



USER'S MANUAL

Code **80341D** / Edition **0.5 - 04/08**

SOFTWARE VERSION **1.1x**

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The “Geflex” series of temperature control modules with **CANopen** Fieldbus interface provides rapid integration of a large number of compact temperature control units and control of the heating device (up to 90 zones) within advanced automation systems (such as PLCs, Supervision Systems, etc.), interconnected via communication networks and protocols defined by the **standard**.

This guide does not describe the “**CANopen**” Fieldbus: it is assumed that the user is familiar with it and, for updates, refers to such standard or to the official site managed by C.i.A. – CAN in Automation GmbH. **www.can-cia.org** .

It is also assumed that the user is familiar with the technical characteristics of GEFLEX products, as described in the user manuals enclosed with the product, code 80331x, or downloadable from the GEFTRAN S.P.A. internet site **www.gefran.com** .

2 • BIBLIOGRAPHICAL REFERENCES

- /1/ ISO 11898, Road vehicles – Interchange of digital information – Controller Area Network (CAN) for high speed 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/ GEFTRAN 80331x, GEFLEX User's Manual
GEFRAN 80347x, GEFLEX Programming and Configuration

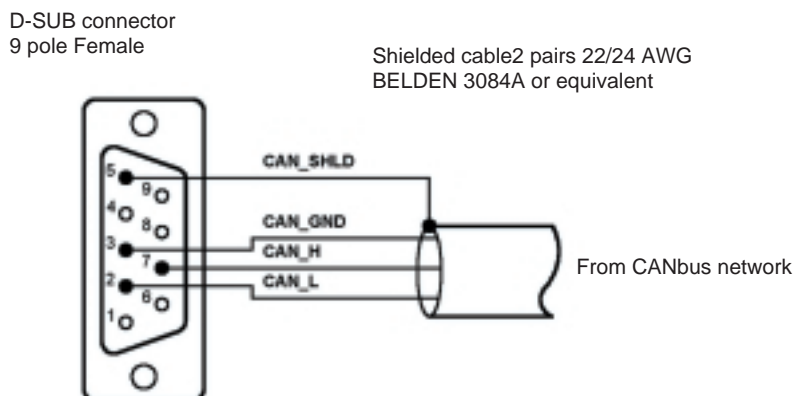
3 • MAIN TECHNICAL CHARACTERISTICS

◇	NMT:	Slave
◇	Error Control:	Node Guarding, Heartbeat
◇	Node ID:	HW switch, LMT, LSS
◇	No. of PDOs:	20 TX, 20 RX
◇	PDO modes:	Event-triggered, Time-triggered, Sync(cyclic), Sync(acyclic), RTR
◇	PDO linking:	Yes
◇	PDO mapping:	Static
◇	No. of SDO:	1 Server, 0 Client
◇	Emergency Message:	Yes
◇	CANopen version:	DS 301 V4.0, DS 301 V3.0
◇	Framework:	No
◇	Certified:	No
◇	Device Profile:	DS 404 V1.2

4 • INSTALLATION

For a complete description of installation procedures and main electrical connections, see the USER MANUAL for GEFLEX instruments, code 80331, enclosed with the products..

4.1 ELECTRICAL CONNECTIONS TO THE CANBUS NETWORK



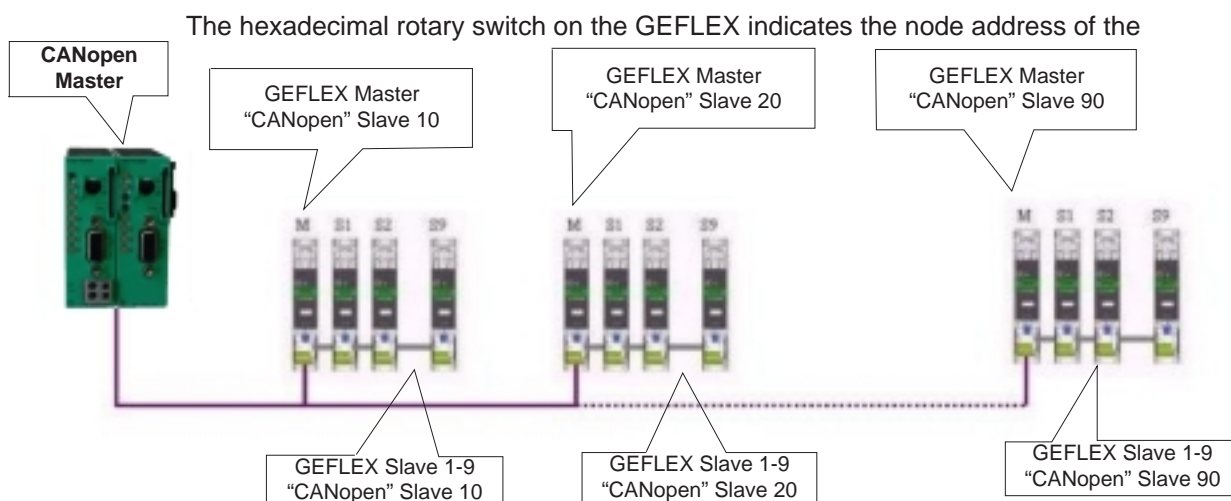
In accordance with **/6/**, the shielded cable must have special characteristics to guarantee correct communication among **CANopen** devices:

Bus length (m)	Bus cable (1)		Termination resistance (Ω)	Baudrate (Kbit/s)
	Length-related Resistance (m Ω /m)	Cross-section (mm ²)		
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

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

GEFRAN S.p.A. supplies approved **CANopen** cables and connection systems as accessories to GEFLEX instruments.

4.2 CONFIGURATION OF CANOPEN NETWORK ADDRESS



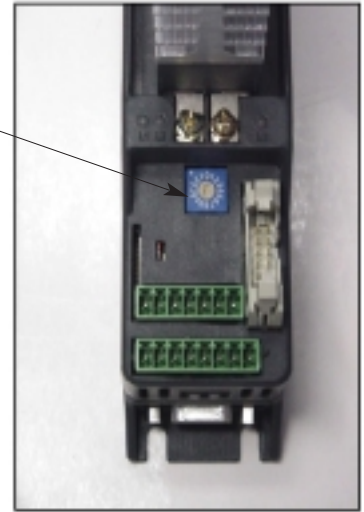
CANopen network and is acquired when the instrument is turned on.

The GEFLEX is supplied from the factory with the rotary switch in position “0.”

The customer has to set the correct position, considering that only 1 to 9 are valid and that the corresponding address is to be multiplied by 10 (i.e., 9 valid addresses from 10 to 90 decimal).

Intermediate addresses (0...9, 11...19, 21...29, etc.) can be used for other devices in the network (PLCs, drives, HMIs, etc.).

The other positions of the rotary switch regard special functions described in the section pertaining to “Installation of the serial network” in the GEFLEX USER MANUAL, such as the procedure for installation of GEFLEX slave modules connected via “MODBUS” local bus.



