World Class Design | World Class Function | 30 Years Expertise in Industrial Motor Control

DC MOTOR DRIVE

PL/X and JL/X ranges

SPRINT ELECTRIC

FIELDBUS Manual

HG105409EN00 Issue 1 (08/2022)

Please read this information before installing or using the product.

Install, use and maintain this product following the procedures provided.
The manual(s) cannot provide all details, variations and contingencies required for your installation, operation and maintenance of this product or the apparatus with this product installed. For further help or information, refer to your local Supplier sales office.

Application area

The equipment described is intended for industrial (non-consumer) motor speed control.

Intended users

To safely enable the user to obtain maximum benefit from the equipment:

- Ensure this information is available to all persons required to install, configure or service the described equipment or any other associated operation.
- Always store the manual in a conveniently accessible area for quick reference.
- Make it available for the next user/owner of the product.

This product is of the restricted sales distribution class according to IEC 61800-3 and has a "professional equipment" designation as defined in EN 61000-3-2.

Safety

Ensure all users and operators understand the included WARNINGS, CAUTIONS and NOTES, which alert the user to safety issues. COMPLY WITH WARNINGS AND CAUTIONS AT ALL TIMES. Each of these carries a special meaning and should be read carefully:

WARNING!

A WARNING is given when non-compliance with the warning may result in personal injury and/or equipment damage.

CAUTION!

A CAUTION is given when non-compliance with the caution may result in permanent equipment damage.

NOTE A note provides specific information to make important instructions clear.

Symbols

 **Attention**	 **Electrostatic Discharge (ESD)**	 **Electric Shock Hazard**
See the instructions for use. Specific warnings not found on the label.	This equipment contains ESD sensitive parts. Observe static control precautions when handling, installing and servicing this product.	Disconnect the mains supply before working on the unit. **Do not touch presets, switches and jumpers!** Always use the correct insulated adjustment tools.

WARNING!

Only qualified personnel must install, operate and maintain this equipment.

A qualified person is someone technically competent and familiar with all safety information, established safety practices, installation, operation, maintenance and the hazards involved with this equipment and any associated machinery.

Hazards

This equipment can endanger life through rotating machinery and high voltages.

WARNING!

PERSONAL INJURY AND/OR ELECTRICAL SHOCK HAZARD

- Always isolate all power supplies from the equipment before starting any work.
- Never perform high voltage resistance checks on the wiring without first disconnecting the product from the circuit under test.
- Use guarding and additional safety systems to prevent injury and electric shock.
- Metal parts may reach 90°C during operation.

CAUTION!

EQUIPMENT DAMAGE HAZARD

- We thoroughly test our products. However, before installation and start-up, inspect all equipment for transit damage, loose parts, packing materials, etc.
- Installation must observe the required environmental conditions for safe and reliable operation.
- In a domestic environment, this product may cause radio interference, requiring adequate measures to be taken. Obtain the permission of the supply authority before connecting to the low voltage supply.

General risks

Installation

- Ensure mechanically secure fixings are in use as recommended.
- Ensure cooling airflow around the product is as recommended.
- Ensure cables/wire terminations are as recommended and are torqued correctly.
- Ensure the product rating is correct - do not exceed the rating.

Application risk

Electromechanical safety is the responsibility of the user. The integration of this product into other apparatus or systems is not the manufacturer's or distributor of the product's responsibility. It is the user's responsibility to ensure the compliance of the installation with any regulations in force.

Health and safety at work

Electrical devices can constitute a safety hazard. Thorough personnel training is an aid to SAFETY and productivity. SAFETY awareness not only reduces the risk of accidents and injuries in your plant but also has a direct impact on improving product quality and costs. If you have any doubts about the SAFETY of your system or process, consult an expert immediately. Do not proceed without doing so. If in doubt, refer to the Supplier.

Weight

Consideration should be given to the weight of our heavier products when handling.

Risk assessment

Under fault conditions or conditions not intended: the motor speed may be incorrect; the motor speed may be excessive; the direction of rotation may be incorrect; the motor may be energised.

