
654D	n	Alarm 5 on	bool	ro	AL5 status	18
655D	n	Alarm 6 on	bool	ro	AL6 status	19
656D	n	Alarm 7 on	bool	ro	AL7 status	20
657D	n	Alarm 8 on	bool	ro	AL8 status	21
2029	n	ALSTATE IRQ alarms status	uns16	ro	---	318

HB ALARM						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2316	n	HB alarm function	uns16	rw	Hb.F	57
2076	n	HB alarm trigger wait time	uns16	rw	Hb.t	56
20A6	1	HB alarm threshold calibration	bool	rw	-	112
2040	1	HB phase 1 alarm threshold	uns16	rw	A.Hb1	55
2041	1	HB phase 2 alarm threshold	uns16	rw	A.Hb2	502
2042	1	HB phase 3 alarm threshold	uns16	rw	A.Hb3	503
20C7	n	HB alarm threshold calibration percentage	uns16	rw	Hb.P	737
20CA	n	Current detected in HB calibration	uns16	rw	Hb.tA	742
2436	n	Voltage detected in HB calibration	uns16	rw	Hb.tV	452
20CB	n	Power detected in HB calibration	uns16	rw	Hb.Pw	743
20E0	n	TA input point 0 from HB calibration	uns16	rw	Ir.tA.0	758
20E1	n	TA input point 1 from HB calibration	uns16	rw	Ir.tA.1	759
20E2	n	TA input point 2 from HB calibration	uns16	rw	Ir.tA.2	760
20E3	n	TA input point 3 from HB calibration	uns16	rw	Ir.tA.3	761
20E4	n	TA input point 4 from HB calibration	uns16	rw	Ir.tA.4	767
20E5	n	TA input point 5 from HB calibration	uns16	rw	Ir.tA.5	768
20E6	n	TA input point 6 from HB calibration	uns16	rw	Ir.tA.6	769
2437	n	TA input point 7 from HB calibration	uns16	rw	Ir.tA.7	382
2438	n	TA input point 8 from HB calibration	uns16	rw	Ir.tA.8	383
2439	n	TA input point 9 from HB calibration	uns16	rw	Ir.tA.9	384
2440	n	TV input point 0 from HB calibration	uns16	rw	Ir.tV.0	445
2441	n	TV input point 1 from HB calibration	uns16	rw	Ir.tV.1	446
2442	n	TV input point 2 from HB calibration	uns16	rw	Ir.tV.2	447
2443	n	TV input point 3 from HB calibration	uns16	rw	Ir.tV.3	448
2444	n	TV input point 4 from HB calibration	uns16	rw	Ir.tV.4	449
2445	n	TV input point 5 from HB calibration	uns16	rw	Ir.tV.5	450
2446	n	TV input point 6 from HB calibration	uns16	rw	Ir.tV.6	451
2447	n	TV input point 7 from HB calibration	uns16	rw	Ir.tV.7	390
2448	n	TV input point 8 from HB calibration	uns16	rw	Ir.tV.8	391
2449	n	TV input point 9 from HB calibration	uns16	rw	Ir.tV.9	392
20BF	n	Dynamic HB alarm threshold	uns16	ro	Hb.tr	744
2007	1	HB alarm active (OR of TA1, TA2, TA3)	bool	ro	Status HB	26
2015	1	HB alarm active (TA phase 1)	bool	ro	HB1 status	76
2016	1	HB alarm active (TA phase 2)	bool	ro	HB2 status	77
2017	1	HB alarm active (TA phase 3)	bool	ro	HB3 status	78
202A	1	HB ALSTATE_HB alarms status	uns16	ro	---	504
202B	n	ALSTATE alarms status	uns16	ro	---	512
POWER FAULT ALARMS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2361	n	Enable POWER_FAULT alarms	uns16	rw	hd.2	660
2362	1	SSR_SHORT update frequency	uns16	rw	dG.t	661
2363	n	NO_VOLTAGE / NO_CURRENT alarm time filter	uns16	rw	dG.F	662
2094	n	Reset diagnostic alarms	bool	rw	Reset DIAG	105
20F0	1	SSR_SHORT phase 1 alarm status	bool	ro	SHORT1	96
20F1	1	SSR_SHORT phase 2 alarm status	bool	ro	SHORT2	97
20F2	1	SSR_SHORT phase 3 alarm status	bool	ro	SHORT3	98
20F3	1	NO_VOLTAGE phase 1 alarm status	bool	ro	NO_VOLT1	99
20F4	1	NO_VOLTAGE phase 2 alarm status	bool	ro	NO_VOLT2	100
20F5	1	NO_VOLTAGE phase 3 alarm status	bool	ro	NO_VOLT3	101
20F6	1	NO_CURRENT phase 1 alarm status	bool	ro	NO_CUR1	102
20F7	1	NO_CURRENT phase 2 alarm status	bool	ro	NO_CUR2	103
20F8	1	NO_CURRENT phase 3 alarm status	bool	ro	NO_CUR3	104