5 • PROCESS DATA STRUCTURE (PDO)

PDO	COB-ID PREDEFINED (hex)	OBJECT 1		OBJECT 2		OBJECT 3		DESCRIPTION
		INDEX (hex)	SUB (hex)	INDEX (hex)	SUB (hex)	INDEX (hex)	SUB (hex)	
01 TPDO	00000180+ID	7130	01	2000	01	6600	01	1st transmit PDO GEFLEX Master
02 TPDO	00000280+ID	6410	01	7400	01	6600	01	2nd transmit PDO GEFLEX Master
03 TPDO	00000181+ID	7130	02	2000	02	6600	02	1st transmit PDO GEFLEX Slave 1
04 TPDO	00000281+ID	6410	02	7400	02	6600	02	2nd transmit PDO GEFLEX Slave 1
05 TPDO	00000182+ID	7130	03	2000	03	6600	03	1st transmit PDO GEFLEX Slave 2
06 TPDO	00000282+ID	6410	03	7400	03	6600	03	2nd transmit PDO GEFLEX Slave 2
07 TPDO	00000183+ID	7130	04	2000	04	6600	04	1st transmit PDO GEFLEX Slave 3
08 TPDO	00000283+ID	6410	04	7400	04	6600	04	2nd transmit PDO GEFLEX Slave 3
09 TPDO	00000184+ID	7130	05	2000	05	6600	05	1st transmit PDO GEFLEX Slave 4
10 TPDO	00000284+ID	6410	05	7400	05	6600	05	2nd transmit PDO GEFLEX Slave 4
11 TPDO	00000185+ID	7130	06	2000	06	6600	06	1st transmit PDO GEFLEX Slave 5
12 TPDO	00000285+ID	6410	06	7400	06	6600	06	2nd transmit PDO GEFLEX Slave 5
13 TPDO	00000186+ID	7130	07	2000	07	6600	07	1st transmit PDO GEFLEX Slave 6
14 TPDO	00000286+ID	6410	07	7400	07	6600	07	2nd transmit PDO GEFLEX Slave 6
15 TPDO	00000187+ID	7130	08	2000	08	6600	08	1st transmit PDO GEFLEX Slave 7
16 TPDO	00000287+ID	6410	08	7400	08	6600	08	2nd transmit PDO GEFLEX Slave 7
17 TPDO	00000188+ID	7130	09	2000	09	6600	09	1st transmit PDO GEFLEX Slave 8
18 TPDO	00000288+ID	6410	09	7400	09	6600	09	2nd transmit PDO GEFLEX Slave 8
19 TPDO	00000189+ID	7130	0A	2000	0A	6600	0A	1st transmit PDO GEFLEX Slave 9
20 TPDO	00000289+ID	6410	0A	7400	0A	6600	0A	2nd transmit PDO GEFLEX Slave 9
01 RPDO	00000200+ID	750A	01	751A	01	-	-	1st receive PDO GEFLEX Master
02 RPDO	00000300+ID	2020	01	6412	01	6425	01	2nd receive PDO GEFLEX Master
03 RPDO	00000201+ID	750A	02	751A	02	-	-	1st receive PDO GEFLEX Slave 1
04 RPDO	00000301+ID	2020	02	6412	02	6425	02	2nd receive PDO GEFLEX Slave 1
05 RPDO	00000202+ID	750A	03	751A	03	-	-	1st receive PDO GEFLEX Slave 2
06 RPDO	00000302+ID	2020	03	6412	03	6425	03	2nd receive PDO GEFLEX Slave 2
07 RPDO	00000203+ID	750A	04	751A	04	-	-	1st receive PDO GEFLEX Slave 3
08 RPDO	00000303+ID	2020	04	6412	04	6425	04	2nd receive PDO GEFLEX Slave 3
09 RPDO	00000204+ID	750A	05	751A	05	-	-	1st receive PDO GEFLEX Slave 4
10 RPDO	00000304+ID	2020	05	6412	05	6425	05	2nd receive PDO GEFLEX Slave 4
11 RPDO	00000205+ID	750A	06	751A	06	-	-	1st receive PDO GEFLEX Slave 5
12 RPDO	00000305+ID	2020	06	6412	06	6425	06	2nd receive PDO GEFLEX Slave 5
13 RPDO	00000206+ID	750A	07	751A	07	-	-	1st receive PDO GEFLEX Slave 6
14 RPDO	00000306+ID	2020	07	6412	07	6425	07	2nd receive PDO GEFLEX Slave 6
15 RPDO	00000207+ID	750A	08	751A	08	-	-	1st receive PDO GEFLEX Slave 7
16 RPDO	00000307+ID	2020	08	6412	08	6425	08	2nd receive PDO GEFLEX Slave 7
17 RPDO	00000208+ID	750A	09	751A	09	-	-	1st receive PDO GEFLEX Slave 8
18 RPDO	00000308+ID	2020	09	6412	09	6425	09	2nd receive PDO GEFLEX Slave 8
19 RPDO	00000209+ID	750A	0A	751A	0A	-	-	1st receive PDO GEFLEX Slave 9
20 RPDO	00000309+ID	2020	0A	6412	0A	6425	0A	2nd receive PDO GEFLEX Slave 9

5.1 PDO MAPPING OBJECTS NAMES

PDO	OBJECT 1	OBJECT 2	OBJECT 3
1st TXPDO	Process variable	Instrument work status	Status of alarms AL1-AL4
2nd TXPDO (note 1)	Control output value	CT input value	Status of alarms AL1-AL4
1st RXPDO (note 2)	Alarm AL1 setpoint	Alarm AL2 setpoint	-
2nd RXPDO	Local Set point	Control output value	Controller controls

note 1: The objects of 2nd TXPDO are mappable through index 5A5C

note 2: The objects of 1st RXPDO are mappable through index 5A5E

6 • OBJECT DICTIONARY

6.1 COMMUNICATION PROFILE

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1000	0	Device type	unsigned32	ro	00320194
1001	0	Error register	unsigned8	ro	-
1002	0	Manufacturer status register	unsigned32	ro	-
1003	0	Number of error 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	Nr. of PDOs supported	unsigned32	ro	00140014
	1	Nr. of synchronous PDOs	unsigned32	ro	00000014
	2	Nr. of asynchronous PDOs	unsigned32	ro	00140014
1005	0	COB-IB SYNC message	unsigned32	rw	00000080
1008	0	Manufact. device name (GFX)	string	ro	20584647
1009	0	Manufacturer hardware version	string	ro	01
100A	0	Manufacturer software version	string	ro	0110
100B	0	Node-ID	unsigned32	ro	-
100C	0	Guard Time	unsigned16	rw	0064
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	01F4
1018	0	Number of Identity Object	unsigned8	ro	04
	1	Vendor ID	unsigned32	ro	01000093
	2	Product code	unsigned32	ro	000000C0
	3	Revision number	unsigned32	ro	00000000
	4	Serial number	unsigned32	ro	-
1200	0	Nr. 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

