SUMMARY

1. GENERAL INFORMATION

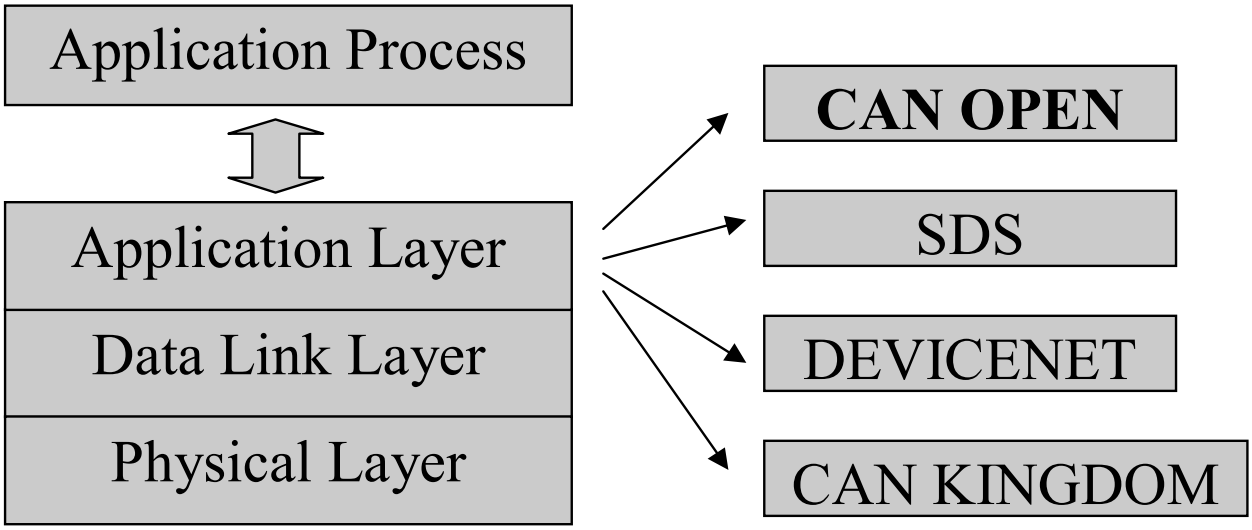
The acronym CAN means Controller Area Network. With the Can Bus net it is possible to exchange information between Slaves and a Master. In this kind of net the Master is utilized to configure the net and to check the correct operations of the Slaves.
The maximum number of nodes in the Can Bus net is: n° max_node = 127.
Typical values of transmission speed for real time applications are from 200 KBit/s to 1MBit/s; the DMBL works by default with a transmission speed of 500KBit/s. The transmission speed is related to the maximum transmission cable length.

Baudrate	Distance
250 KBit/s	260/270 m
500 KBit/s	120/130 m
1 MBit/s	30/40 m

In the Can Bus net an address doesn't identify a precise station, but in the transmitted message is contained an identifier, that marks the content of the communication and determines the priority of the message. This message is processed by all the slaves enabled to accept it.

1.1. CAN BUS LAYERS (ISO/OSI REFERENCE)

The Can Bus refers to a standard communication architecture(ISO/OSI), which is based on seven layers each of them has its own function. Mainly for speed problems, the Can Bus communication architecture uses only three layers of the standard architecture, and precisely the Physical layer, the Data Link layer and the Application layer.



The Application layer interfaces itself with the different application processes e.g.: Drives, board of I/O etc…
The Physical layer decides the physical transmission meaning, e.g. duplex twisted and shielded pair cable e/o, optical fiber and others, specifying its characteristics.
The Data Link layer doesn't attend to the data type, but it takes care of their transmission, because the transmission takes place in safe way and according to the Can Bus net protocol.
The Application layer develops the interface with the user applications, and can be of different kinds, that can be distinguished mainly in Can-Open, Sds, DeviceNet and Can Kingdom and others……
The DMBL drives implements as Application layer Can-Open, that it is based on the CAL (Can Application Layer).

1.2. MECHANISMS OF DATA EXCHANGE

The mechanisms of data exchange in the Can Bus net are essentially two: the Service Data Object Communication (SDO) and Process Data Object Communication (PDO). Their main characteristics are: priority, number of data bytes and transfer type.

Service Data Object (SDO)	Process Data Object (PDO)
• Low priority, high volume of data	• High priority, low volume of data
• Possibility to access all objects through index and subindex addressing.	• Objects are direct-mapped into message bytes.
• Data transfers greater than 8 bytes of data using multiple CAN telegrams via CMS.	• Data transfers up to 8 bytes of data using a single CAN telegram

1.3. HARDWARE SPECIFICATIONS

The DMBL drive has two connectors D-SUB 9 (male) for the net connection. The pinout of those connector is as follows:

Pin	Signals	Description
1	-	
2	CAN_L	Can low dominant
3	CAN_GND	Can Ground
4	-	
5	CAN_SHLD	Can Shield
6	-	
7	CAN_H	Can high dominant
8	-	
9	CAN_V+	Can external supply (positive)

Termination res: 120Ω 1/4W
Ext. supply: 18 … 30 V
It is strognly recommended the use of Belden 3082A cable or similar.

There is also a D-SUB 9 (female) connector for the flash memory programming: through this connector is possible to connect the board to a PC RS232 serial port (COM1, COM2, …) to upload to the converter the Can Bus node configuration.

1.4. SOFTWARE SPECIFICATIONS

The CanBus node configuration is loaded in a flash memory inside the converter. During the normal operation it is possible, through serial connection to a PC, to modify the Can Bus node configuration. These changes will become active at the next board startup. The use of the configuration program **configure.exe** is explained later. The configuration fields are:

- **NODEID:** Is the node identifier, it's used to fulfil certain services (es. Start, Stop, Node Guarding...). The default value is 10.