In all situations, the user should provide sufficient guarding and/or additional redundant monitoring and safety systems to prevent risk of injury.

NOTE: During a power loss event, the product will commence a sequenced shut-down procedure. Therefore, the system designer must provide suitable protection for this case.

Maintenance

Only qualified personnel should maintain and effect repair using only the recommended spares, alternatively return the equipment to the factory for repair. The use of unapproved parts may create a hazard and risk of injury.

WARNING!

PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD

When replacing a product, all user-defined parameters that define the product's operation must be installed correctly before returning to use. Failure to do so may create a hazard and risk of injury.

The packaging is inflammable and incorrect disposal may lead to the generation of lethal toxic fumes.

Repairs

Repair reports can only be given if the user makes sufficient and accurate defect reporting. Remember that the product without the required precautions can represent an electrical hazard and risk of injury, and that rotating machinery is a mechanical hazard.

Protective insulation

Isolated product

WARNING!

The drive and motor must be connected to an appropriate safety earth.
Failure to do so presents an electrical shock hazard. Exposed metal work in this equipment is protected by basic insulation and bonding to a safety earth.

This product is classified as a component and must be used in a suitable enclosure.

1. This is achieved through basic insulation and protective earth grounding, or double-insulation to provide SELV Control Circuits.
2. This protection allows a safe connection to other low voltage equipment.
3. **Earth bonding is the responsibility of the installer.**

Contents:

Contents (cont.):

Disposal

This product contains materials that are consignable waste under the Hazardous Waste Regulations 2005. Metal and plastic materials can be recycled, however, disposal of the printed circuit board requires compliance with all valid environmental control laws.

Products that must be recycled in accordance with the WEEE Regulations are marked with the symbol opposite. Contact us when recyling the product.

1 Introduction

This manual explains how to use the FIELDBUS mounting board and install the Anybus CompactCom module on Sprint-Electric's PL/X and JL/X ranges of DC drives.

As a clarification, the manual refers to "PL/X" throughout, but "JL/X" can be substituted.

It is intended for use by installers, operators, and programmers of PL/X and JL/X Digital DC Drives and assumes that you have relevant experience in these disciplines.

The following drive software versions are supported:

PL/X: v6.41 onwards
JL/X: v2.41 onwards

Previous releases will not support these options.

Use the Fieldbus mounting board (LA105224) to:

- Communicate to a host PC by fitting an Anybus CompactCom Module.

To use:

1. Install the Anybus CompactCom module - refer to "2 Anybus CompactCom Module installation" on page 3.
2. Map PL/X parameters using **savvy** - refer to "5 Mapping FIELDBUS parameters" on page 29.

Note that with the Fieldbus mounting board fitted and hosting an Anybus CompactCom module, **savvy** can ONLY connect using the RS232 serial port.

Find the latest version of the **drive.web savvy** manual at:

https://driveweb.com/tech/manual/en.html

Why are some menus not visible?

You may be seeing the PL/X reduced menu.

Navigate to ENTRY MENU/DISPLAY FUNCTIONS/ REDUCED MENU ENABLE and select DISABLED to view the full menu.

Frame 1 - PL/X5-50

Frame 2 - PL/X65-145
Frame 2 - JL/X130-270

Frame 3 - PL/X185-265

Frame 4 - PL/X275-440
Frame 4 - JL/X370-780

Frame 5 - PL/X520-980
Frame 5 - JL/X860-1680

Enable the PL/X for configuration

To modify a parameter in the CONFIGURATON menu, you **must** first set **ENABLE GOTO,GETFROM** to ENABLED. The drive's internal block diagram connections can be re-configured using:

- An Ethernet-based distributed control system (DCS)*****
- The PL/X HMI.

For more information, refer to the CONFIGURATION menu in the Product Manual, HG105281EN00.

*** A DCS may complete the ENABLE GOTO,GETFROM settings automatically, for example, savvy.**

WARNING!
PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD

The PL/X suspends Comms operation while in CONFIGURATION mode.

