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INDICE DELLE REVISIONI						
Rev.	**Par.**	**Descrizione della modifica**	**Data**	**R**	**V**	**A**
0.0	-	Prima stesura	18/07/2018	mb	fb	fb
1.0	-	Aggiornamenti per versione software 4.6	11/01/2022	mb	rt	rt

R = Redazione
V = Verifica
A = Approvazione

1. Scope of the document

The purpose of the present specification is to define the basic instructions for TeMec PC-Interface use (in the following pages called *Interface*).

2. How to connect

2.1. Connection via AZ convert or via RS485/USB converter.

If you use AZ convert remember to install its drivers (ST.TEC.005-USB-UART-installation).
Start the TeMec Interface and choose AZ3.

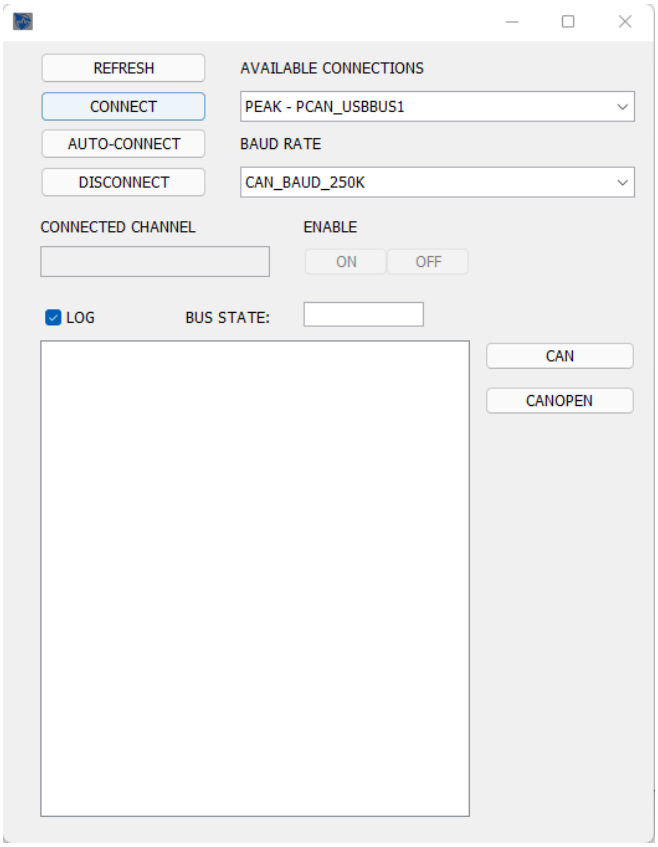
Push the Modbus button and then push the Connection button to automatically connect the Interface with the drive (it is not necessary to set COM or baudrate). Start and connect the interface to AZ3 drive only when the device is already switched on and connected to PC.

2.2. Connection via USB/CAN converter.

The converters supported by the interface are PEAK PCAN and IXXAT V2 compact (remember to install the converter drivers).
Start the TeMec Interface and choose AZ3.

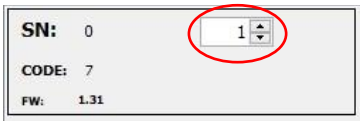
Push the Modbus CANOpen button and then open the view ***Connect/CAN Options***.

In the following window select the converter (PEAK PCAN in this case), select the correct BAUD RATE (125 kbit/s by default) and then push CONNECT.