- **BAUDRATE:** It is the transmission speed expressed in Bit/s, during the configuration it is possible to choose between 10000 and 1000000 Bit/ses. The default value is 500000 Bit/s.

- **PDO Identifier:** The DMBL has the possibility to use from 1 to 4 PDOs, and for each one it is possible to indicate an identifier value. An example of possible values according to standard Can-Open is:

PDO1(rx)	513-639
PDO1(tx)	385-511
PDO2(rx)	769-895
PDO2(tx)	641-767

- **SDO Identifier:** The DMBL has the possibility to use from 1 to 4 SDOs, and for each one it is possible to indicate an identifier value. An example of possible values in according to standard Can-Open is:

SDO(rx)	1537-1663
SDO(tx)	1409-1535

- **PDO Communication Parameters:** These parameters define the data transmission type, for instance if the transmission takes place repeatedly following a certain period of time or if it takes place after receiving a certain message (called SYNC).

- **PDO Mapping:** In this phase the objects (e.g..parameters of the drive), that must be transmitted through PDO, are defined. The objects are inside a " dictionary " and they are individualized through an index and a sub-index, therefore for mapping we mean the association between a PDO and an index and a sub-index of the parameters.

1.5. MEASURED TRANSMISSION TIMES

For the PDOs, the elaboration time is 1,3ms, while for SDO case the elaboration time is 3,2ms.

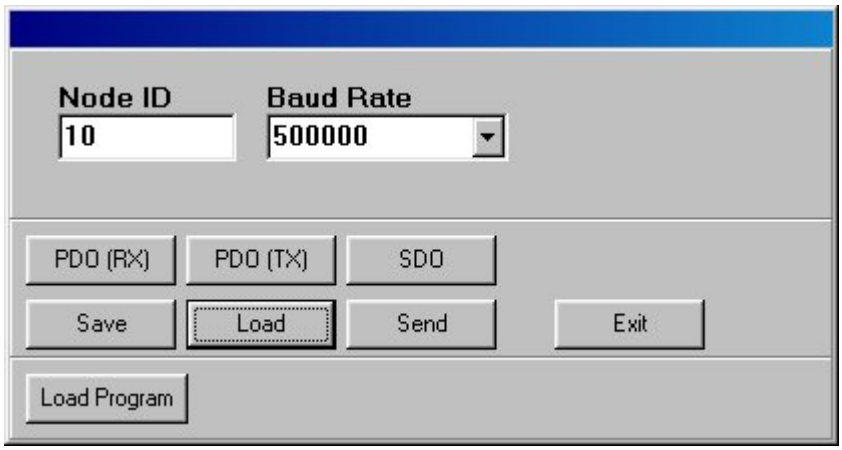
2. DRIVE CONFIGURATION

2.1. CONFIGURATION OF THE NODE

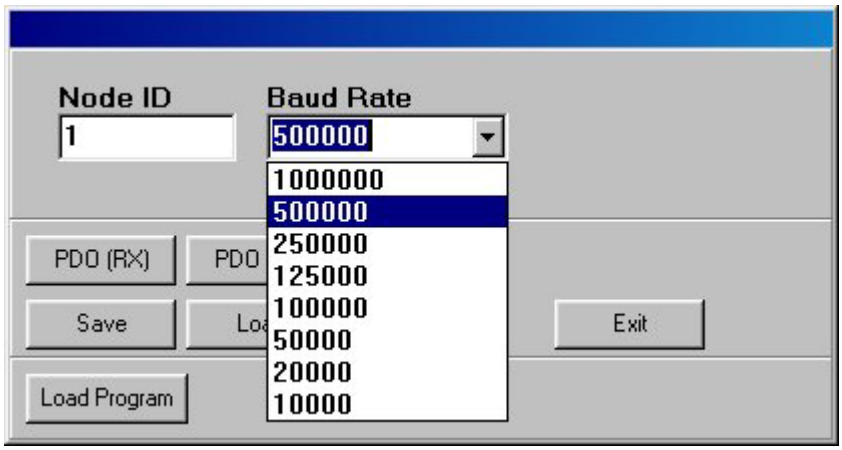
The program used to configure the drive as a CANBUS node is “configure.exe”; this program allows: setting node ID, baud rate, Tx PDOs, Rx PDOs and SDOs for the CanOpen interface. It is mandatory to configure node ID, baud rate and default SDOs.
The configuration connector (D-Sub 9 female) is a normal RS232:

Pin	Signals
2	Tx
3	Rx
5	Gnd

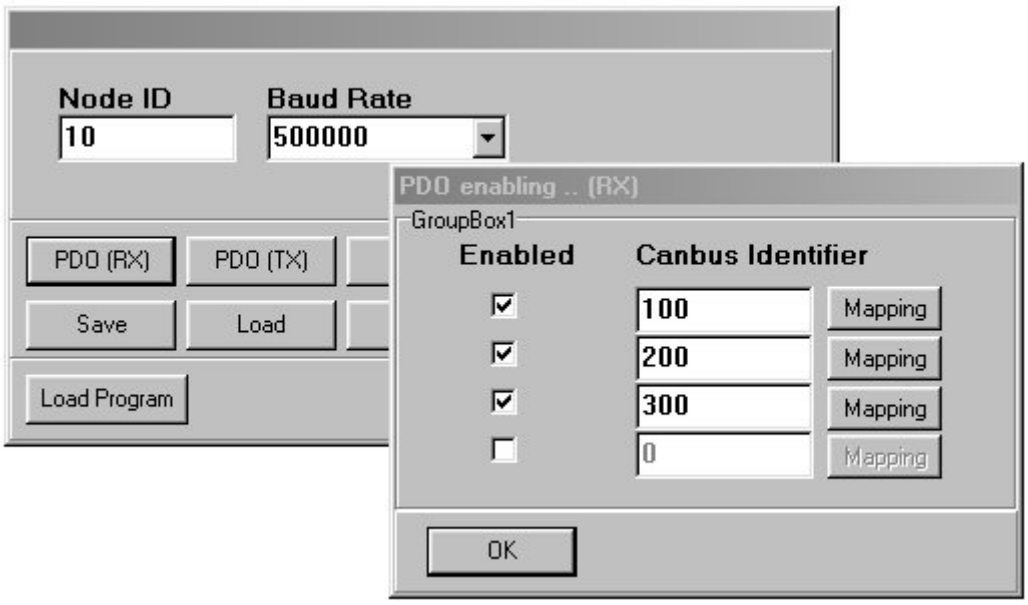
This is the startup window:



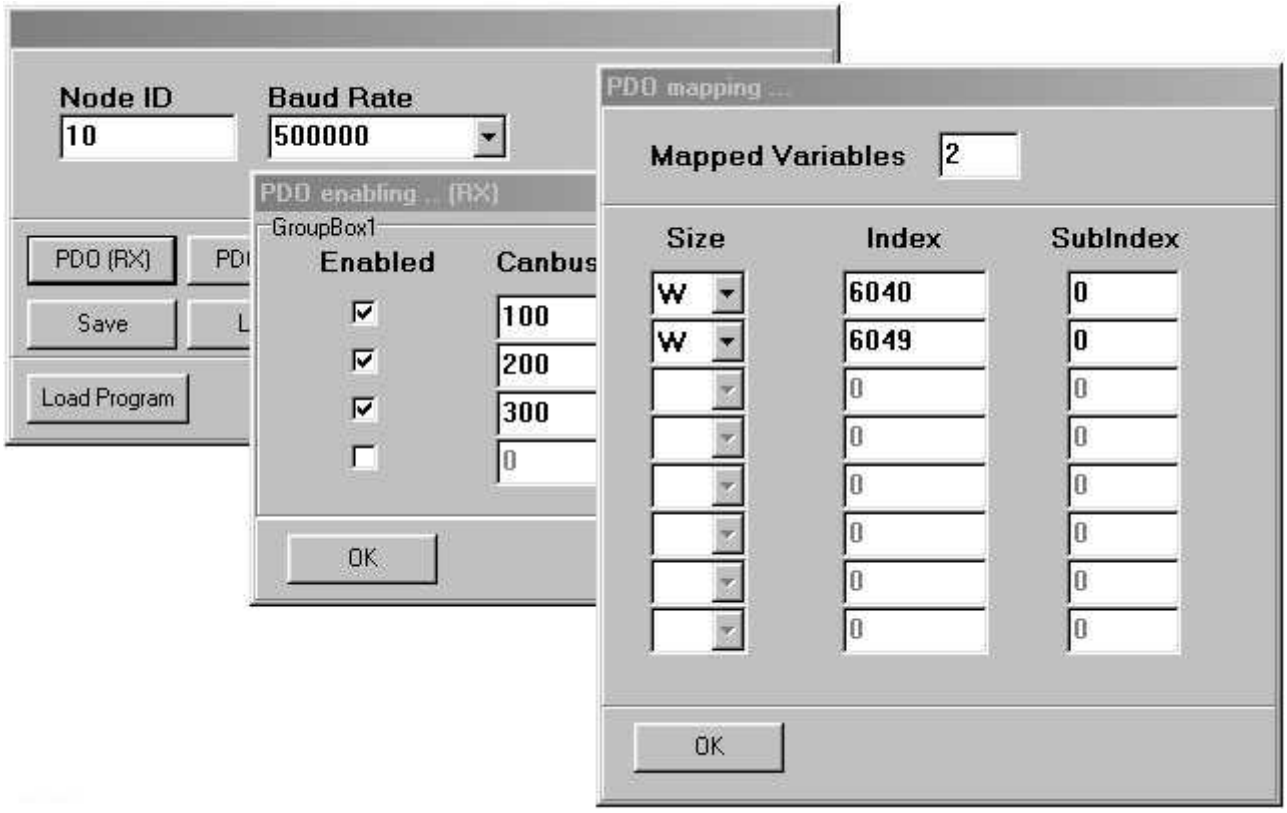
It is mandatory to set the node ID and the baud rate:



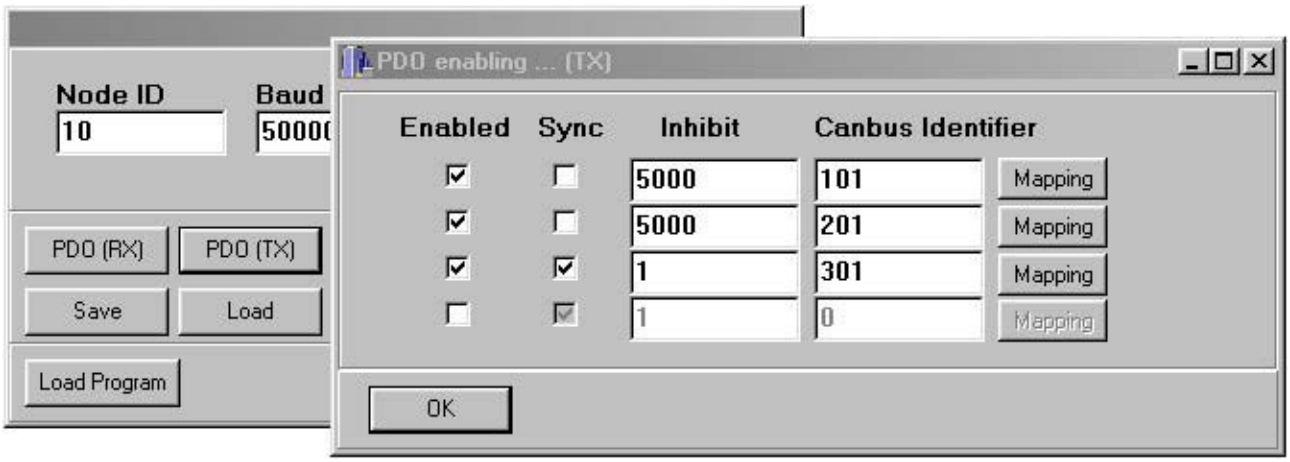
Clicking the “PDO (RX)” button pops up the window to enable the PDOs settings:



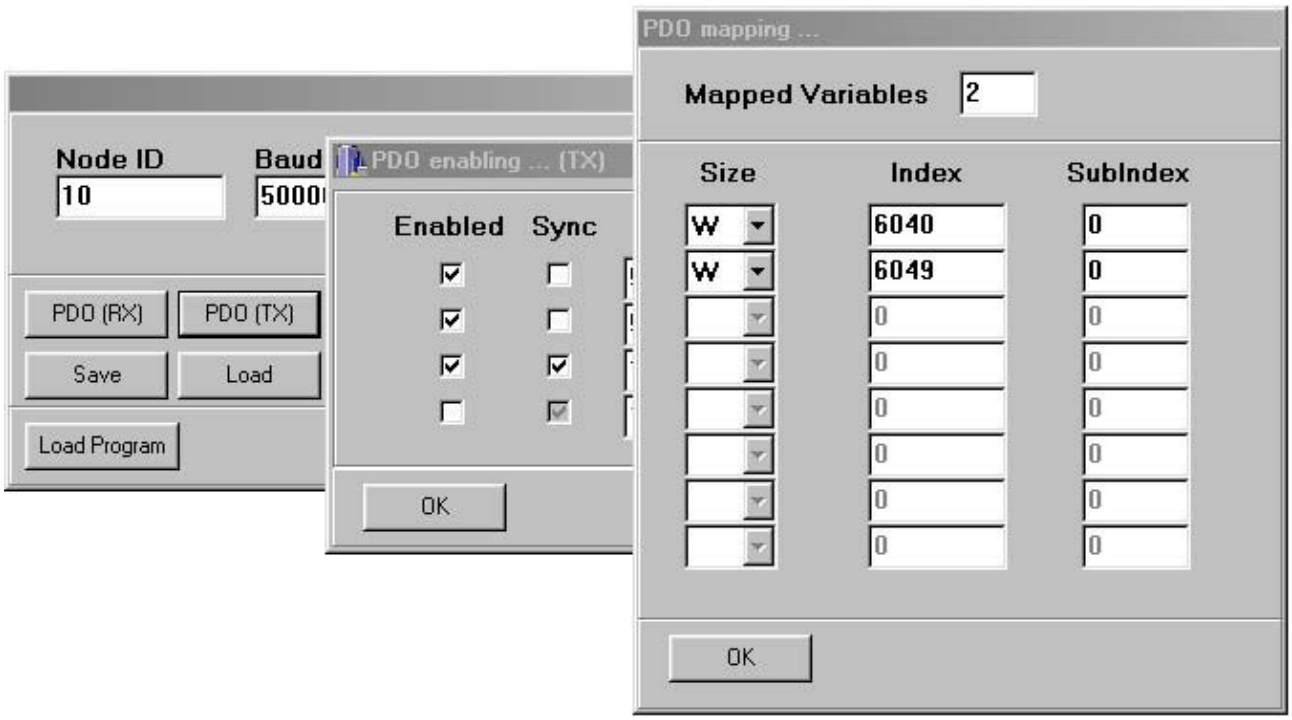
The PDOs can be mapped clicking the “mapping” button. The object dictionary is specified afterwards.



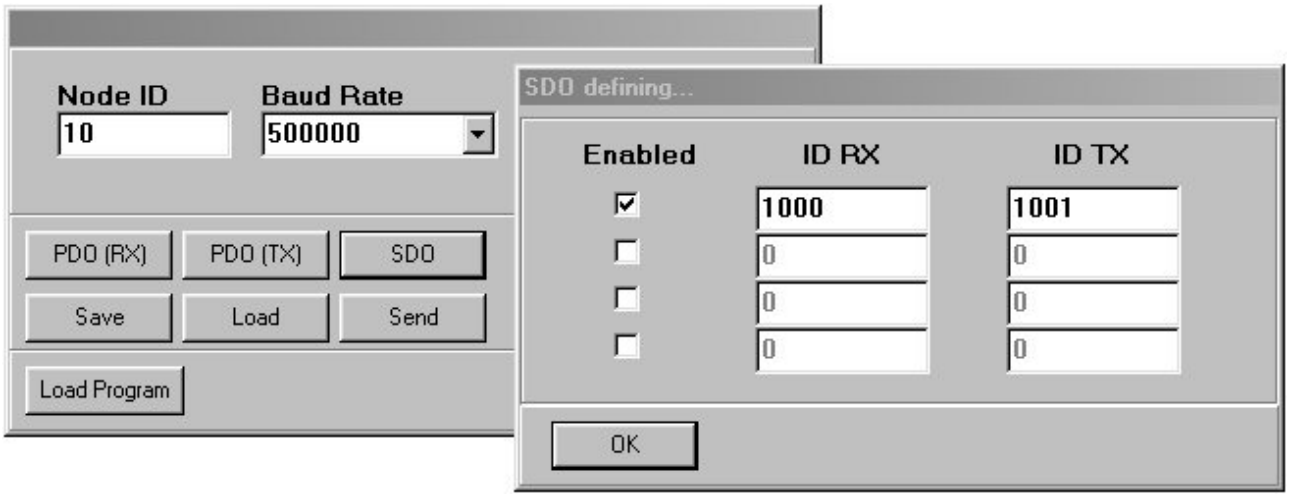
Clicking the “PDO (TX)” button pops up the window to enable PDOs settings. If the Sync option the corresponding PDO is transimitted when a Sync message (ID = 128) is received, else is transmitted cyclically, with the period set in the “inhibit” field (1=100 microseconds). If the Sync option is enabled, the Inhibit time is ignored.