To begin a Configuration session, you must set CONFIGURATION / ENABLE GOTO,GETFROM to ENABLED.

```
ENABLE GOTO,GETFROM
       ENABLED
```

If you try to make a connection without doing this, you will momentarily see **ENABLE GOTO,GETFROM** displayed on the screen.

To end a Configuration session, you must set CONFIGURATION / ENABLE GOTO,GETFROM to DISABLED.

```
ENABLE GOTO,GETFROM
       DISABLED
```

The drive now runs a "Conflict Checker" to warn of **GOTO** connection conflicts.

Save your changes

- Changes made to parameters are effective immediately.
- To make configuration changes using the HMI, set **ENABLE GOTO,GETFROM** to ENABLED.
  Configuration changes become effective when you set **ENABLE GOTO,GETFROM** to DISABLED. (When using a serially connected configuration tool, setting **ENABLE GOTO,GETFROM** to ENABLED prevents changes from being made).

Changes are not permanent until a **PARAMETER SAVE** is performed.

To save your changes:

1. Hold down the LEFT key to display the Diagnostic Summary screens. Release the key.
2. Press the RIGHT (**R**) key,
3. Press the UP (**U**) key.
4. Press the RIGHT (**R**) key to display the PARAMETER SAVE screen.
5. Press the UP (**U**) key to continue and save.

This sequence is shown as **R-U-R-U**. **R-U-R-U**

```
PARAMETER SAVE     2
UP KEY TO CONTINUE
```

When the save is **FINISHED**, hold down the LEFT key to display the Diagnostic Summary screens. Release the key.

2 Anybus CompactCom Module installation

Fit an Anybus CompactCom module to the PL/X Fieldbus mounting board to configure one or more PL/Xs using an ethernet-based distributed control system (DCS), providing supervision and monitoring for each unit.

Anybus have modules available for a range of protocols:

www.anybus.com/products/embedded-index/anybus-compactcom-modules

Refer to "4.1 Overview of available interfaces" on page 14.

Figure 1 Fieldbus mounting board fitted with Anybus CompactCom module

1. Use the quick-release catches on the sides of the endcaps to remove the PL/X top and bottom endcaps.
2. Remove the front cover's four corner fixing screws.
3. Pull away the front cover and unplug its ribbons from the drive.
4. Completely loosen the screws on the front of the Anybus CompactCom module.
5. Slide the Anybus CompactCom Module into the Fieldbus mounting board.
6. Tighten the screws on the front of the Anybus CompactCom module to lock the module firmly and flat to the Fieldbus mounting board.
7. Connect the communication interface to the module, for example, PROFIBUS.
8. Install the Fieldbus mounting board by first locating it onto the two top standoffs. Ensure the connector on the back of the Fieldbus mounting board mates with the connector in the drive. Use the two screws to secure the lower standoffs between the Fieldbus mounting board and drive.
9. Refit the ribbons, the PL/X front cover with screws, and the endcaps.

NOTE: To fit the communication interface to the Anybus CompactCom module with the Fieldbus mounting board in place, remove the Fieldbus mounting board's lower corner fixings and carefully pull it forward along its bottom edge to provide access for the connector.

3 Configuring FIELDBUS

3.1 CONFIGURATION / FIELDBUS CONFIG

Both Cyclic and Acyclic communications with the PLC are supported. The Cyclic data must be configured in both the PLX and the PLC. Cyclic data is limited to a maximum of nine Input WORDs (to PLC) and nine Output WORDs (from PLC).
The FIELDBUS CONFIG menu establishes connections between the PL/X PINs and the PL/X FIELDBUS port:

- JUMPERS 1 - 8 use **GET FROM**s (1 word each) to connect the source PINs to the PL/X FIELDBUS transmitter.
- JUMPERS 9 - 16 use **GOTO**s (1 word each) to connect the target PINs to the PL/X FIELDBUS receiver.

NOTE: Do not confuse these **FIELDBUS CONFIG** jumpers with the jumpers found in the **CONFIGURATION / JUMPER CONNECTIONS** menu. They are independently useable tools.