THERMAL PROTECTION ALARMS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
202C	n	SSR internal temperature	uns16	ro	INNTC_SSR	655
202D	n	POWER boards internal temperature	uns16	ro	INNTC_BOARD	536
2450	n	LINE terminal internal temperature	uns16	ro	INNTC_LINE	534
2451	n	LOAD terminal internal temperature	uns16	ro	INNTC_LOAD	535
24A0	n	Maximum temperature reached by SSR	uns16	ro	INNTC_SSR_MAX	679
24D3	n	Relative maximum temperature reached by SSR	uns16	ro	INNTC_SSR1	328
24D4	n	Absolute maximum temperature reached by POWER	uns16	ro	INNTC_AIR2	329
24D5	n	Relative maximum temperature reached by POWER	uns16	ro	INNTC_AIR1	363
24D6	n	Relative temperature reset SSR1 and AIR1	bool	rw	RES_INNTC_1	122
FUSE OPEN AND SHORT CIRCUIT ALARMS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
24A1	1	Number of restarts in case of FUSE OPEN	uns16	rw	Fr.n	456
24A2	n	Reset FUSE OPEN alarms	bool	rw	-	109
ALARM VALIDATION POWER						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
24D8	n	Alarm 1 validation power	uns16	rw	A1.P	60
24D9	n	Alarm 2 validation power	uns16	rw	A2.P	61
24DA	n	Alarm 3 validation power	uns16	rw	A3.P	62
24DB	n	Alarm 4 validation power	uns16	rw	A4.P	63
24DC	n	Alarm 5 validation power	uns16	rw	A5.P	64
24DD	n	Alarm 6 validation power	uns16	rw	A6.P	65
24DE	n	Alarm 7 validation power	uns16	rw	A7.P	66
24DF	n	Alarm 8 validation power	uns16	rw	A8.P	67

OUTPUTS

ALLOCATION OF REFERENCE SIGNAL						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2318	n	OUT 1 function assignment	uns16	rw	rL.1	160
2320	n	OUT 2 function assignment	uns16	rw	rL.2	163
2322	n	OUT 3 function assignment	uns16	rw	rL.3	166
2324	n	OUT 4 function assignment	uns16	rw	rL.4	170
2326	n	OUT 5 function assignment	uns16	rw	rL.5	171
2328	n	OUT 6 function assignment	uns16	rw	rL.6	172
2465	n	OUT 1 cycle time	uns16	rw	Ct.1	9
2466	n	OUT 2 cycle time	uns16	rw	Ct.2	159
201D	1	MASKOUT relay / digital output status	uns16	ro	---	319
2009	n	Output 1 active	bool	ro	rL.1 status	12
200A	n	Output 2 active	bool	ro	rL.2 status	13
200B	n	Output 3 active	bool	ro	rL.3 status	14
200C	n	Output 4 active	bool	ro	rL.4 status	15
200D	n	Output 5 active	bool	ro	rL.5 status	16
200E	n	Output 6 active	bool	ro	rL.6 status	17