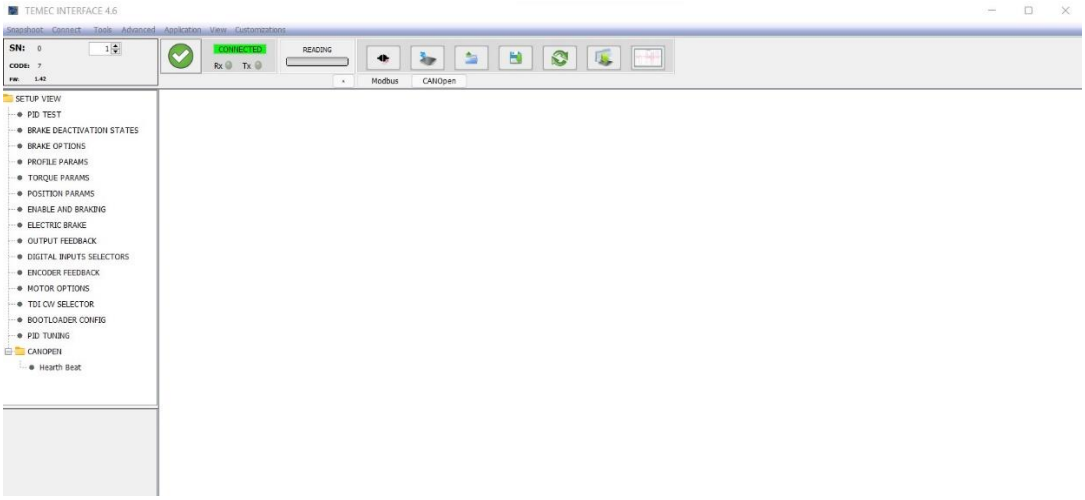
Start and connect the interface to AZ3 drive only when the device is already switched on and connected to PC.

Go back to the main view and select the correct address with the window circled in red below (if the address is **1**, select **2** and then **1** again).



3. TeMec PC-Interface

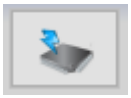
TeMec Interface starts with the following screen:



3.1. Main bar buttons

The following points describe the functions of the buttons.

- Save parameters button: save parameters on AZ3 drive memory;



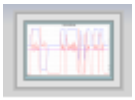
- Load parameters button: load parameters in the Interface from a configuration file (.dat);

- Save parameters on file button: save Interface parameters on a configuration file (.dat);

- Update parameters button: update Interface parameters from AZ3 drive;

- Write parameters button: write all the parameters of Interface in AZ3 drive **but does not save them**;

- Virtual Oscilloscope button: open virtual oscilloscope;



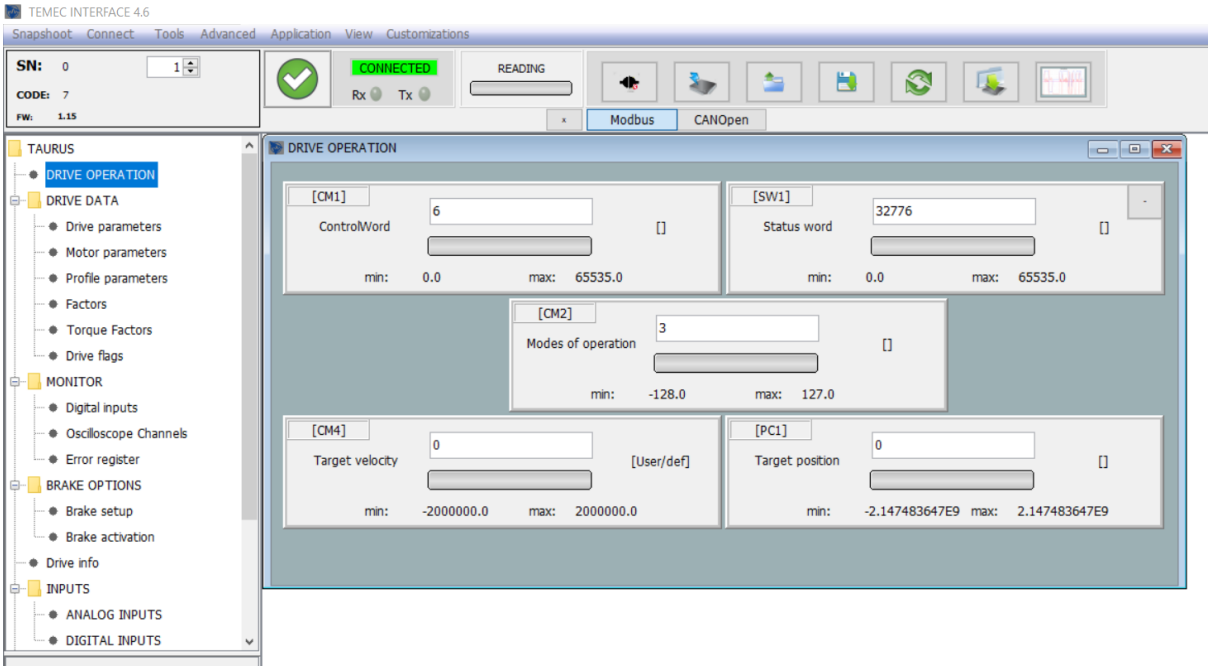
- Error log: displays the last errors stored in the drive memory.