The **BIT-PACKED GETFROM** menu contains eight additional JUMPERS to build a byte of logic sources (1 word).

The **BIT-PACKED GOTO** menu contains eight additional JUMPERS to build a byte of logic targets (1 word).

Use **199>FBUS DATA CONTRL** to set BIG/LITTLE ENDIAN and OFF-LINE output CLEAR, OFF-LINE output FREEZE mode as required.

There is also the hidden PIN, **200>FBUS ON-LINE MON**, which is HIGH when the fieldbus is online.

NOTE: If exchanging to a different protocol Anybus CompactCom Module, the FIELDBUS parameters may require remapping.

Changes to the Fieldbus Configuration require the PLX to be power cycled to become operative.

```
R ENTRY MENU      LEVEL   1
  CONFIGURATION             2
  FIELDBUS CONFIG           3
    JUMPER 1                4
    JUMPER 2                4
    JUMPER 3                4
    JUMPER 4                4
    JUMPER 5                4
    JUMPER 6                4
    JUMPER 7                4
    JUMPER 8                4
    BIT-PACKED GETFROM
    JUMPER 9                4
    JUMPER 10               4
    JUMPER 11               4
    JUMPER 12               4
    JUMPER 13               4
    JUMPER 14               4
    JUMPER 15               4
    JUMPER 16               4
    BIT-PACKED GOTO
    199>FBUS DATA CONTRL
    202>FBUS NODE ID
    224>FBUS BAUD RATE
```

Providing FIELDBUS configuration on the PLX rather than relying on the host system can provide the following advantages:

- Any PL/X parameter is available for selection as a source by each of eight **GET FROM**s (1 word each), plus one group of 8-way bit-packed logic value **GET FROM**s (1 word). Any legal PL/X parameter is available for selection as a target by each of the eight **GOTO**s (1 word each), plus one group of 8-way bit-packed logic value **GOTO**s (1 word).
- The PL/X **GOTO** conflict checker automatically checks for **GOTO** connections accidentally configured to another PL/X **GOTO**.
- Reconfigure the FIELDBUS for any PL/X without stopping the Master or other PL/Xs.
- The PL/X holds the FIELDBUS configuration within the drive and also in the parameter exchange file. It is possible to save three FIELDBUS configurations in each PL/X by using the three Recipe pages.

3.1.1 JUMPERS 1 - 8

Set the PIN for the Fieldbus JUMPERS 1 - 8 GET FROM source.

	Parameter description	Range	Default
	GET FROM	PIN 000 to 720	400>Block Disconnect

JUMPERs 1-8 select the **GET FROM** PINs that form the PLC Input Cyclic data. Only **GET FROM** PINs not selected as **400>Block Disconnect** are included, each occupying a 16-bit WORD. Data is allocated sequentially in the order FIELDBUS CONFIG JUMPERs 1-8.

Paameter	JUMPER 1 GET FROM	JUMPER 2 GET FROM	JUMPER 3 GET FROM	JUMPER 4 GET FROM	JUMPER 5 GET FROM	JUMPER 6 GET FROM	JUMPER 7 GET FROM	JUMPER 8 GET FROM
PIN	737	738	739	740	741	742	743	744

R ENTRY MENU LEVEL 1
CONFIGURATION 2
FIELDBUS CONFIG 3
JUMPER 1 4
GET FROM

3.1.2 BIT-PACKED GETFROM

Set the PIN for the JUMPERS 1 - 8 GET FROM to build a word of logic sources.

	Parameter description	Range	Default
	GET FROM	PIN 000 to 720	400>Block Disconnect

BIT-PACKED GETFROM selects up to 8 **GET FROM** PINs to form the lower 8-bits of a 16-bit WORD to be appended to the PLC Input Cyclic data.

Within the **BIT-PACKED GETFROM** menu, **JUMPERs 1-8** configure the sources for bits 0 to 7 respectively, i.e. **JUMPER 1** connects the least significant bit.

BIT-PACKED GETFROM comprises 8 bits for reading logic values in the PL/X using a **GET FROM** window.