ALLOCATION OF PHYSICAL OUTPUTS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2350	1	OUT 1 physical output assignment	uns16	rw	out.1	607
2351	1	OUT 2 physical output assignment	uns16	rw	out.2	608
2352	1	OUT 3 physical output assignment	uns16	rw	out.3	609
2354	1	OUT 5 physical output assignment	uns16	rw	out.5	611
2355	1	OUT 6 physical output assignment	uns16	rw	out.6	612
2356	1	OUT 7 physical output assignment	uns16	rw	out.7	613
2357	1	OUT 8 physical output assignment	uns16	rw	out.8	614
2358	1	OUT 9 physical output assignment	uns16	rw	out.9	615
2359	1	OUT 10 physical output assignment	uns16	rw	out.10	616
2095	1	Alarm status OUT1	bool	ro	OUT1 status	82
2096	1	OUT2 alarm status	bool	ro	OUT2 status	83
2097	1	OUT3 alarm status	bool	ro	OUT3 status	84
2099	1	OUT5 alarm status	bool	ro	OUT5 status	86
209A	1	OUT6 alarm status	bool	ro	OUT6 status	87
209B	1	OUT7 alarm status	bool	ro	OUT7 status	88
209C	1	OUT8 alarm status	bool	ro	OUT8 status	89
209D	1	OUT9 alarm status	bool	ro	OUT9 status	90
209E	1	OUT10 alarm status	bool	ro	OUT10 status	91
2217	1	Physical state of digital outputs	uns16	ro	---	664
24E0	1	Alarm status screen for custom output 9_1	uns16	rw	OCM9_1	910
24E1	1	Alarm status screen for custom output 9_2	uns16	rw	OCM9_2	911
24E2	1	Alarm status screen for custom output 9_3	uns16	rw	OCM9_3	912
24E3	1	Alarm status screen for custom output 9_4	uns16	rw	OCM9_4	913
24E4	1	Alarm status screen for custom output 9_5	uns16	rw	OCM9_5	914
24E5	1	Alarm status screen for custom output 9_6	uns16	rw	OCM9_6	915
24E6	1	Alarm status screen for custom output 9_7	uns16	rw	OCM9_7	916
24E7	1	Alarm status screen for custom output 9_8	uns16	rw	OCM9_8	917
24E8	1	Alarm status screen for custom output 9_9	uns16	rw	OCM9_9	918
24E9	1	Alarm status screen for custom output 9_10	uns16	rw	OCM9_10	919
24EA	1	Alarm status screen for custom output 10_1	uns16	rw	OCM10_1	920
24EB	1	Alarm status screen for custom output 10_2	uns16	rw	OCM10_2	921
24EC	1	Alarm status screen for custom output 10_3	uns16	rw	OCM10_3	922
24ED	1	Alarm status screen for custom output 10_4	uns16	rw	OCM10_4	923
24EE	1	Alarm status screen for custom output 10_5	uns16	rw	OCM10_5	924
24EF	1	Alarm status screen for custom output 10_6	uns16	rw	OCM10_6	925
24F0	1	Alarm status screen for custom output 10_7	uns16	rw	OCM10_7	926
24F1	1	Alarm status screen for custom output 10_8	uns16	rw	OCM10_8	927
24F2	1	Alarm status screen for custom output 10_9	uns16	rw	OCM10_9	928
24F3	1	Alarm status screen for custom output 10_10	uns16	rw	OCM10_10	929
24F4	n	Alarms status 3 stored for custom output 9	uns16	ro	---	297
24F5	n	Alarms status 3 stored for custom output 10	uns16	ro	---	298
24F6	n	Alarms status 4 stored for custom output 9	uns16	ro	---	299
24F7	n	Alarms status 4 stored for custom output 10	uns16	ro	---	300
24F8	n	VOLTAGE STATUS stored for custom output 9	uns16	ro	---	301
24F9	n	VOLTAGE STATUS stored for custom output 10	uns16	ro	---	302
24FA	n	ALSTATE_IRQ stored for custom9 output	uns16	ro	---	332
24FB	n	ALSTATE_IRQ stored for custom output 10	uns16	ro	---	333
24FC	1	Reset status of last enabling of custom output 9	bool	rw	---	110
24FD	1	Reset status of last enabling of custom output 10	bool	rw	---	111