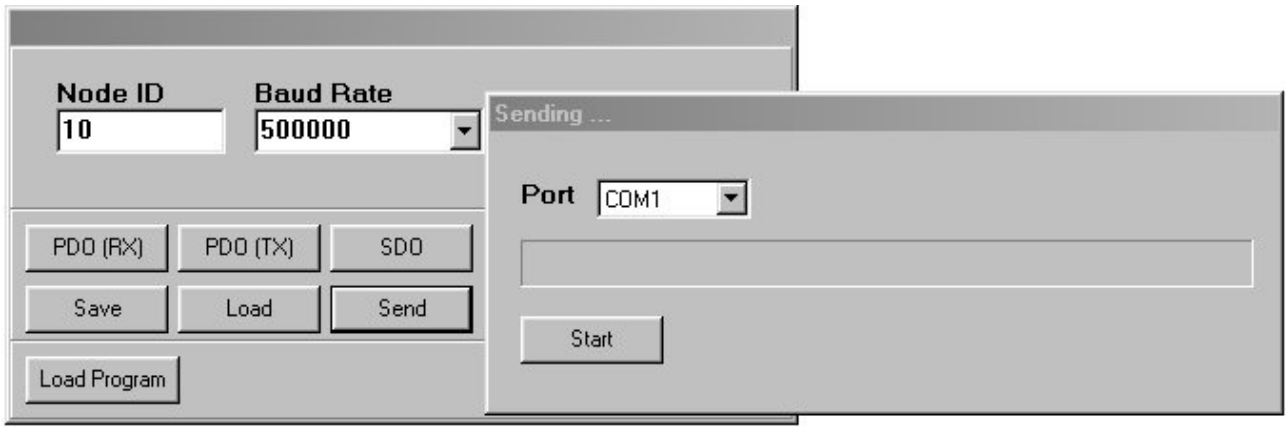
The PDOs can be mapped clicking the “mapping” button:



Clicking the “SDO” button pops up the window to enable SDOs settings:



When the settings are complete, the configuration can be uploaded to the drive, clicking the “Send” button.



Configurations can be saved and loaded from the PC hard disk through commands “Save” and “Load”.

2.2. ENABLING THE COMMUNICATION

In order to communicate with the CANBUS net the drive must be configured setting the connection c59 as follows:

c59	description
0	CANBUS net excluded
1	CANBUS net read only
2	read/write allowed

The connection c59 is protected by the customer code number, thus set P50 = 95 before.

3. OBJECT DICTIONARY

3.1. TYPES OF PARAMETERS

	Type	Description
P	Parameters	Numerical values
c	Connections	Logic switches with 2 or more contacts. They are used to select among more possibilities.
d	Displays	Internal drive values (voltage, current, speed,…)
A	Alarms	Diagnostics of the drive
i	Inputs	State of logic inputs and of logic functions
o	Outputs	State of logic outputs and of logic functions

3.2. MEANS OF THE TABLE FIELDS

Column **"PAR"** contains the parameter name as it is displayed on the keypad.
Column **"DESCRIPTION"** contains a brief description of the parameter.
Column **"RANGE**" contains maximum and minimum limits, and the units of the parameter.
Column **"BS"** contains a letter or a number :

- A letter means that the parameter is a number "x" whose value is a percent of a base scale number.

from internal number to percent value	from percent value to internal number
percent value = 100 * x / base scale	x = percent value * base scale /100

base scale table

letter	description
A	Base scale = 16383
B	Base scale = 4095

- A number means that the parameter is a number "x" whose value is scaled by a power of 10 :

from internal number to real value	from real value to internal number
real value = $x/10^n$	x = real value * 10^n

conversion ratio table

number	description
0	n = 0 par=x
1	n = 1 par=x/10
2	n = 2 par=x/100

Column **"Note"** contains the informations about the writing protections of parameters:

- n = parameter value can be changed only if drive is off-line
- r = parameter value can be changed only if the customer code number is set in **P50**
- t = parameter value can be changed only if the TDE MACNO code number is set in **P80**

Parameter **P99** contains the customer code number (**P50**). On demand this code can be customized.

Columns **"Can Idx"** and **"Can SubIdx"** contain the index of the parameter (object) in the object dictionary. This index are used for SDO access and for PDO mapping.

Column **"Size"** contains the size of the object: this information must be specified in the PDO mapping.