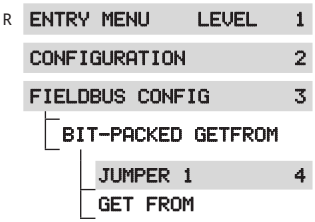
The 8 bits group into the lower byte for the FIELDBUS word, the higher byte is zero.

(word = 0000 0000 J8, J7, J6, J5, J4, J3, J2, J1)

The **JUMPER 1** bit is the least significant.

Note that within the **BIT-PACKED GET FROM** menu, the JUMPER 1 - 8 nomenclature denotes the connections to bits configured by each **GET FROM**.

If the host can decode bit-packed words, use JUMPERS 1 to 8 for logic values (JUMPER 1 shown opposite).



NOTE: A logic or linear PL/X parameter may be connected.

- Non-zero (+ or -) values result in logic 1
- Zero results in logic 0.

Paameter	JUMPER 8 GET FROM	JUMPER 7 GET FROM	JUMPER 6 GET FROM	JUMPER 5 GET FROM	JUMPER 4 GET FROM	JUMPER 3 GET FROM	JUMPER 2 GET FROM	JUMPER 1 GET FROM
PIN	752	751	750	749	748	747	746	745
Bit	8	7	6	5	4	3	2	1

The data of the BIT-PACKED PINs are combined into the lower 8 bits of a single WORD.

Only **GET FROM** PINs not selected as **400>Block Disconnect** are included in the cyclic data.

The 9 WORDS (maximum) for both the cyclic input and output areas are allocated sequentially, in the order:

FIELDBUS CONFIG JUMPERS 1 - 8 and BIT-PACKED GETFROM

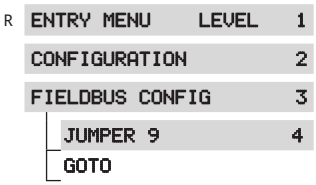
FIELDBUS CONFIG JUMPERS 1 - 8 plus BIT-PACKED GETFROM
These nine parameters appear in sequence in the first nine registers of the INPUT AREA.

3.1.3 JUMPERS 9 - 16

Set the target PIN for the Fieldbus JUMPERS 9 - 16 GOTO signal.

	Parameter description	Range	Default
	GOTO	PIN 000 to 720	400>Block Disconnect

JUMPERs 9-16 select the **GOTO** PINs that form the PLC Output Cyclic data. Only **GOTO** PINs not selected as **400>Block Disconnect** are included, each occupying a 16-bit WORD. Data is allocated sequentially in the order FIELDBUS CONFIG JUMPERs 9-16.



Paameter	JUMPER 9 GOTO	JUMPER 10 GOTO	JUMPER 11 GOTO	JUMPER 12 GOTO	JUMPER 13 GOTO	JUMPER 14 GOTO	JUMPER 15 GOTO	JUMPER 16 GOTO
PIN	776	777	778	779	780	781	782	783

3.1.4 BIT-PACKED GOTO

Set the PIN for the JUMPERS 9 - 16 GOTO to build a word of logic targets.

	Parameter description	Range	Default
	GOTO	PIN 000 to 720	400>Block Disconnect

BIT-PACKED GOTO selects up to 8 GOTO PINs to form the lower 8-bits of a 16-bit WORD to be appended to the PLC Output Cyclic data.

Within the BIT-PACKED GOTO menu, the JUMPERs 1-8 configure the destinations for bits 0 to 7 respectively, i.e. JUMPER 1 connects the least significant bit.

Note: when writing a linear parameter, logic 1 results in the smallest possible number of the destination PIN. For example, for destination PIN % value of 2 decimal place resolution, logic 1 results in 0.01%, logic 0 results in 0.00%.

R ENTRY MENU LEVEL 1
CONFIGURATION 2
FIELDBUS CONFIG 3
BIT-PACKED GOTO
JUMPER 9 4
GOTO

Data is allocated sequentially in the order FIELDBUS CONFIG JUMPERs 9-16. The JUMPER 9 bit is the least significant.