ANALOGUE OUTPUTS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
24A3	1	Analogue output type 1	uns16	rw	tP.AO1	865
24A4	1	Analogue output type 2	uns16	rw	tP.AO2	866
24A5	1	Analogue output type 3	uns16	rw	tP.AO3	867
24A6	1	Analogue output 1 reference allocation	uns16	rw	rF.AO1	868
24A7	1	Analogue output 2 reference allocation	uns16	rw	rF.AO2	869
24A8	1	Analogue output 3 reference allocation	uns16	rw	rF.AO3	870
24A9	1	Bottom of scale for analogue output 1	uns16	rw	LS.AO1	871
24AA	1	Bottom of scale for analogue output 2	uns16	rw	LS.AO2	872
24AB	1	Bottom of scale for analogue output 3	uns16	rw	LS.AO3	873
24AC	1	Top of scale for analogue output 1	uns16	rw	HS.AO1	874
24AD	1	Top of scale for analogue output 2	uns16	rw	HS.AO2	875
24AE	1	Top of scale for analogue output 3	uns16	rw	HS.AO3	876
24AF	1	Value of analogue output 1	int16	ro	Out.AO1	877
24B0	1	Value of analogue output 2	int16	ro	Out.AO2	878
24B1	1	Value of analogue output 3	int16	ro	Out.AO3	879
24B2	1	Value of analogue output from serial 1	int16	rw	SERIAL_OUTA1	727
24B3	1	Value of analogue output from serial 2	int16	rw	SERIAL_OUTA2	728
24B4	1	Value of analogue output from serial 3	int16	rw	SERIAL_OUTA3	729

CONTROLS

PID PARAMETERS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2360	n	Zone process variable attribution	uns16	rw	SPU	617
6410	n	Current control output value	int16	ro	Ou.P	2
2004	n	Current control output value	int16	ro	Ou.P	2
20E8	n	Control output gradient	uns16	rw	G.Out	763
20E9	n	Minimum trigger output	uns16	rw	Lo.P	764
20EA	n	Output power percentage	uns16	rw	P.PEr	765
20EB	n	Output power offset	uns16	rw	P.oFS	766
AUTOMATIC / MANUAL						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
6412	n	Manual control output value	int16	rw	Ou.P	252
6421	n	Controller in manual mode	bool	rw	Auto/Man	1

MANUAL POWER CORRECTION						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2052	n	Manual power correction reference voltage	int16	rw	riF	505
2054	n	Manual power correction	uns16	rw	Cor	506
24B5	1	Enable manual power correction	uns16	rw	SP.r	136
SOFTWARE ON / OFF MODE						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2369	n	Start modes	uns16	rw	P.On.t	699
2370	1	SW shutdown mode	uns16	rw	OFF.t	700
2232	n	Software Shutdown	bool	rw	OFF	11
2233	1	Enable saving in EEPROM	uns16	rw	EEP.E	901

OPERATING HOUR METER						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
24B6	1	Number of hours of LSW operation	uns16	ro	OH.c	396
24B7	1	Number of hours of MSW operation	uns16	ro	OH.c	397