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1400	0	Nr. of RPDO1 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Master	unsigned32	rw	00000200+ID
	2	Trasmission type 1st RPDO Geflex Master	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Master	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Master	unsigned16	ro	0
1401	0	Nr. of RPDO2 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Master	unsigned32	rw	00000300+ID
	2	Trasmission type 2nd RPDO Geflex Master	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Master	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Master	unsigned16	ro	0
1402	0	Nr. of RPDO3 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 1	unsigned32	rw	00000201+ID
	2	Trasmission type 1st RPDO Geflex Slave 1	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 1	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 1	unsigned16	ro	0
1403	0	Nr. of RPDO4 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 1	unsigned32	rw	00000301+ID
	2	Trasmission type 2nd RPDO Geflex Slave 1	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 1	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 1	unsigned16	ro	0
1404	0	Nr. of RPDO5 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 2	unsigned32	rw	00000202+ID
	2	Trasmission type 1st RPDO Geflex Slave 2	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 2	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 2	unsigned16	ro	0
1405	0	Nr. of RPDO6 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 2	unsigned32	rw	00000302+ID
	2	Trasmission type 2nd RPDO Geflex Slave 2	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 2	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 2	unsigned16	ro	0
1406	0	Nr. of RPDO7 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 3	unsigned32	rw	00000203+ID
	2	Trasmission type 1st RPDO Geflex Slave 3	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 3	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 3	unsigned16	ro	0
1407	0	Nr. of RPDO8 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 3	unsigned32	rw	00000303+ID
	2	Trasmission type 2nd RPDO Geflex Slave 3	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 3	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 3	unsigned16	ro	0

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1408	0	Nr. of RPDO9 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 4	unsigned32	rw	00000204+ID
	2	Trasmission type 1st RPDO Geflex Slave 4	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 4	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 4	unsigned16	ro	0
1409	0	Nr. of RPDO10 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 4	unsigned32	rw	00000304+ID
	2	Trasmission type 2nd RPDO Geflex Slave 4	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 4	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 4	unsigned16	ro	0
140A	0	Nr. of RPDO11 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 5	unsigned32	rw	00000205+ID
	2	Trasmission type 1st RPDO Geflex Slave 5	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 5	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 5	unsigned16	ro	0
140B	0	Nr. of RPDO12 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 5	unsigned32	rw	00000305+ID
	2	Trasmission type 2nd RPDO Geflex Slave 5	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 5	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 5	unsigned16	ro	0
140C	0	Nr. of RPDO13 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 6	unsigned32	rw	00000206+ID
	2	Trasmission type 1st RPDO Geflex Slave 6	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 6	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 6	unsigned16	ro	0
140D	0	Nr. of RPDO14 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 6	unsigned32	rw	00000306+ID
	2	Trasmission type 2nd RPDO Geflex Slave 6	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 6	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 6	unsigned16	ro	0
140E	0	Nr. of RPDO15 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 7	unsigned32	rw	00000207+ID
	2	Trasmission type 1st RPDO Geflex Slave 7	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 7	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 7	unsigned16	ro	0
140F	0	Nr. of RPDO16 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 7	unsigned32	rw	00000307+ID
	2	Trasmission type 2nd RPDO Geflex Slave 7	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 7	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 7	unsigned16	ro	0

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1410	0	Nr. of RPDO17 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 8	unsigned32	rw	00000208+ID
	2	Trasmission type 1st RPDO Geflex Slave 8	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 8	unsigned16	ro	0
1411	0	Nr. of RPDO18 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 8	unsigned32	rw	00000308+ID
	2	Trasmission type 2nd RPDO Geflex Slave 8	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 8	unsigned16	ro	0
1412	0	Nr. of RPDO19 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st RPDO Geflex Slave 9	unsigned32	rw	00000209+ID
	2	Trasmission type 1st RPDO Geflex Slave 9	unsigned8	ro	FD
	3	Inhibit time 1st RPDO Geflex Slave 9	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st RPDO Geflex Slave 9	unsigned16	ro	0
1413	0	Nr. of RPDO20 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd RPDO Geflex Slave 9	unsigned32	rw	00000309+ID
	2	Trasmission type 2nd RPDO Geflex Slave 9	unsigned8	ro	FD
	3	Inhibit time 2nd RPDO Geflex Slave 9	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd RPDO Geflex Slave 9	unsigned16	ro	0
1600	0	Nr. of RPDO1 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Master	unsigned32	ro	750A0110
	2	2nd object mapped for 1st RPDO Geflex Master	unsigned32	ro	751A0110
1601	0	Nr. of RPDO2 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Master	unsigned32	ro	74020110
	2	2nd object mapped for 2nd RPDO Geflex Master	unsigned32	ro	64120110
	3	3rd object mapped for 2nd RPDO Geflex Master	unsigned32	ro	64250110
1602	0	Nr. of RPDO3 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 1	unsigned32	ro	750A0210
	2	2nd object mapped for 1st RPDO Geflex Slave 1	unsigned32	ro	751A0210
1603	0	Nr. of RPDO4 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 1	unsigned32	ro	74020210
	2	2nd object mapped for 2nd RPDO Geflex Slave 1	unsigned32	ro	64120210
	3	3rd object mapped for 2nd RPDO Geflex Slave 1	unsigned32	ro	64250210
1604	0	Nr. of RPDO5 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 2	unsigned32	ro	750A0310
	2	2nd object mapped for 1st RPDO Geflex Slave 2	unsigned32	ro	751A0310
1605	0	Nr. of RPDO6 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 2	unsigned32	ro	74020310
	2	2nd object mapped for 2nd RPDO Geflex Slave 2	unsigned32	ro	64120310
	3	3rd object mapped for 2nd RPDO Geflex Slave 2	unsigned32	ro	64250310
1606	0	Nr. of RPDO7 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 3	unsigned32	ro	750A0410
	2	2nd object mapped for 1st RPDO Geflex Slave 3	unsigned32	ro	751A0410