4. Basic instructions

4.1. Make the motor run

NB! Before following the instructions below, check that the motor can run in a safe condition.

In the upper menu push view/Base and then push on DRIVE OPERATION in the menu that will appear on the left.

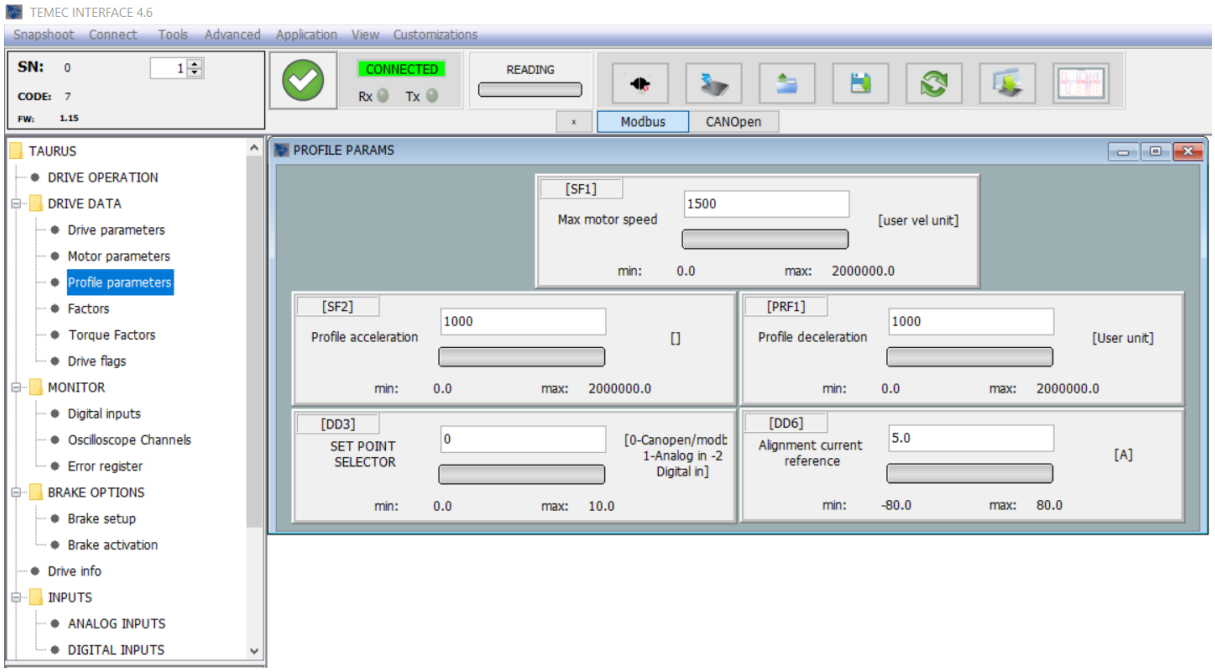


After the connection of all the cables as showed in the document “How to connect”, enable the power writing **15** in the Control word window and pressing enter. To give a set-point, write a value in rpm in target velocity and press enter and then the motor will start to run.