3.3. PARAMETERS "P"

P	DESCRIPTION	RANGE	BS	NOTE	Can Idx	Can SubIdx	Size
1	JOG 1 speed	±100.0%	A		6601	00	Word
2	JOG 2 speed	±100.0%	A		6602	00	Word
3	JOG 3 speed	±100.0%	A		6603	00	Word
4	Analogue speed reference offset 1/100000 parts on speed reference	±19999	0		6604	00	Word
5	Max CW speed limit	0÷105.0%	A		6605	00	Word
6	Max CCW speed limit	0÷105.0%	A		6606	00	Word
7	Position for curve 1 (encoder pulses)	±19999	0		6607	00	Word
8	Position for curve 2 (encoder pulses)	±19999	0		6608	00	Word
9	Offset (encoder pulses) with respect to resolver zero	±19999	0		6609	00	Word
10	Gain for positioning (kv)	0÷100	0		660A	00	Word
11	CW acceleration time	50÷19999 ms	0		660B	00	Word
12	CW deceleration time	50÷19999 ms	0		660C	00	Word
13	CCW acceleration time	50÷19999 ms	0		660D	00	Word
14	CCW deceleration time	50÷19999 ms	0		660E	00	Word
15	Rate for curve 1 by external input (encoder pulses)	±19999	0		660F	00	Word
16	Rate for curve 2 by external input (encoder pulses)	±19999	0		6610	00	Word
17	Rate for curve 1 (in turns number)	±19999	0		6611	00	Word
18	Rate for curve 2 (in turns number)	±19999	0		6612	00	Word
19	Time for switch off ramp	0÷2000	0		6613	00	Word
20	speed level for enabling P23, P24	0÷200.0 %	B		6614	00	Word
21	Speed loop proportional gain when |speed|+|REF|< P20	0.5÷100.0	1		6615	00	Word
22	Speed loop lead time constant when |speed|+|REF|< P20	4.0÷150.0 ms	1		6616	00	Word
23	Speed loop proportional gain when |speed|+|REF|≥P20	0.5-100.0	1		6617	00	Word
24	Speed loop lead time constant when |speed|+|REF|≥P20	4.0-150.0 ms	1		6618	00	Word
25	Speed loop filter time constant	0.4÷20 ms	1		6619	00	Word
27	Starting value of speed regulator integral	±100.0%	B	n	661A	00	Word
31	Torque signal offset (T.REF)	±100.0%	B		661F	00	Word
32	Torque correction signal constant	±400.0%	B		6620	00	Word
33	Current limit signal offset (I.LIM)	±100.0%	B		6621	00	Word
34	Limit signal correction coefficient	±400.0%	B		6622	00	Word
35	Max CW current limit	0÷100.0%	B		6623	00	Word
36	Max CCW current limit	0÷100.0%	B		6624	00	Word
41	Minimum speed level	0÷100.0%	B		6629	00	Word
42	Maximum allowed speed level	0÷120.0%	B		662A	00	Word
43	Lower level speed range for speed relay	±100.0%	B	n	662B	00	Word
44	Upper value speed range for speed relay	±100.0%	B	n	662C	00	Word
45	Lower value current range for speed relay	±100.0%	B	n	662D	00	Word
46	Upper value current range for speed relay	±100.0%	B	n	662E	00	Word
49	Sample time (scope function)	1÷1000 ms	0		6631	00	Word
50	Customer code number for reserved parameter (r)	0÷9999	0	n	6632	00	Word
51	Drive identification number for the serial line	1÷255	0	r	6633	00	Word
52	Setting maximum motor speed (rpm)	375÷19000	0	r	6634	00	Word
53	Number of motor poles	2÷12	0	r	6635	00	Word
54	Number of resolver poles	2÷12	0	r	6636	00	Word
55	Resolver phase (degrees)	±180.0	1	r	6637	00	Word
56	Motor rated current in % of drive rated current	10.0%÷100.0%	B	r	6638	00	Word
57	Motor thermal constant time TH	1.0÷600.0 sec.	1	r	6639	00	Word
58	Motor inductance in mH x rated motor current / motor voltage	0.0-100.0%	B	r	663A	00	Word
59	Ti=Lff/Rff ms	1-100	0	r	663B	00	Word
60	External voltage reference corresponding to the maximum motor speed (mV)	2500÷10000	0	r	663C	00	Word
61	Encoder frequency reference coefficient	0÷16383	0		663D	00	Word
62	Vnmot/Vnaz	0.0%-100.0%	B	r	663E	00	Word
63	Correction coefficient Kq1 e Kd1 %	0.0%-400.0%	B	r	663F	00	Word
71	Enc. pulse ratio numerator	19999	0		6647	00	Word
72	Enc. pulse ratio denominator	19999	0		6648	00	Word
75	o22 advance (enc. pulses)	0÷19999	0	r	665A	00	Word
76	o23 advance (enc. pulses)	0÷19999	0	r	665B	00	Word
77	Final speed for movement 1	1.0%÷100.0%	A		665C	00	Word
78	Final speed for movement 2	1.0%÷100.0%	A		665D	00	Word
79	Serial line Baud rate	0÷2	0		665E	00	Word

PAR	DESCRIPTION	RANGE	BS	NOTE	Can Idx	Can SubIdx	Tipo
80	TDE reserved parameter access key	0÷9999	0	n	665F	00	Word
81	Analog ref. correction coefficient	50.0%÷199.0%	B	t	6660	00	Word
82	Current correction coefficient	100.0%÷200.0 %	B	t	6661	00	Word
83	Drive rated correction in % of the current limit	20.0%÷100.0%	B	t	6662	00	Word
84	Drive limit reenter time constant	1.0÷10 sec.	1	t	6663	00	Word
85	DC bus voltage measurement coeff.	50.0%÷200.0%	B	t	6664	00	Word
86	DC bus minimum voltage	60.0%÷130.0%	B	t	6665	00	Word
87	DC bus maximum voltage (% P92)	50.0%-120.0%	B	t	6666	00	Word
92	Clamping voltage (% DC BUS rated voltage)	65.0%÷150.0%	B	T	666B	00	Word
94	Choice 0=Vel/ 1=Corr	0-1	0	T	666D	00	Word
95	Torque current (P64=1)	0.0%-100.0%	B	T	666E	00	Word
99	Customer code number for reserved parameters (r)	0÷9999	0	T	6672	00	Word