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1607	0	Nr. of RPDO8 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 3	unsigned32	ro	74020410
	2	2nd object mapped for 2nd RPDO Geflex Slave 3	unsigned32	ro	64120410
	3	3rd object mapped for 2nd RPDO Geflex Slave 3	unsigned32	ro	64250410
1608	0	Nr. of RPDO9 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 4	unsigned32	ro	750A0510
	2	2nd object mapped for 1st RPDO Geflex Slave 4	unsigned32	ro	751A0510
1609	0	Nr. of RPDO10 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 4	unsigned32	ro	74020510
	2	2nd object mapped for 2nd RPDO Geflex Slave 4	unsigned32	ro	64120510
	3	3rd object mapped for 2nd RPDO Geflex Slave 4	unsigned32	ro	64250510
160A	0	Nr. of RPDO11 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 5	unsigned32	ro	750A0610
	2	2nd object mapped for 1st RPDO Geflex Slave 5	unsigned32	ro	751A0610
160B	0	Nr. of RPDO12 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 5	unsigned32	ro	74020610
	2	2nd object mapped for 2nd RPDO Geflex Slave 5	unsigned32	ro	64120610
	3	3rd object mapped for 2nd RPDO Geflex Slave 5	unsigned32	ro	64250610
160C	0	Nr. of RPDO13 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 6	unsigned32	ro	750A0710
	2	2nd object mapped for 1st RPDO Geflex Slave 6	unsigned32	ro	751A0710
160D	0	Nr. of RPDO14 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 6	unsigned32	ro	74020710
	2	2nd object mapped for 2nd RPDO Geflex Slave 6	unsigned32	ro	64120710
	3	3rd object mapped for 2nd RPDO Geflex Slave 6	unsigned32	ro	64250710
160E	0	Nr. of RPDO15 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 7	unsigned32	ro	750A0810
	2	2nd object mapped for 1st RPDO Geflex Slave 7	unsigned32	ro	751A0810
160F	0	Nr. of RPDO16 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 7	unsigned32	ro	74020810
	2	2nd object mapped for 2nd RPDO Geflex Slave 7	unsigned32	ro	64120810
	3	3rd object mapped for 2nd RPDO Geflex Slave 7	unsigned32	ro	64250810
1610	0	Nr. of RPDO17 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 8	unsigned32	ro	750A0910
	2	2nd object mapped for 1st RPDO Geflex Slave 8	unsigned32	ro	751A0910
1611	0	Nr. of RPDO18 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 8	unsigned32	ro	74020910
	2	2nd object mapped for 2nd RPDO Geflex Slave 8	unsigned32	ro	64120910
	3	3rd object mapped for 2nd RPDO Geflex Slave 8	unsigned32	ro	64250910
1612	0	Nr. of RPDO19 Mapping parameter	unsigned8	ro	02
	1	1st object mapped for 1st RPDO Geflex Slave 9	unsigned32	ro	750A0A10
	2	2nd object mapped for 1st RPDO Geflex Slave 9	unsigned32	ro	751A0A10
1612	0	Nr. of RPDO20 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd RPDO Geflex Slave 9	unsigned32	ro	74020A10
	2	2nd object mapped for 2nd RPDO Geflex Slave 9	unsigned32	ro	64120A10
	3	3rd object mapped for 2nd RPDO Geflex Slave 9	unsigned32	ro	64250A10

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1800	0	Nr. of TPDO1 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Master	unsigned32	rw	00000180+ID
	2	Transmission type 1st TPDO Geflex Master	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Master	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO1 Geflex Master	unsigned16	rw	03E8
1801	0	Nr of TPDO2 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Master	unsigned32	rw	00000280+ID
	2	Trasmission type 2nd TPDO Geflex Master	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Master	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Master	unsigned16	rw	03E8
1802	0	Nr. of TPDO3 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 1	unsigned32	rw	00000181+ID
	2	Trasmission type 1st TPDO Geflex Slave 1	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 1	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 1	unsigned16	rw	03E8
1803	0	Nr of TPDO4 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 1	unsigned32	rw	00000281+ID
	2	Trasmission type 2nd TPDO Geflex Slave 1	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 1	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 1	unsigned16	rw	03E8
1804	0	Nr. of TPDO5 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 2	unsigned32	rw	00000182+ID
	2	Trasmission type 1st TPDO Geflex Slave 2	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 2	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 2	unsigned16	rw	03E8
1805	0	Nr. of TPDO6 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 2	unsigned32	rw	00000282+ID
	2	Trasmission type 2nd TPDO Geflex Slave 2	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 2	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 2	unsigned16	rw	03E8
1806	0	Nr. of TPDO7 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 3	unsigned32	rw	00000183+ID
	2	Trasmission type 1st TPDO Geflex Slave 3	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 3	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 3	unsigned16	rw	03E8
1807	0	Nr of TPDO8 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 3	unsigned32	rw	00000283+ID
	2	Trasmission type 2nd TPDO Geflex Slave 3	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 3	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 3	unsigned16	rw	03E8

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1808	0	Nr of TPDO9 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 4	unsigned32	rw	00000184+ID
	2	Trasmission type 1st TPDO Geflex Slave 4	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 4	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 4	unsigned16	rw	03E8
1809	0	Nr of TPDO10 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 4	unsigned32	rw	00000284+ID
	2	Trasmission type 2nd TPDO Geflex Slave 4	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 4	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 4	unsigned16	rw	03E8
180A	0	Nr of TPDO11 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 5	unsigned32	rw	00000185+ID
	2	Trasmission type 1st TPDO Geflex Slave 5	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 5	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 5	unsigned16	rw	03E8
180B	0	Nr of TPDO12 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 5	unsigned32	rw	00000285+ID
	2	Trasmission type 2nd TPDO Geflex Slave 5	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 5	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 5	unsigned16	rw	03E8
180C	0	Nr of TPDO13 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 6	unsigned32	rw	00000186+ID
	2	Trasmission type 1st TPDO Geflex Slave 6	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 6	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 6	unsigned16	rw	03E8
180D	0	Nr of TPDO14 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 6	unsigned32	rw	00000286+ID
	2	Trasmission type 2nd TPDO Geflex Slave 6	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 6	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 6	unsigned16	rw	03E8
180E	0	Nr of TPDO15 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 7	unsigned32	rw	00000187+ID
	2	Trasmission type 1st TPDO Geflex Slave 7	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 7	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 7	unsigned16	rw	03E8
180F	0	Nr of TPDO16 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 7	unsigned32	rw	00000287+ID
	2	Trasmission type 2nd TPDO Geflex Slave 7	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 7	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 7	unsigned16	rw	03E8