To stop the motor then write **0** as set-point in target velocity and press enter. Then to disable the power write **6** in the Control word window and press enter.

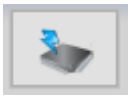
4.2. Change acceleration and deceleration ramps

In the upper menu push view/Base and then push on DRIVE DATA/Profile parameters in the menu that will appear on the left.



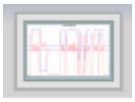
To change the motor ramps write the desired acceleration ramp in the window profile acceleration in rpm/s and pushing enter then write the desired deceleration ramp in the window profile deceleration in rpm/s and pushing enter.

To save the ramps after changed push the Save parameters button.

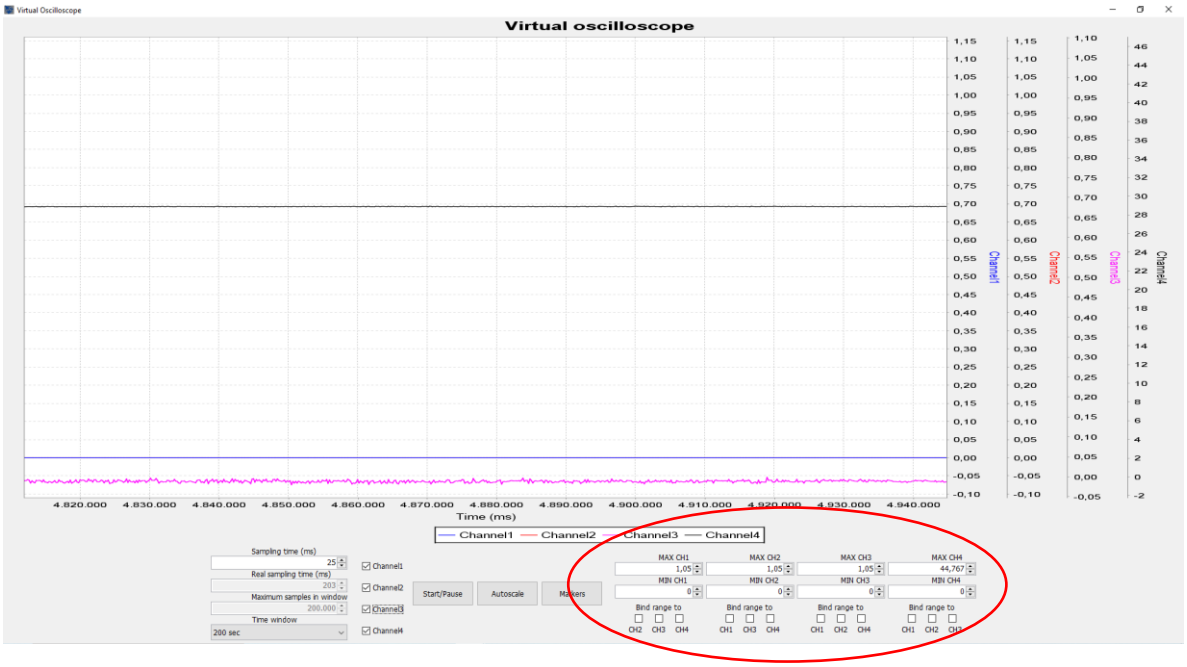


5. Virtual oscilloscope

Pushing the following button it is possible to open the virtual oscilloscope.