POWER MANAGEMENT

SSR CONTROL MODES						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20C0	n	Enable trigger modes	uns16	rw	Hd.5	703
20C3	n	Maximum current limit in steady state	uns16	rw	Fu.tA	707
20C4	n	Minimum number of BF cycles	uns16	rw	bF.Cy	704
SOFTSTART						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
206B	n	Maximum softstart phase	uns16	rw	PS.Hi	630
20C1	n	Softstart phase ramp duration	uns16	rw	PS.tm	705
206D	n	Phase softstart time	uns16	rw	PS.oF	629
20C2	n	Maximum current limit in phase softstart ramp	uns16	rw	PS.tA	706
20A0	1	Phase softstart in progress	bool	ro	-	106
20A1	1	Phase softstart completed	bool	ro	-	107
20A2	1	Phase softstart restart	bool	rw	-	108
DELAY TRIGGERING						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20C5	n	First trigger delay	uns16	rw	dL.t	708
24FE	n	Trigger delay with rotation of phases 1-3-2	uns16	rw	dL.tr	772
FIRING CHANGE						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
248A	1	Enable FIRING CHANGE function	uns16	rw	hd.7	895
248B	n	FIRING CHANGE current hysteresis	uns16	rw	FC.tA	896
248C	n	FIRING CHANGE status set via serial	uns16	rw	-	897
248D	n	FIRING CHANGE minimum power	uns16	rw	FC.P	900
248E	n	Current threshold for activating FIRING CHANGE	uns16	rw	FC.thr	902
248F	n	FIRING CHANGE status set via serial	bool	rw	-	121
FEEDBACK MODE						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
20D0	n	Enabling feedback mode	uns16	rw	Hd.6	730
20D1	n	Maximum voltage feedback correction	uns16	rw	Cor.V	731
20D2	n	Maximum current feedback correction	uns16	rw	Cor.I	732
20D3	n	Maximum power feedback correction	uns16	rw	Cor.P	733
20D4	n	Voltage feedback reference	uns16	rw	rif.V	734
20D5	n	Current feedback reference	uns16	rw	rif.I	735
20D6	n	LSW power feedback reference	uns16	rw	rif.P	736
20A7	1	Feedback calibration selected in Hd.6	bool	rw	-	113
20C9	n	Integral time for feedback	uns16	rw	Fb.It	741
24B8	n	LSW power feedback reference	uns16	rw	rif.P	884
24B9	n	MSW power feedback reference	uns16	rw	rif.P	885
24BA	n	LSW current feedback reference	uns16	ro	AriF	886
24BB	n	MSW current feedback reference	uns16	ro	AriF	887
HEURISTIC POWER MANAGEMENT						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2365	1	Enabling heuristic power control	uns16	rw	hd.3	680
2366	1	Max current heuristic current management	uns16	rw	I.HEU	681

HETEROGENEOUS POWER CONTROL						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2367	1	Enabling heterogeneous power control	uns16	rw	hd.4	682
2368	1	Max current heterogeneous power management	uns16	rw	I.Het	683
VIRTUAL INSTRUMENT MANAGEMENT						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2174	n	Input control from serial	uns16	rw	S.In	224
2218	1	Output control from serial	uns16	rw	S.Ou	225
2219	1	LED and input control from serial	uns16	rw	S.LI	628
2228	1	Input / output value from serial to RAM	uns16	rw	V_IN_OUT	344
2230	1	Led value from serial in RAM	uns16	rw	V_X_LEDS	351
245B	1	Analogue input value from serial	int16	rw	SERIAL_INA	581
2238	n	IN.TA input value from serial	uns16	rw	SERIAL_INTA	685
HW AND SW INFORMATION						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
2227	1	GEFRAN manufacturer code	uns16	ro	-	120
2221	1	Device ID	uns16	ro	d.Id	121
2222	1	Software version	uns16	ro	UPd	122
2170	1	Hardware configuration	uns16	ro	C.Hd	190
2171	1	Hardware configuration 1	uns16	ro	C.Hd1	508
2452	1	Hardware configuration 2	uns16	ro	C.Hd2	543
2453	1	Hardware configuration 3	uns16	ro	C.Hd3	192
2454	1	Hardware configuration 4	uns16	ro	C.Hd4	193
2176	1	Fieldbus software version	uns16	ro	UPd.F	693
2177	1	Fieldbus Node Address	uns16	ro	Cod.F	695
2178	1	Fieldbus baudrate	uns16	ro	bAU.F	696
2175	1	Jumper status	uns16	ro	---	346
2340	1	RN status led function	uns16	rw	Ld.St	197
2341	1	ER led function	uns16	rw	Ld.2	619
234A	1	DI1 LED function	uns16	rw	Ld.3	620
234B	1	DI2 LED function	uns16	rw	Ld.4	621
234C	1	O1 LED function	uns16	rw	Ld.5	622
234D	1	O2 LED function	uns16	rw	Ld.6	623
234E	1	O3 LED function	uns16	rw	Ld.7	624
234F	1	O4 LED function	uns16	rw	Ld.8	625
201E	n	Controller operating commands	uns16	rw	STATUS_W	305
24BC	n	Status saved in EEPROM	uns16	ro	---	698
2000	1	Instrument operating status	uns16	ro	---	467
2021	n	Instrument operating status 1	uns16	ro	---	469
2022	n	Instrument operating status 2	uns16	ro	---	632
2023	n	Instrument operating status 3	uns16	ro	---	633
2024	n	Instrument operating status 4	uns16	ro	---	634
24FF	1	Instrument operating status 10	uns16	rw	STATUS10	909