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1810	0	Nr of TPDO17 Communication parameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 8	unsigned32	rw	00000188+ID
	2	Trasmission type 1st TPDO Geflex Slave 8	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 8	unsigned16	rw	03E8
1811	0	Nr of TPDO18 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 8	unsigned32	rw	00000288+ID
	2	Trasmission type 2nd TPDO Geflex Slave 8	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 8	unsigned16	rw	03E8
1812	0	Nr of TPDO19 Communicationparameter	unsigned8	ro	05
	1	COB-ID 1st TPDO Geflex Slave 8	unsigned32	rw	00000189+ID
	2	Trasmission type 1st TPDO Geflex Slave 8	unsigned8	rw	FF
	3	Inhibit time 1st TPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 1st TPDO Geflex Slave 8	unsigned16	rw	03E8
1813	0	Nr of TPDO20 Communication parameter	unsigned8	ro	05
	1	COB-ID 2nd TPDO Geflex Slave 8	unsigned32	rw	00000289+ID
	2	Trasmission type 2nd TPDO Geflex Slave 8	unsigned8	rw	FF
	3	Inhibit time 2nd TPDO Geflex Slave 8	unsigned16	ro	0
	4	Reserved	unsigned16	ro	-
	5	Event timer 2nd TPDO Geflex Slave 8	unsigned16	rw	03E8
1A00	0	Number of TPDO1 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Master	unsigned32	ro	71300110
	2	2nd object mapped for 1st TPDO Geflex Master	unsigned32	ro	20000110
	3	3st object mapped for 1st TPDO Geflex Master	unsigned32	ro	66000108
1A01	0	Number of TPDO2 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave	unsigned32	ro	64100110
	2	2nd object mapped for 2nd TPDO Geflex Slave	unsigned32	ro	74000110
	3	3st object mapped for 2nd TPDO Geflex Slave	unsigned32	ro	66000108
1A02	0	Number of TPDO3 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 1	unsigned32	ro	71300210
	2	2nd object mapped for 1st TPDO Geflex Slave 1	unsigned32	ro	20000210
	3	3st object mapped for 1st TPDO Geflex Slave 1	unsigned32	ro	66000208
1A03	0	Number of TPDO4 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 1	unsigned32	ro	64100210
	2	2nd object mapped for 2nd TPDO Geflex Slave 1	unsigned32	ro	74000210
	3	3st object mapped for 2nd TPDO Geflex Slave 1	unsigned32	ro	66000208
1A04	0	Number of TPDO5 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 2	unsigned32	ro	71300310
	2	2nd object mapped for 1st TPDO Geflex Slave 2	unsigned32	ro	20000310
	3	3st object mapped for 1st TPDO Geflex Slave 2	unsigned32	ro	66000308
1A05	0	Number of TPDO6 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 2	unsigned32	ro	64100310
	2	2nd object mapped for 2nd TPDO Geflex Slave 2	unsigned32	ro	74000310
	3	3st object mapped for 2nd TPDO Geflex Slave 2	unsigned32	ro	66000308

INDEX (hex)	SUB INDEX	DESCRIPTION	DATA TYPE	ACC.	DEFAULT (hex)
1A06	0	Number of TPDO7 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 3	unsigned32	ro	71300410
	2	2nd object mapped for 1st TPDO Geflex Slave 3	unsigned32	ro	20000410
	3	3st object mapped for 1st TPDO Geflex Slave 3	unsigned32	ro	66000408
1A07	0	Nr of TPDO8 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 3	unsigned32	ro	64100410
	2	2nd object mapped for 2nd TPDO Geflex Slave 3	unsigned32	ro	74000410
	3	3st object mapped for 2nd TPDO Geflex Slave 3	unsigned32	ro	66000408
1A08	0	Number of TPDO9 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 4	unsigned32	ro	71300510
	2	2nd object mapped for 1st TPDO Geflex Slave 4	unsigned32	ro	20000510
	3	3st object mapped for 1st TPDO Geflex Slave 4	unsigned32	ro	66000508
1A09	0	Number of TPDO10 Mapping	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 4	unsigned32	ro	64100510
	2	2nd object mapped for 2nd TPDO Geflex Slave 4	unsigned32	ro	74000510
	3	3st object mapped for 2nd TPDO Geflex Slave 4	unsigned32	ro	66000508
1A0A	0	Number of TPDO11 Mapping parameter	unsigned8	ro	03
	1	1st object mapped fo 1st TPDO Geflex Slave 5	unsigned32	ro	71300610
	2	2nd object mapped for 1st TPDO Geflex Slave 5	unsigned32	ro	20000610
	3	3st object mapped for 1st TPDO Geflex Slave 5	unsigned32	ro	66000608
1A0B	0	Number of TPDO12 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 5	unsigned32	ro	64100610
	2	2nd object mapped for 2nd TPDO Geflex Slave 5	unsigned32	ro	74000610
	3	3st object mapped for 2nd TPDO Geflex Slave 5	unsigned32	ro	66000608
1A0C	0	Number of TPDO13 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 6	unsigned32	ro	71300710
	2	2nd object mapped for 1st TPDO Geflex Slave 6	unsigned32	ro	20000710
	3	3st object mapped for 1st TPDO Geflex Slave 6	unsigned32	ro	66000708
1A0D	0	Number of TPDO14 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 6	unsigned32	ro	64100710
	2	2nd object mapped for 2nd TPDO Geflex Slave 6	unsigned32	ro	74000710
	3	3st object mapped for 2nd TPDO Geflex Slave 6	unsigned32	ro	66000708
1A0E	0	Nr of TPDO15 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 7	unsigned32	ro	71300810
	2	2nd object mapped for 1st TPDO Geflex Slave 7	unsigned32	ro	20000810
	3	3st object mapped for 1st TPDO Geflex Slave 7	unsigned32	ro	66000808
1A0F	0	Number of TPDO16 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 7	unsigned32	ro	64100810
	2	2nd object mapped for 2nd TPDO Geflex Slave 7	unsigned32	ro	74000810
	3	3st object mapped for 2nd TPDO Geflex Slave 7	unsigned32	ro	66000808
1A10	0	Number of TPDO17 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 1st TPDO Geflex Slave 8	unsigned32	ro	71300910
	2	2nd object mapped for 1st TPDO Geflex Slave 8	unsigned32	ro	20000910
	3	3st object mapped for 1st TPDO Geflex Slave 8	unsigned32	ro	66000908
1A11	0	Number of TPDO18 Mapping parameter	unsigned8	ro	03
	1	1st object mapped for 2nd TPDO Geflex Slave 8	unsigned32	ro	64100910
	2	2nd object mapped for 2nd TPDO Geflex Slave 8	unsigned32	ro	74000910
	3	3st object mapped for 2nd TPDO Geflex Slave 8	unsigned32	ro	66000908

6.2 DEVICE AND MANUFACTURER PROFILE

SUB-INDEX “n” identifies the GEFLEX pertaining to that CANopen node (ex. 1(dec)=GEFLEX Master, 2(dec)=GEFLEX Slave 1, ...10(dec)=GEFLEX Slave 9).