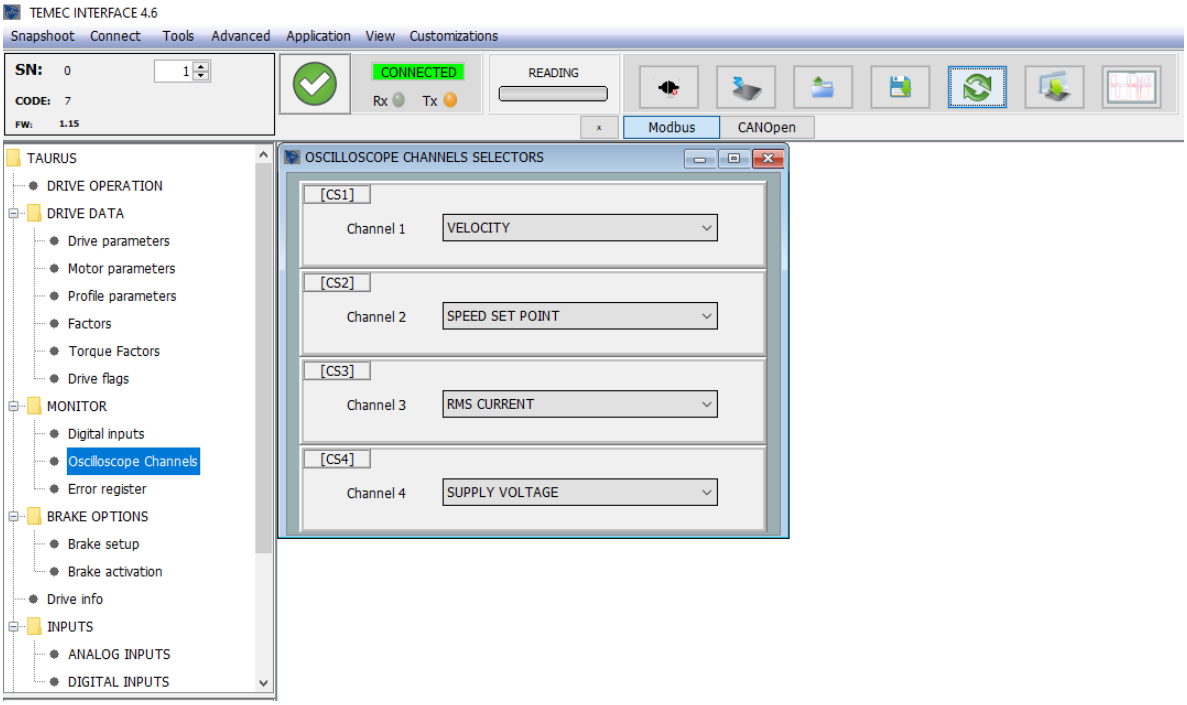


In order to start with acquisitions push the start button and set the four scales using the autoscale button or the windows circled below.



- Start/Pause button: Start the oscilloscope sampling;
- Autoscale button: Automatically adjust the scale;
- Channel flags: Enable and Disable the channel visibility on the scope;
- MAX CH and MIN CH: Manual adjustment of the scale;
- Time window: Change the time window displayable;