Note that within the BIT-PACKED GOTO menu, the JUMPER 9 - 16 nomenclature denotes the connections to bits configured by each GOTO.

A BIT-PACKED GOTO can target all writeable PINs (linear and also logic PL/X parameters).

If the host can decode bit-packed words, use JUMPERS 9 to 16 for logic values (JUMPER 9 shown opposite).

Paameter	JUMPER 16 GOTO	JUMPER 15 GOTO	JUMPER 14 GOTO	JUMPER 13 GOTO	JUMPER 12 GOTO	JUMPER 11 GOTO	JUMPER 10 GOTO	JUMPER 9 GOTO
PIN	799	798	787	796	795	794	793	792
Bit	8	7	6	5	4	3	2	1

The data of the BIT-PACKED PINs are combined into the lower 8 bits of a single WORD.

Only GOTO PINs not selected as 400>Block Disconnect are included in the cyclic data.

The 9 WORDS (maximum) for both the cyclic input and output areas are allocated sequentially, in the order:

FIELDBUS CONFIG JUMPERS 9 – 16 and BIT-PACKED GOTO.

FIELDBUS CONFIG JUMPERS 9 - 16 plus BIT-PACKED GOTO
These nine parameters appear in sequence in the first nine registers of the OUTPUT AREA.

3.1.5 199)FBUS DATA CONTRL

Control for loss of comms and endian control of fieldbus data.

PIN	Parameter description	Range	Default
199	FIELDBUS DATA CONTROL	00 - 11	00

Parameter **199>FBUS DATA CONTRL** specifies how data exchanged with the PLC is handled.

Note that the PLX only reads this parameter at start-up. A reset is required if it is changed.

Bit 0 (left most) sets the behaviour of the Cyclic output data (from PLC) in the event of a loss in communications.

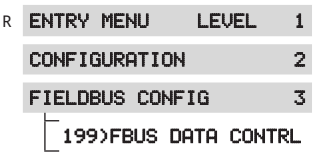
1 The **GOTO** PINs will remain at their last received value (FREEZE)

0 The **GOTO** PINs are set to zero (CLEAR)

Bit 1 (2nd from left) sets the byte order within the 16-bit WORD. The Bit 1 setting is:

1 Low/High (little-endian)

0 High/Low (big-endian)



A little-endian system stores the least-significant byte of a word at the smallest address.

A big-endian system stores the most-significant byte of a word at the smallest memory address.

Typically, only PROFINET and PROFIBUS fieldbuses require the LITTLE-ENDIAN data format.

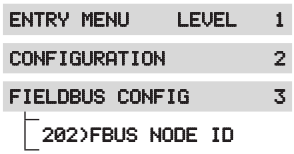
3.1.6 202)FBUS NODE ID

Device address used by Profibus, DeviceNet and CANopen.

PIN	Parameter description	Range	Default
202	FIELDBUS NODE ID	0 - 127	0

Parameter **202>FBUS NODE ID** is used to set a unique address for the PLX on the fieldbus network.

This is only required for PROFIBUS, DeviceNet and CANopen.



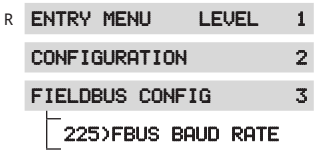
3.1.7 224)FBUS BAUD RATE

Baud Rate used by DeviceNet and CANopen.

PIN	Parameter description	Range	Default
224	FIELDBUS BAUD RATE	See below	0

Parameter **224)FBUS BAUD RATE** is used to set the baud rate for the PLX on the fieldbus network.

This is only required for DeviceNet and CANopen.



Range:

0 125 kbps
1 250 kbps
2 500 kbps
3 800 kbps
4 1Mbps

3.2 CONFIGURATION / CONFLICT HELP MENU

This menu identifies and warns of accidental User programming that has connected a single PIN to more than one GOTO.

An automatic conflict check is performed at the end of each configuration session whenever you set ENABLE GOTO,GETFROM to DISABLED. This process repeats until no conflicts are displayed.