DEVICE AND MANUFACTURER PROFILE CANopen						GEFLEX MODBUS	
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
bit Controls							
6421	n	Controller in manual	boolean	rw	0	Auto/Man	1
6424	n	Start Selftuning	boolean	rw	0	Selftuning	3
2232	n	Software off	boolean	rw	0	OFF	11
2005	n	Autotuning on	boolean	rw	0	Autotuning	29
2006	n	Enable remote Setpoint	boolean	rw	0	Loc/Rem	10
6420	n	SP1/SP2 selection	boolean	rw	0	SP1/SP2	75
650D	n	Alarm 1 active	boolean	ro	0	Status AL1	4
651D	n	Alarm 2 active	boolean	ro	0	Status AL2	5
652D	n	Alarm 3 active	boolean	ro	0	Status AL3	62
653D	n	Alarm 4 active	boolean	ro	0	Status AL4	69
2008	n	Alarm LBA active	boolean	ro	0	Status LBA	8
2007	n	Alarm HB active	boolean	ro	0	Status HB	26
2009	n	Output 1 active	boolean	ro	0	Status OUT1	12
200A	n	Output 2 active	boolean	ro	0	Status OUT2	13
200B	n	Output 3 active	boolean	ro	0	Status OUT3	14
200C	n	Output 4 active	boolean	ro	0	Status OUT4	15
200D	n	Output 5 active	boolean	ro	0	Status OUT5	16
200E	n	Output 6 active	boolean	ro	0	Status OUT6	17
2010	n	Selftuning active	boolean	ro	0	Status Selftuning	0
2011	n	Autotuning active	boolean	ro	0	Status Autotuning	28
2012	n	Softstart active	boolean	ro	0	Status Softstart	63
2013	n	Digital input active	boolean	ro	0	Status diG	68
2014	n	Probe fault SBR	boolean	ro	0	Status SBR	9
2015	n	Alarm HB active (TA phase 1)	boolean	ro	0	Status HB1	76
2016	n	Alarm HB active (TA phase 2)	boolean	ro	0	Status HB2	77
2017	n	Alarm HB active (TA phase 3)	boolean	ro	0	Status HB3	78
2018	n	Status power alarm	boolean	ro	0	Status PW	80
2019	n	Reset alarms memory	boolean	rw	0	Reset AL	79
201A	n	Hold input active	boolean	rw	0	Hold	64
2080	n	Alarm 1 direct/inverse	boolean	rw	0	AL1 direct	46
2084	n	Alarm 1 absolute/relative	boolean	rw	0	AL1 absolute	47
2088	n	Alarm 1 normal/symmetrical	boolean	rw	0	AL1 normal	48
208C	n	Alarm 1 to disabled on power-up	boolean	rw	0	AL1 disable	49
2090	n	Alarm 1 with memory	boolean	rw	0	AL1 memory	50
2081	n	Alarm 2 direct/inverse	boolean	rw	0	AL2 direct	54
2085	n	Alarm 2 absolute/relative	boolean	rw	0	AL2 absolute	55
2089	n	Alarm 2 normal/symmetrical	boolean	rw	0	AL2 normal	56
208D	n	Alarm 2 to disabled on power-up	boolean	rw	0	AL2 disable	57
2091	n	Alarm 2 with memory	boolean	rw	0	AL2 memory	58
2082	n	Alarm 3 direct/inverse	boolean	rw	0	AL3 direct	36
2086	n	Alarm 3 absolute/relative	boolean	rw	0	AL3 absolute	37
208A	n	Alarm 3 normal/symmetrical	boolean	rw	0	AL3 normal	38
208E	n	Alarm 3 to disabled on power-up	boolean	rw	0	AL3 disable	39
2092	n	Alarm 3 with memory	boolean	rw	0	AL3 memory	40
2083	n	Alarm 4 direct/inverse	boolean	rw	0	AL4 direct	70
2087	n	Alarm 4 absolute/relative	boolean	rw	0	AL4 absolute	71
208B	n	Alarm 4 normal/symmetrical	boolean	rw	0	AL4 normal	72
208F	n	Alarm 4 to disabled on power-up	boolean	rw	0	AL4 disable	73
2093	n	Alarm 4 with memory	boolean	rw	0	AL4 memory	74

DEVICE AND MANUFACTURER PROFILE CANopen						GEFLEX MODBUS	
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
Work registers							
7130	n	Process variable	integer16	ro	-	P.V.	0
2001	n	Process variable	integer16	ro	-	P.V.	0
7401	n	Setpoint active	integer16	ro	-	SPA	1
2002	n	Setpoint active	integer16	ro	-	SPA	1
2020	n	Local Setpoint (see note 1)	integer16	rw	0190	_SP	138
7402	n	Setpoint 1 (see note 1)	integer16	rw	0064	SP.1	230
7403	n	Setpoint 2 (see note 1)	integer16	rw	00C8	SP.2	231
2226	n	Serial remote Setpoint	integer16	rw	-	SP.rS	250
7400	n	Current transformer value	integer16	ro	-	I.tA1on	468
2003	n	Auxiliary input value	integer16	ro	-	I.tA1	227
6410	n	Curent value of control output	integer16	ro	-	Ou.P	2
2004	n	Curent value of control output	integer16	ro	-	Ou.P	2
2030	n	Voltmeter input value phase 1	integer16	ro	-	I.tU1	232
2031	n	Voltmeter input value phase 2	integer16	ro	-	I.tU2	492
2032	n	Voltmeter input value phase 3	integer16	ro	-	I.tU3	493
2033	n	Ammeter input value phase 1	integer16	ro	-	I.tA1on	468
2034	n	Ammeter input value phase 2	integer16	ro	-	I.tA2on	498
2035	n	Ammeter input value phase 3	integer16	ro	-	I.tA3on	499
2040	n	Alarm HB setpoint phase 1	integer16	rw	0064	A.Hb1	55
2041	n	Alarm HB setpoint phase 2	integer16	rw	0064	A.Hb2	502
2042	n	Alarm HB setpoint phase 3	integer16	rw	0064	A.Hb3	503
6412	n	Control output value in manual	integer16	rw	0000	Ou.P	252
750A	n	Alarm 1 setpoint	integer16	rw	01F4	AL.1	12
751A	n	Alarm 2 setpoint	integer16	rw	0258	AL.2	13
752A	n	Alarm 3 setpoint	integer16	rw	02BC	AL.3	14
753A	n	Alarm 4 setpoint	integer16	rw	0320	AL.4	58
201C	n	Process variable after Fld filter	integer16	ro	-	---	349
201D	n	Digital/relays outputs MASKOUT	unsigned16	ro	-	---	319
201E	n	Operating commands instrument STATUS_W	unsigned16	rw	-	---	305
201F	n	Digital inputs value INPUT_DIG	unsigned16	ro	-	---	317
Information registers (InFo)							
2222	n	Software version	unsigned16	ro	-	UPd	122
2223	n	Voltage on load	unsigned16	ro	-	FUSE	509
2224	n	Self-diagnosis error code	unsigned16	ro	-	Err	85
2170	n	Hardware configuration	unsigned16	ro	-	C.Hd	190
2171	n	Expanded HW configuration	unsigned16	ro	-	C.Hd1	508