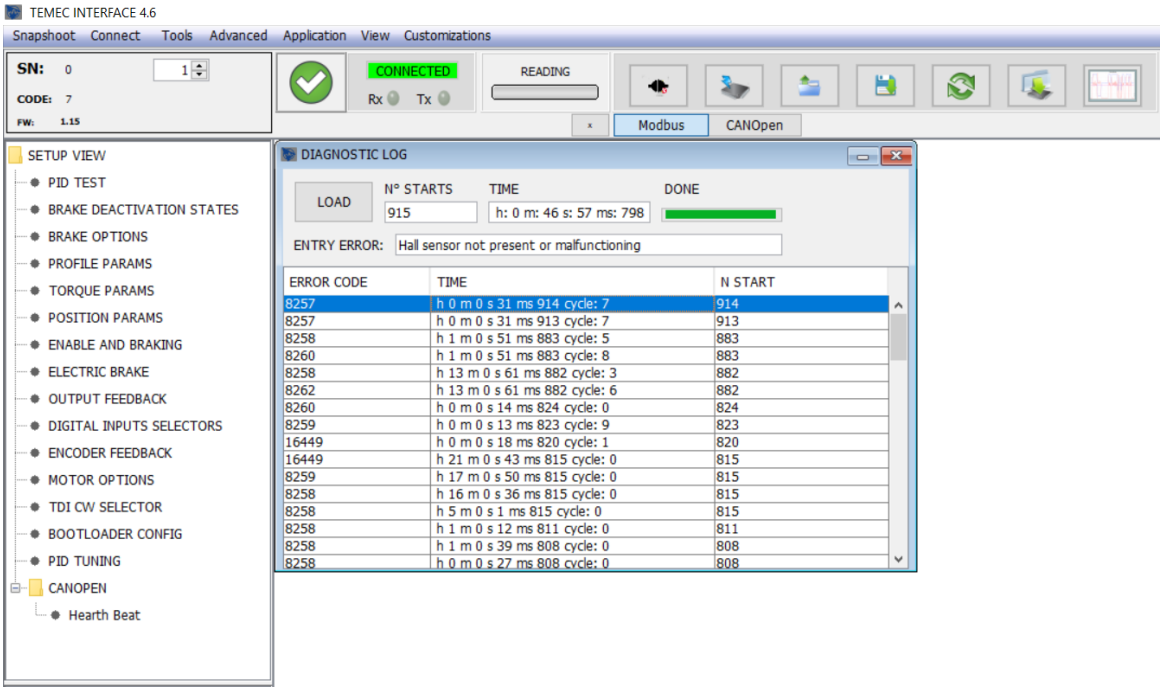
In View/BASE →MONITOR → Oscilloscope channels, is possible to set which variable connect on the four oscilloscope channels.



6. Diagnostic log panel

Push the following button to open the diagnostic log windows.

Once opened the diagnostic log window push the load button to read all the errors saved in the memory of the drive.



7. Parameters location

The following table shows all the parameters reported in the AZ3 User Manual (ST.TEC.030 rev. 0.1) and their relative path in TeMec PC-Interface (rev. 6.4).

Code	Variable	Menu -> View	Path
AD1	**Alimentation power**	SETUP	ELECTRIC BRAKE
AI1	**User range 1**	BASE	INPUTS -> ANALOG INPUTS
AI10	**AI Mult 2**	BASE	INPUTS -> ANALOG INPUTS
AI11	**AI filter time**	BASE	INPUTS -> ANALOG INPUTS
AI2	**Offset 1**	BASE	INPUTS -> ANALOG INPUTS
AI3	**Zero threshold 1**	BASE	INPUTS -> ANALOG INPUTS
AI4	**User range 2**	BASE	INPUTS -> ANALOG INPUTS
AI5	**Offset 2**	BASE	INPUTS -> ANALOG INPUTS
AI6	**Zero threshold 2**	BASE	INPUTS -> ANALOG INPUTS
AI7	**Selector 1**	BASE	INPUTS -> ANALOG INPUTS
AI8	**Selector 2**	BASE	INPUTS -> ANALOG INPUTS
AI9	**AI Mult 1**	BASE	INPUTS -> ANALOG INPUTS
AXO1	**AUX PWM OUT 1 SEL**	SETUP	BRAKE OPTIONS
AXO2	**AUX PWM OUT 2 SEL**	SETUP	BRAKE OPTIONS
AXO3	**BRAKE 1 MODE SEL**	SETUP	BRAKE OPTIONS
AXO4	**BRAKE 1 POW VALUE**	SETUP	BRAKE OPTIONS
BKS1	**START**	SETUP	BRAKE DEACTIVATION STATES
BKS2	**NOT READY TO SWITCH ON**	SETUP	BRAKE DEACTIVATION STATES
BKS3	**SWITCH ON DISABLED**	SETUP	BRAKE DEACTIVATION STATES
BKS4	**READY TO SWITCH ON**	SETUP	BRAKE DEACTIVATION STATES
BKS5	**SWITCHED ON**	SETUP	BRAKE DEACTIVATION STATES
BKS6	**OPERATION ENABLED**	SETUP	BRAKE DEACTIVATION STATES
BKS7	**QUICK STOP ACTIVE**	SETUP	BRAKE DEACTIVATION STATES
BKS8	**FAULT**	SETUP	BRAKE DEACTIVATION STATES
BKS9	**FAULT REACTION ACTIVE**	SETUP	BRAKE DEACTIVATION STATES
BR1	**Braking resistor value**	SETUP	ELECTRIC BRAKE