3.4. CONNECTIONS

CON.	DESCRIPTION	RANGE	NOTE	Can Idx	Can SubIdx	Size
1	Logic input 1 meaning	1-21	r	6512	00	Byte
2	Logic input 2 meaning	0	r	6513	00	Byte
3	Logic input 3 meaning	1-21	r	6514	00	Byte
4	Logic input 4 meaning	1-21	r	6515	00	Byte
5	Logic input 5 meaning	1-21	r	6516	00	Byte
6	Logic input 6 meaning	1-21	r	6516	00	Byte
7	Logic output 1 meaning	0-16	r	6518	00	Byte
8	Logic output 2 meaning	0-16	r	6519	00	Byte
9	External speed ref. Inversion	0 (not inverted) 1(inverted)	r	651A	00	Byte
10	Simulated encoder channel B inversion	0 (not inverted) 1 (inverted)	r	651B	00	Byte
11	Choice pulse/rev. Resolver for simulated encoder	0-7	r	651C	00	Byte
12	Choice zero simulated encoder phase	0-3	r	651D	00	Byte
13	Meaning A.P.O. 1	0-19		651E	00	Byte
14	Choice external reference	0 (analogue) ; 1 (freq 4 tracce); 2 (freq & up / down)	r	651F	00	Byte
15	Meaning logic input 7	1-21	r	6520	00	Byte
16	Meaning logic input 8	1-21	r	6521	00	Byte
17	Meaning A.P.O. 2	0-19	r	6522	00	Byte
18	Meaning logic output 3	0-16	r	6523	00	Byte
19	Excl. alarms A3-A4-A5-A7-A9	0-31	r	6524	00	Byte
20	Exclus. Integral on speed regulator	0 (not excluded) 1 (excluded)	n	6525	00	Byte
21	Software on line	0(stop) 1(run)		6526	00	Byte
22	Parallel bit to REF1	0(OFF) 1(ON)		6527	00	Byte
23	Parallel bit to REF2	0(OFF) 1(ON)		6528	00	Byte
24	Parallel bit to LS1	0(OPEN) 1(CLOSED)		6529	00	Byte
25	Parallel bit to LS2	0(OPEN) 1(CLOSED)		652A	00	Byte
26	Ramp inclusion	0(excluded) 1(included)		652B	00	Byte
27	Stop with or without min. speed	0(disabled) 1(enabled)		652C	00	Byte
28	Stop on limit switches with or without ramp	0(with) 1(without)		652D	00	Byte
29	Software drive consent	0(alarm) 1(no alarm)		652E	00	Byte
30	Reset alarms	0(disabled) 1(reset)		652F	00	Byte
31	External current limit enable (in series to external enable)	0(disabled) 1(enabled)		6530	00	Byte
32	Enable torque input	0(disabled) 1(enabled)		6531	00	Byte
33	relative or absolute speed data	0(relative) 1(absolute)		6532	00	Byte
34	Motor thermal devices causes drive block	0(do not stop) 1(stop)		6533	00	Byte
35	Position / Speed	0=Speed ; 1=Pos.	r	6534	00	Byte
36	Start Pos.1	0=not active ; 1=active		6535	00	Byte
37	Start Pos.2	0=not active ; 1=active		6536	00	Byte
38	Zero search direction	0=CCW, LS2 ; 1=CW, LS1	n	6537	00	Byte
39	Relative rates Actual/Absolute position	0 = Actual Position / 1 = Absolute Position		6538	00	Byte

CON.	DESCRIPTION	RANGE		Can Idx	Can SubIdx	Tipo
40	SW Zero search command	0=not active ; 1=active		6539	00	Byte
41	Reset default values	0(disabled) 1(reset)	n	653A	00	Byte
42	Reset EEPROM values	0(disabled) 1(reset)	n	653B	00	Byte
43	EEPROM writing	0(disabled) 1(reset)	n	653C	00	Byte
44	Resolver phase auto-tuning command	0(disable) 1(perform)	r	653D	00	Byte
45	Current regulator auto-tuning command	0(disable) 1(perform)	r	653E	00	Byte
51	Quantity displayed in run state	1÷20 (0 = 'run')		6544	00	Byte
52	Sensor	0 (not active) 1 (active)		6545	00	Byte
53	Mains failure managing switch	0÷2	r	6546	00	Byte
54	Double speed positioning	0÷2	n	6547	00	Byte
55	Zero search starting mode	0÷1	n	6548	00	Byte
56	Zero search mode	0÷2	n	6549	00	Byte
57	serial protocol	0÷1	r	654A	00	Byte
58	*** reserved					
59	Canbus communication selection	0÷2	r	654C	00	Byte

3.5. DISPLAYS "D"

	INTERNAL VALUES	RANGE	BS	Can Idx	Can SubIdx	Tipo
0	Sofware version		2	6575	00	Word
1	External speed reference %	±100.0%	A	6576	00	Word
2	Speed ref. before the ramp %	±100.0%	A	6577	00	Word
3	Speed ref. after the ramp %	±100.0%	A	6578	00	Word
4	Speed feedback %	±100.0%	B	6579	00	Word
5	Motor speed in r.p.m. %	0÷19000	0	657A	00	Word
6	Integral part of the speed regulator %	±100.0%	B	657B	00	Word
7	Value of the external torque signal %	±100.0%	B	657C	00	Word
8	External current limit %	0÷100.0%	B	657D	00	Word
9	Current limit CW %	0÷100.0%	B	657E	00	Word
10	Current limit CCW %	0÷(-100.0)%	B	657F	00	Word
11	Actual current %	±100.0%	B	6580	00	Word
12	DC BUS Voltage (V)	0÷999	0	6581	00	Word
13	Actual position (encoder pulse)		0	6582	00	Word
14	Resolver position (encoder pulse)	± ½ pulses c11	0	6583	00	Word
15	Torque current Iq	±100.0%	B	6584	00	Word
16	Direct current Id	±100.0%	B	6585	00	Word
17	Torque voltage Vq	±100.0%	B	6586	00	Word
18	Direct voltage Vd	±100.0%	B	6587	00	Word
19	Motor voltage Vm	0÷100.0%	B	6588	00	Word
20	Actual position (High word)		0	6589	00	Word
21	Actual position expressed by ratio P71/P72		0	658A	00	Word