DEVICE AND MANUFACTURER PROFILE CANopen						GEFLEX MODBUS	
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
Controller configuration registers (CFG)							
2050	n	Enable selftuning, autotuning	unsigned16	rw	0000	S.tu	31
7450	n	Proportional heating band	integer16	rw	000A	h.Pb	5
7452	n	Integral heating time	integer16	rw	0190	h.lt	7
7454	n	Derivative heating time	integer16	rw	0064	h.dt	8
6414	n	Max. limit heating power	integer16	rw	03E8	h.P.H	42
6413	n	Min. limit heating power	integer16	rw	0000	h.P.L.	254
2220	n	Cooling fluid	integer16	rw	0000	C.ME	513
2234	n	Cooling setpoint relative to heating	integer16	rw	0000	c.SP	39
7451	n	Proportional cooling band	integer16	rw	000A	c.Pb	6
7453	n	Integral cooling time	integer16	rw	0190	c.lt	76
7455	n	Derivative cooling time	integer16	rw	0064	c.dt	77
2052	n	Reference voltage for manual power correction	integer16	rw	0000	riF	505
2054	n	Manual power correction	integer16	rw	0000	Cor	506
2060	n	Max. limit cooling power	integer16	rw	03E8	c.P.H	43
2062	n	Min. limit cooling power	integer16	rw	0000	c.P.L.	255
2064	n	Manual reset	integer16	rw	0000	rSt	78
2066	n	Reset power	integer16	rw	0000	P.rS	516
2068	n	Antireset	integer16	rw	0000	A.rS	79
206A	n	Feedforward	integer16	rw	0000	FFd	80
206C	n	Softstart time	integer16	rw	0000	Sof	147
206E	n	Hysteresis for alarm 1	integer16	rw	FFFF	Hy.1	27
2070	n	Hysteresis for alarm 2	integer16	rw	FFFF	Hy.2	30
2072	n	Hysteresis for alarm 3	integer16	rw	FFFF	Hy.3	53
2074	n	Hysteresis for alarm 4	integer16	rw	FFFF	Hy.4	59
2076	n	Delay time HB alarm trip	integer16	rw	001E	Hb.t	56
2078	n	Delay time LBA alarm trip	integer16	rw	012C	Lb.t	44
207A	n	Limit for power supplied with LBA alarm	integer16	rw	00FA	Lb.P	119
207C	n	Fault Action power	integer16	rw	0000	FA.P	228
207E	n	Set gradient	integer16	rw	0000	G.SP	234
207F	n	Set gradient for SP2	integer16	rw	0000	G.S2	259
Hot Runners controller configuration registers (CFG)							
2100	n	Power alarm intervention delay	integer16	rw	0000	P.Ft	260
2102	n	Hot Runners stability band	integer16	rw	0000	b.St	261
2104	n	Hot Runners power alarm band	integer16	rw	0000	b.PF	262
2106	n	Hot Runners Set point soft start	integer16	rw	0064	SP.S	263
2108	n	Hot Runners soft start power	integer16	rw	0000	So.P	264

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INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
Valve controller configuration registers (CFG)							
2110	n	Actuator travel time	integer16	rw	003C	-At-	238
2112	n	Minimum power for valve activation	integer16	rw	0014	t_Lo	239
2114	n	Impulsive intervention threshold	integer16	rw	0000	t_Hi	240
2116	n	Minimum valve pulse time	integer16	rw	0014	t.on	243
2118	n	Valve impulsive intervention off time	integer16	rw	0000	t.off	244
211A	n	Dead Band	integer16	rw	0000	-db-	241
Serial interface configuration parameters (Ser)							
2342	n	Instrument ID code	unsigned16	ro	-	Cod	46
2344	n	Select Modbus baud rate	unsigned16	ro	-	bAu	45
2172	n	Select Modbus parity	unsigned16	ro	-	PAr	47
2174	n	Input management from serial	unsigned16	rw	0000	S.In	224
2218	n	Output management from serial	unsigned16	rw	0000	S.Ou	225
2228	n	Input/output value from serial in RAM	unsigned16	rw	-	V_IN_OUT	344
2230	n	LED value from serial in RAM	unsigned16	rw	-	V_X_LEDS	351
Input configuration parameters (InP)							
2200	n	Define remote Setpoint	unsigned16	rw	0000	SP.r	18
6110	n	Input probe type (note 2)	integer16	rw	2710	Typ	400
221a	n	Auxiliary input probe type	integer16	rw	0000	tP.2	181
2202	n	Digital input filter in seconds	integer16	rw	0001	Flt	24
2204	n	Digital input filter in input scale points	integer16	rw	0005	Fld	179
6132	n	Decimal point position for input scale	integer8	ro	0000	dP.S	403
6407	n	Decimal point position for amper. input	unsigned8	rw	00	dP.S	403
7148	n	Min limit input scale	integer16	rw	0000	Lo.S	401
7149	n	Max limit input scale	integer16	rw	03E8	Hi.S	402
7124	n	Input Offset correction	integer16	rw	0000	oFS	519
2206	n	Digital input filter CT in seconds	integer16	rw	0001	Ft.tA	219
2208	n	Digital input filter VT in seconds	integer16	rw	0001	Ft.tU	412
2210	n	Max limit input CT scale phase 1	integer16	rw	03E8	H.tA1	405
2212	n	Input Offset correction CT phase 1	integer16	rw	0000	o.tA1	220
2240	n	Max limit input CT scale phase 2	integer16	rw	03E8	H.tA2	413
2242	n	Input Offset correction CT phase 2	integer16	rw	0000	o.tA2	415
2244	n	Max limit input CT scale phase 3	integer16	rw	03E8	H.tA3	414
2246	n	Input Offset correction CT phase 3	integer16	rw	0000	o.tA3	416

DEVICE AND MANUFACTURER PROFILE CANopen						GEFLEX MODBUS	
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
Input configuration parameters (InP)							
2214	n	Max limit input VT scale phase 1	integer16	rw	03E8	H.tU1	410
2216	n	Input Offset correction VT phase 1	integer16	rw	0000	o.tU1	411
2248	n	Max limit input VT scale phase 2	integer16	rw	03E8	H.tU2	417
224A	n	Input Offset correction VT phase 2	integer16	rw	0000	o.tU2	419
224C	n	Max limit input VT scale phase 3	integer16	rw	03E8	H.tU3	418
224E	n	Input Offset correction VT phase 3	integer16	rw	0000	o.tU3	420
2241	n	Gain input CT phase 2	integer16	rw	-	G.ta2	529
2245	n	Gain input CT phase 3	integer61	rw	-	G.ta3	530
7404	n	Min settable limit SP and alarms	integer16	rw	0000	Lo.L	25
7405	n	Max settable limit SP and alarms	integer16	rw	03E8	Hi.L	26
221C	n	Min limit auxiliary input scale	integer16	rw	0000	LS.2	404
Output configuration parameters (Out)							
2300	n	Select magnitude ref. alarm 1	unsigned16	rw	0000	A1.r	215
2302	n	Select magnitude ref. alarm 2	unsigned16	rw	0000	A2.r	216
2304	n	Select magnitude ref. alarm 3	unsigned16	rw	0000	A3.r	217
2306	n	Select magnitude ref. alarm 4	unsigned16	rw	0000	A4.r	218
2308	n	Alarm type 1	unsigned16	rw	0000	A1.t	406
2310	n	Alarm type 2	unsigned16	rw	0000	A2.t	407
2312	n	Alarm type 3	unsigned16	rw	0000	A3.t	408
2314	n	Alarm type 4	unsigned16	rw	0000	A4.t	409
2316	n	HB alarm function	unsigned16	rw	0000	Hb.F	57
2318	n	Assign function OUT 1	unsigned16	rw	0000	rL.1	160
2320	n	Assign function OUT 2	unsigned16	rw	0001	rL.2	163
2322	n	Assign function OUT 3	unsigned16	rw	0002	rL.3	166
2324	n	Assign function OUT 4	unsigned16	rw	0003	rL.4	170
2326	n	Assign function OUT 5	unsigned16	rw	0004	rL.5	171
2328	n	Assign function OUT 6	unsigned16	rw	0005	rL.6	172
7456	n	Cycle time OUT 1	integer16	rw	0014	Ct.1	152
7457	n	Cycle time OUT 2	integer16	rw	0014	Ct.2	159
2330	n	Define status of action Fault outputs	unsigned16	rw	0000	rEL	229
232E	n	Percentage of Heat or Cool on Out7	unsigned16	rw	1000	RAP	421
221E	n	Valve control type	unsigned16	rw	0000	At.ty	242