BR2	**Braking resistor max power**	SETUP	ELECTRIC BRAKE
CM1	**Control word**	BASE	DRIVE OPERATION
CM2	**Modes of operation**	BASE	DRIVE OPERATION
CM4	**Target velocity**	BASE	DRIVE OPERATION
DD1	**V bus max**	BASE	DRIVE DATA -> Drive parameters
DD2	**ENCODER TYPE**	BASE	DRIVE DATA -> Motor parameters
DD3	**SET POINT SELECTOR**	BASE	DRIVE DATA -> Profile parameters
DD5	**MOTOR POLES PAIR**	BASE	DRIVE DATA -> Motor parameters
DF1	**Phasing in progress**	BASE	DRIVE DATA -> Drive Flags
DF12	**Reset Position**	BASE	DRIVE DATA -> Drive Flags
DF2	**Start phasing**	BASE	DRIVE DATA -> Drive Flags
DF5	**Invert Position feedback**	DEFAULT	DRIVE DATA -> Drive Flags
DF6	**auto-phased motor**	DEFAULT	DRIVE DATA -> Drive Flags
DF7	**Invert speed feedback**	DEFAULT	DRIVE DATA -> Drive Flags
DI1	**DI1 rise selector**	SETUP	DIGITAL INPUTS SELECTORS
DI10	**Speed value 2**	SETUP	DIGITAL INPUTS SELECTORS
DI11	**Position value 1**	SETUP	DIGITAL INPUTS SELECTORS
DI12	**Position value 2**	SETUP	DIGITAL INPUTS SELECTORS
DI13	**Torque value 1**	SETUP	DIGITAL INPUTS SELECTORS
DI14	**Torque value 2**	SETUP	DIGITAL INPUTS SELECTORS
DI2	**DI1 fall selector**	SETUP	DIGITAL INPUTS SELECTORS
DI3	**DI2 rise selector**	SETUP	DIGITAL INPUTS SELECTORS
DI4	**DI2 fall selector**	SETUP	DIGITAL INPUTS SELECTORS
DI5	**DI3 rise selector**	SETUP	DIGITAL INPUTS SELECTORS
DI6	**DI3 fall selector**	SETUP	DIGITAL INPUTS SELECTORS
DI7	**DI4 rise selector**	SETUP	DIGITAL INPUTS SELECTORS
DI8	**DI4 fall selector**	SETUP	DIGITAL INPUTS SELECTORS
DI9	**Speed value 1**	SETUP	DIGITAL INPUTS SELECTORS
DRF1	**TDI CW manage enable**	ADVANCED	FLAGS
DRF2	**Ready to switch on is reached at start up**	ADVANCED	FLAGS