It is not possible to make illegal connections (e.g. from an output to an output). However, you can incorrectly connect more than one GOTO to a legal pin (e.g. an input), resulting in an error at the target pin.

R ENTRY MENU LEVEL 1
CONFIGURATION 2
ENABLE GOTO,GETFROM

When the "conflict checker" finds a conflict:

1. The message GOTO CONFLICT is displayed.
2. Correct the conflict.

3.2.1 NUMBER OF CONFLICTS

Display the number of active GOTO conflicts.

PIN	Parameter description	Range
772	NUMBER OF CONFLICTS	0 to 50

NOTE: There will be at least two conflicts for each conflict PIN. Removing one GOTO from the conflict PIN will reduce the conflict number by 1.

R ENTRY MENU LEVEL 1
CONFIGURATION 2
CONFLICT HELP MENU 3
NUMBER OF CONFLICTS

3.2.2 MULTIPLE GOTO ON PIN

Display the destination PIN of the first detected conflict.

PIN	Parameter description	Range
773	MULTIPLE GOTO ON PIN	0 to 720

NOTE: There will be at least two conflicts for each conflict PIN. Removing one GOTO from the conflict PIN will reduce the conflict number by 1.

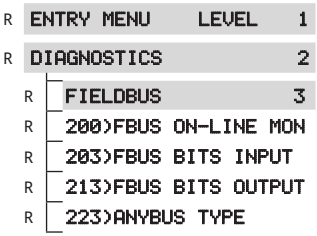
PIN 400 is "block disconnect". It indicates no conflicts.

R ENTRY MENU LEVEL 1
CONFIGURATION 2
CONFLICT HELP MENU 3
MULTIPLE GOTO ON PIN

3.3 DIAGNOSTICS / FIELDBUS

The diagnostics menu provides a monitoring facility for all the main drive parameters.

The read-only parameters in the DIAGNOSTIC/FIELDBUS menu provides information about the status of the Fieldbus communications.

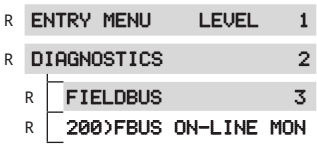


3.3.1 200)FBUS ON-LINE MON

Monitor when the fieldbus is actually on-line (HIGH = on-line).

PIN	Parameter description	Range
200	FIELDBUS ON-LINE MONITOR	LOW HIGH

Parameter 200>FBUS ON-LINE MON diagnostic is HIGH to indicate when the PLX/JLX is exchanging Cyclic data with the PLC. The meaning of this may differ with some fieldbus types.

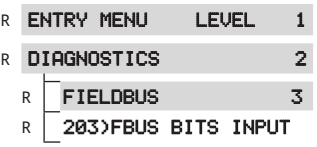


3.3.2 203)FBUS BITS INPUT

Monitor BIT-PACKED bits to PLC (GET FROMs)

PIN	Parameter description	Range
203	FIELDBUS BITS INPUT	00000000 - 11111111

Parameter 203>FBUS BITS INPUT is the 16-bit WORD being sent to the PLC (PLC input) which is constructed using the configured BIT-PACKED GET FROMs.

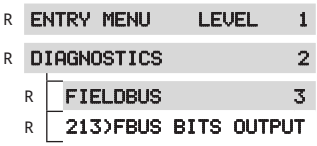


3.3.3 213)FBUS BITS OUTPUT

Monitor BIT-PACKED bits from PLC (GOTOs).

PIN	Parameter description	Range
213	FIELDBUS BITS OUTPUT	00000000 - 11111111

213>FBUS BITS OUTPUT is the 16-bit WORD being received from the PLC (PLC OUTPUT) which is being used to set the configured BIT-PACKED GOTOs.



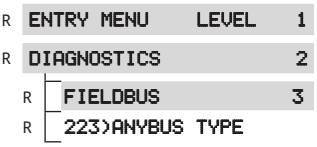
3.3.4 223)ANYBUS TYPE

Displays the Anybus option fitted.