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INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
Hardware configuration parameter (Hrd)							
2332	n	Enable Multiset via serial	unsigned16	rw	0000	hd.1	191
2334	n	Control type	unsigned16	rw	0006	Ctr	180
2336	n	Enable alarms	unsigned16	rw	0001	Al.n	195
2338	n	Digital input function	unsigned16	rw	0000	diG	140
2340	n	Status LED function	unsigned16	rw	0010	Ld.St	197
2346	n	Auxiliary input selection	unsigned16	rw	0000	Al.2	194
2348	n	Hot Runners functions selection	unsigned16	rw	0000	Hot	265
Custom linearization for main input (Lin)							
5000	n	Step 0 start scale value	integer16	rw	0000	S.00	86
5001	n	Step 1 scale	integer16	rw	001F	S.01	87
"	"	"	"	"		"	"
501F	n	Step 31 scale	integer16	rw	02B8	S.31	117
5020	n	Step 32 full scale value	integer16	rw	03E8	S.32	118
5021	n	Step 33 mV start scale for CT probe	integer16	rw	0000	S.33	293
5022	n	Step 34 mV full scale for CT probe	integer16	rw	0000	S.34	294
5023	n	Step 35 mV at TAMB 50°C for CT probe	integer16	rw	0000	S.35	295
Commonly used parameters not described in GEFLEX manual							
2000	n	Instrument work status (note 3)	unsigned16	ro	-	---	467
5A5A	0	Select CANopen baud rate (see note 4)	unsigned8	rw	2		
5A5B	0	Select ID NODE (note 5)	unsigned 32	rw	-		
5A5C	0	Mappable objects in 2nd TXPDO	unsigned8	ro	3	(see CAP. 5)	
	1	Index object 1 in 2nd TPDO	unsigned16	rw	6410		
	2	Index object 2 in 2nd TPDO	unsigned16	rw	7400		
	3	Index object 3 in 2nd TPDO	unsigned16	rw	6600		
5A5D	0	Watch dog rete CANBUS (note 6)	unsigned16	rw	1388		
5A5E	0	Mappable objects in 1st RXPDO	unsigned8	ro	2	(see CAP. 5)	
	1	Index object 1 in 1st RPDO	unsigned16	rw	750A		
	2	Index object 2 in 1st RPDO	unsigned16	rw	751A		
1029	0	Nr. of Error behaviour objects	unsigned8	ro	7	see CiA DS404	
	1	Communication Error	unsigned16	rw	-		
	2	Digital Input Error	unsigned16	rw	0000		
	3	Analog Input Error	unsigned16	rw	-		
	4	Digital Output Error	unsigned16	rw	0000		
	5	Analog Output Error	unsigned16	rw	0000		
	6	Controller Error	unsigned16	rw	0000		
	7	Alarm Error	unsigned16	rw	0000		
7133	n	Max variation PV for PDO "Event"	integer16	rw	0000	see CiA DS404	

DEVICE AND MANUFACTURER PROFILE CANopen						GEFLEX MODBUS	
INDEX (hex)	SUB INDEX	DESCRIPTION	DATA	ACC.	DEFAULT (hex)	FUNCTION	ADD. (dec)
<i>Commonly used parameters not described in GEFLEX manual</i>							
6406	n	Physical unit ammeter input value	unsigned32	ro	002D0000	see CiA DS404	
6415	n	Physical unit power output value	unsigned32	ro	00000000	see CiA DS404	
6422	n	Controller ON/OFF	boolean	rw	1	see CiADS404	
6425	n	Operating commands enable (note 7)	unsigned8	rw	0	see CiA DS404	
6509	n	Action performed with alarm AL1 active	unsigned8	ro	02	see CiA DS404	
6519	n	Action performed with alarm AL2 active	unsigned8	ro	02	see CiA DS404	
6529	n	Action performed with alarm AL3 active	unsigned8	ro	02	see CiA DS404	
6539	n	Action performed with alarm AL4 active	unsigned8	ro	02	see CiA DS404	
6600	n	Status of alarms AL1 - AL4	unsigned8	ro	-	see CiA DS404	
6427	n	Controller status (note 8)	unsigned16	ro	-	see CiA DS404	

note 1: If the Enable multiset "hd.1" (index 2332) parameter equals 0 (default), the active Setpoint "SPA" (index 2002) corresponds to the local Setpoint "_SP" (index 2020).
If the Enable multiset "hd.1" (index 2332) parameter equals 1 or 3, the active Setpoint "SPA" (index 2002) corresponds to Setpoint 1 (index 7404) or Setpoint 2 (index 7403).

note 2: The input probe type "TyP" is made Gefran-specific by adding 10,000 to the values described in the GEFLEX Modbus manual (ex. CT J °C = 2710hex, CT J °F = 2711hex, PT100 °C = 272Ehex).

note 3: The 2000 index defines instrument work status by means of the following bits:

- 0 Alarm AL1 or AL2 or AL3 or AL4 or ALHB active
- 1 Alarm Lo active (process variable value < min. limit "Lo.S")
- 2 Alarm Hi active (process variable value > max. limit "Hi.S")
- 3 Alarm ERR active (third wire interrupted due to PT100 or incorrect CT connection)
- 4 Alarm SBR active (probe interrupted)
- 5 Controller heating (HEAT)
- 6 Controller cooling (COOL)
- 7 Alarm LBA active (control loop error)
- 8 Alarm AL1 active
- 9 Alarm AL2 active
- 10 Alarm AL3 active
- 11 Alarm AL4 active
- 12 Alarm ALHB active
- 13 Controller in software shutdown (OFF)
- 14 Controller in manual (MAN)
- 15 Controller in remote Setpoint (REM)

note 4: The change in the value of index 5A5A is acquired at the next power-up.

Table of CANopen baud rate values:

- 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 5: Default reads the value of the rotary switch (from 0x0A to 0x5A with step 0x0A).

You can set from 0x01 to 0x7F with SDO.

Write 0xFF000000 to reset the rotary switch read.

note 6: Value expressed in msec.

If there are no messages in the CANBUS network for this time, the GEFLEX allows connection of the GFX OP terminal to the internal bus.

note 7: According to CiA DS404 valid bits are:

0	Controller ON/OFF	(1 = ON)
1	Start Selftuning	(1 = Start Selftuning)
2	Manual controller	(1 = Manual)
3	SP1/SP2 selection	(1 = SP2)

note 8: Only bits 0 (Controller ON/OFF) and 2 (Manual code) are valid.