DRF3	**Operation enabled is reached at start up**	ADVANCED	FLAGS
DRF7	**Thermistor check activation**	ADVANCED	FLAGS
DRF7	**Torque limit on**	ADVANCED	FLAGS
DRF8	**Brake activation**	ADVANCED	FLAGS
DRF9	**Brake value**	ADVANCED	FLAGS
DRS3	**brake disengage time**	SETUP	ENABLE AND BRAKING
DRS4	**brake engage time**	SETUP	ENABLE AND BRAKING
DRS6	**Shutdown option code**	SETUP	ENABLE AND BRAKING
DRS7	**Disable operation option code**	SETUP	ENABLE AND BRAKING
EFM1	**Encoder feedback mode**	SETUP	ENCODER FEEDBACK
FS1	**Gear ratio motor revolution**	BASE	DRIVE DATA -> Factors
FS10	**Position encoder resolutions encoder increments**	BASE	DRIVE DATA -> Factors
FS11	**Velocity factor numerator**	BASE	DRIVE DATA -> Factors
FS12	**Velocity factor denominator**	BASE	DRIVE DATA -> Factors
FS13	**Polarity**	BASE	DRIVE DATA -> Factors
FS2	**Gear ratio shaft revolutions**	BASE	DRIVE DATA -> Factors
FS3	**Velocity encoder resolution motor revolutions**	BASE	DRIVE DATA -> Factors
FS4	**Velocity encoder resolution increments per second**	BASE	DRIVE DATA -> Factors
FS5	**Feed constant feed**	BASE	DRIVE DATA -> Factors
FS6	**Feed constant shaft revolutions**	BASE	DRIVE DATA -> Factors
FS9	**Position encoder resolution motor revolutions**	BASE	DRIVE DATA -> Factors
IC1	**Nominal current rms**	BASE	DRIVE DATA -> Motor parameters
IDP1	**ID KP**	SETUP	PID TUNING
IDP2	**ID KI**	SETUP	PID TUNING
IDP3	**ID KD**	SETUP	PID TUNING
IQP1	**IQ KP**	SETUP	PID TUNING
IQP2	**IQ KI**	SETUP	PID TUNING
IQP3	**IQ KD**	SETUP	PID TUNING
MTY1	**Motor type***	SETUP	MOTOR OPTIONS
MV1	**Torque actual value**	SETUP	TORQUE PARAMS

MV5	**Position actual value**	SETUP	POSITION PARAMS
MV7	**Velocity actual value**	SETUP	POSITION PARAMS
OF1	**Output 1 selector**	SETUP	OUTPUT FEEDBACK
OF2	**Output 2 selector**	SETUP	OUTPUT FEEDBACK
PC1	**Target position**	SETUP	POSITION PARAMS
PC10	**POSITION KD**	SETUP	PID TUNING
PC2	**Min position range limit**	SETUP	POSITION PARAMS
PC3	**Max position range limit**	SETUP	POSITION PARAMS
PC4	**Soft min position limit**	SETUP	POSITION PARAMS
PC5	**Soft max position limit**	SETUP	POSITION PARAMS
PC6	**Max profile velocity**	SETUP	POSITION PARAMS
PC7	**Max profile velocity**	SETUP	POSITION PARAMS
PC7	**Profile velocity**	SETUP	POSITION PARAMS
PC8	**POSITION KP**	SETUP	PID TUNING
PC9	**POSITION KI**	SETUP	PID TUNING
PRF1	**Profile deceleration**	BASE	DRIVE DATA -> Profile parameters
SCM1	**TDI CW mode**	SETUP	TDI CW SELECTOR
SF1	**Max motor speed**	BASE	DRIVE DATA -> Profile parameters
SF2	**Profile acceleration**	BASE	DRIVE DATA -> Profile parameters
SP1	**SPEED KP**	SETUP	PID TUNING
SP2	**SPEED KI**	SETUP	PID TUNING
SP3	**SPEED KD**	SETUP	PID TUNING
TC1	**Target torque**	SETUP	TORQUE PARAMS
TC2	**Max torque**	SETUP	TORQUE PARAMS
TC3	**Max current**	SETUP	TORQUE PARAMS
TC4	**Motor rated torque**	SETUP	TORQUE PARAMS
TC5	**Motor rated current**	SETUP	TORQUE PARAMS
TC6	**Torque slope**	SETUP	TORQUE PARAMS
TF1	**Torque limit**	SETUP	TORQUE PARAMS