GENERAL USE PARAMETERS						
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	FUNCTION	ADD. (dec)
5025	n	Word controller operating commands (see note 8)	uns16	rw	---	-
5A5A	0	Select CANopen baud rate (see note 2)	uns8	rw		
5A5B	0	Select NODE ID (see note 3)	uns32	rw		
5A5D	0	CANBUS network watch dog (see note 4)	uns16	rw		
5A60	0	Enable RXPDO update (see note 1)	uns8	rw		
5AF0	0	Serial number (for internal use only)	uns32	rw		
5AF2	n	Restore default configuration	uns16	wo	---	631
1029	0	Number of Error behaviour objects (see note 7)	uns8	ro	see CiA DS404	
	1	Communication Error	uns16	rw		
	2	Digital Input Error	uns16	rw		
	3	Analogue Input Error	uns16	rw		
	4	Digital Output Error	uns16	rw		
	5	Analogue Output Error	uns16	rw		
	6	Controller Error	uns16	rw		
	7	Alarm Error	uns16	rw		
7133	n	Maximum PV variation for PDO “Event”	int16	rw	see CiA DS404	
6406	n	Physical unit ammeter input value	uns32	ro	see CiA DS404	
6415	n	Physical unit of output power value	uns32	ro	see CiA DS404	
6422	n	ON/OFF controller	bool	rw	see CiA DS404	
6425	n	Byte controller operating commands (note 5)	uns8	rw	see CiA DS404	
6509	n	Action performed when alarm AL1 is triggered	uns8	ro	see CiA DS404	
6519	n	Action performed when alarm AL2 is triggered	uns8	ro	see CiA DS404	
6529	n	Action performed when alarm AL3 is triggered	uns8	ro	see CiA DS404	
6539	n	Action performed when alarm AL4 is triggered	uns8	ro	see CiA DS404	
6600	n	AL1 - AL4 alarm status	uns8	ro	see CiA DS404	
6427	n	Controller status (see note 6)	uns16	ro	see CiA DS404	

note 1: The value is expressed in tenths of a second (from 0.1sec to 25.5sec); setting “0” excludes periodic updating of the variables being written.

note 2: The change in the value of the 5A5A index is acquired at the next power up.
The table of CANopen baud rate values is:
0 = 1000 kbit/s
1 = 800 kbit/s
2 = 500 kbit/s (default)
3 = 250 kbit/s
4 = 125 kbit/s
5 = 100 kbit/s
6 = 50 kbit/s
7 = 20 kbit/s
8 = 10 kbit/s

note 3: The default activates reading of the rotary switch (from 01 to 99). It can be set from 01 to 127 via SDO.
To restore the rotary switch reading, write 0xFF000000.

note 4: The value is expressed in msec. If there are no messages in the CANBUS network for this time, the GPC goes into the “PREPARED” operating state.

note 5: According to CiA DS404 the valid bits are:
0 = Controller ON / OFF (1 = ON)
2 = Controller in manual mode (1 = Manual)

note 6: According to CiA DS404 the valid bits are:
0 = Controller ON / OFF (1 = ON)
2 = Controller in manual mode (1 = Manual)

note 7: The actions implemented by the GPC following a Communication Error can be selected via INDEX 1029:
0 = Enable “PREOPERATIONAL” status (default)
1 = No action
2 = Enable “PREPARED” status
3 = Enable “RESET” status
4 = Switch off SW + Enable “PREOPERATIONAL” status
5 = SW shutdown
6 = SW shutdown + Enable “PREPARED” status
7 = SW shutdown + Enable “RESET” status
8 = Controller in manual mode + Enable “PREOPERATIONAL” status
9 = Controller in manual mode + Enable “PREPARED” status
10 = Controller in manual mode + Enable “RESET” status

note 8: Index 5025 is an extension of INDEX 6425; the valid bits are:
0 = Controller ON / OFF (1 = ON)
2 = Controller in manual mode (1 = Manual)

note 9: The index 1018 SUB 2 identifies the “Device ID” of the instrument:
220 = GPC 40-600A

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