3.6. ALARMS "A"

	ALARMS	STATE (H=0N L=OFF)	Can Idx	Can SubIdx	Tipo
1	/		6595	00	Bit0
2	RAM, EEPROM alarm	L-H	6595	00	Bit1
3	Power failure	L-H	6595	00	Bit2
4	Radiator thermal switch	L-H	6595	00	Bit3
5	Motor thermal switch	L-H	6595	00	Bit4
6	Motor thermal protection	L-H	6595	00	Bit5
7	Resolver failure	L-H	6595	00	Bit6
8	External alarm	L-H	6595	00	Bit7
9	Overspeed	L-H	6596	00	Bit0
10	Power supply minimum voltage	L-H	6596	00	Bit1
11	Power supply overvoltage	L-H	6596	00	Bit2
12	Input configuration error	L-H	6596	00	Bit3
13	Pole setting error	L-H	6596	00	Bit4
14	Mains supply connections error	L-H	6596	00	Bit5
15	Mains supply failure	L-H	6596	00	Bit6
16	/		6596	00	Bit7

	LOGIC INPUTS	STATE (H=ON L=OFF)	Can Idx	Can SubIdx	Tipo
1	Logic input iL1 state	L-H	6598	00	Bit0
2	Logic input iL2 state	L-H	6598	00	Bit1
3	Logic input iL3 state	L-H	6598	00	Bit2
4	Logic input iL4 state	L-H	6598	00	Bit3
5	Logic input iL5 state	L-H	6598	00	Bit4
6	Logic input iL6 state	L-H	6598	00	Bit5
7	Logic input iL7 state	L-H	6598	00	Bit6
8	Logic input iL8 state	L-H	6598	00	Bit7
9	On-line signal state	L-H	6599	00	Bit0
10	Torque enable signal state	L-H	6599	00	Bit1
11	External enable signal state	L-H	6599	00	Bit2
12	Ref 1 enable signal state	L-H	6599	00	Bit3
13	Ref 2 enable signal state	L-H	6599	00	Bit4
14	Limit switch 1 signal state	L-H	6599	00	Bit5
15	Limit switch 2 signal state	L-H	6599	00	Bit6
16	External current limit enable signal state	L-H	6599	00	Bit7
17	Alarm reset signal state	L-H	659A	00	Bit0
18	Start pos. 1 signal state	L-H	659A	00	Bit1
19	Start pos. 2 signal state	L-H	659A	00	Bit2
20	Pos./Speed signal state	L-H	659A	00	Bit3
21	Reference direction from volt./freq. conv. signal state	L-H	659A	00	Bit4
22	Enable ramp signal state	L-H	659A	00	Bit5
23	Alternative Start Pos.1 / Pos.2	L-H	659A	00	Bit6
24	Main supply state	L-H	659A	00	Bit7
25	External reference selection 0= analog, 1= frequency	L-H	659B	00	Bit0
26	State of external sensor for positioning	L-H	659B	00	Bit1
27	External sensor for double speed positioning state	L-H	659B	00	Bit2
28	Digital potentiometer "+" button state	L-H	659B	00	Bit3
29	Digital potentiometer "-" button state	L-H	659B	00	Bit4
30	Absolute position counter reset state	L-H	659B	00	Bit5
					Bit6
					Bit7
	LOGIC OUTPUTS	STATE (H=ON L=OFF)	Can Idx	Can SubIdx	Tipo
1	Logic output oL1 state	L-H	65A0	00	Bit0
2	Logic output oL2 state	L-H	65A0	00	Bit1
3	Logic output oL3 state	L-H	65A0	00	Bit2
4	/		65A0	00	Bit3
5	/		65A0	00	Bit4
6	/		65A0	00	Bit5
7	/		65A0	00	Bit6
8	/		65A0	00	Bit7
9	Drive ready signal state	L-H	65A1	00	Bit0
10	Motor thermal protection signal state	L-H	65A1	00	Bit1
11	Speed over minimum signal state	L-H	65A1	00	Bit2
12	Drive on line signal state	L-H	65A1	00	Bit3
13	CW rotation signal state	L-H	65A1	00	Bit4
14	Saturation speed state signal state	L-H	65A1	00	Bit5
15	Ramp end signal state	L-H	65A1	00	Bit6
16	Speed in range signal state	L-H	65A1	00	Bit7
17	Current in range signal state	L-H	65A2	00	Bit0
18	Blocked motor signal state	L-H	65A2	00	Bit1
19	Stop in position signal state	L-H	65A2	00	Bit2
20	Ramp signal state	L-H	65A2	00	Bit3
21	Deceleration area	L-H	65A2	00	Bit4
22	Stop in Pos.1	L-H	65A2	00	Bit5
23	Stop in Pos.2	L-H	65A2	00	Bit6
24	Power relay state	L-H	65A2	00	Bit7
25	End of movement	L-H	65A3	00	Bit0
			65A3	00	Bit1
			65A3	00	Bit2
			65A3	00	Bit3
			65A3	00	Bit4

DMBL CANBUS MANUAL V03

The contents of this manual is referred to 7.04 and 7.06 software versions

If you have any questions about equipment installation or working,
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