PIN	Parameter description	Range
223	ANYBUS TYPE	See below

Parameter 223>ANYBUS TYPE diagnostic shows the specific ANYBUS fieldbus module fitted.

This information may be required to determine which Electronic Data Sheet file to be used to configure the PLC.



Range:

0 NOT FITTED
1 NOT SUPPORTED
2 PROFIBUS DPV1
3 PROFINET
4 ETHERNET/IP
5 MODBUS TCP
6 DEVICENET
7 CANOPEN
8 ETHERCAT
9 PROFIBUS DPV1 (M30)
10 PROFINET (M30)
11 ETHERNET/IP (M30)
12 MODBUS TCP (M30)
13 DEVICENET (M30)
14 CANOPEN (M30)
15 ETHERCAT (M30)
16 PROFINET 1P (M30)
17 ETHERNET/IP 1P (M30)
18 MODBUS TCP 1P (M30)

4 Anybus Option Modules

4.1 Overview of available interfaces

Connection to any one of seven Fieldbus networks is possible by installing the specific Anybus Module for that network. Both the M40 or M30 versions of Anybus Module are supported.

Module	M40	M30	M30 1-Port
PROFINET	AB6605	AB6221	AB6215
MODBUS TCP	AB6603	AB6223	AB6213
EtherNet/IP™	AB6604	AB6224	AB6214
EtherCAT®	AB6607	AB6216	
PROFIBUS DP-V1	AB6600	AB6200	
DeviceNet™	AB6601	AB6201	
CANopen	AB6613	AB6218	

All fieldbusses provide Cyclic process data exchange and Acyclic parameter read/write.

The Cyclic process data can consist of a maximum nine input words and nine output words. These are mapped to drive parameters using FIELDBUS CONFIG JUMPERs as described in "3.2 CONFIGURATION / CONFLICT HELP MENU" on page 11.

The addressing of parameters to read/write Acyclically is Fieldbus type specific, and is described in the relevant section. Any attempt to write to a read-only parameter is rejected.

All Fieldbusses, other than MODBUS TCP, require an electronic datasheet file (eds/gsd/esi/gsdml) to configure the PLC. These can be downloaded from the SOFTWARE section of:

https://www.sprint-electric.com/downloads/

Note that there are different versions of these files for M40 and M30 modules.

To check which version of Anybus Module is fitted, look at diagnostic 233>ANYBUS TYPE. If the type name includes “(M30)” then an M30 module is fitted, otherwise it is an M40 module.

4.2 PROFINET

4.2.1 Fieldbus Interface

1	Network Status LED
2	Module Status LED
3	Link/Activity LED (port 1)
4	Link/Activity LED (port 2)

4.2.1.1 Network Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description	Comments
Off	Offline	• No power • No connection with IO Controller
Green	Online (RUN)	• Connection with IO Controller established • IO Controller in RUN state
Green, 1 flash	Online (STOP)	• Connection with IO Controller established • IO Controller in STOP state or IO data bad
Green, blinking	Blink	Used by engineering tools to identify the node on the network
Red	Fatal event	Major internal error
Red, 1 flash	Station Name error	Station Name not set
Red, 2 flashes	IP address error	IP address not set
Red, 3 flashes	Configuration error	Expected Identification differs from Real Identification

4.2.1.2 Module Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description	Comments
Off	Not Initialised	• No power • Module initialising
Green	Normal Operation	
Green, 1 flash	Diagnostic Event(s)	Diagnostic event(s) present
Red	Fatal event	Major internal error

4.2.1.3 LINK/Activity LED

LED State	Description
Off	No link
Green	Link
Green, flickering	Activity

4.2.2 Cyclic Data

To transfer Cyclic Data (Process Data), configure the PLC to match the number of Input and Output words from the number of used FIELDBUS **GET FROM**s and **GOTO**s.

The GSD file specifies nine INPUT modules and nine OUTPUT modules:

INPUT 1 Word; INPUT 2 Words; .....; INPUT 9 Words
OUTPUT 1 Word; OUTPUT 2 Words; .....; OUTPUT 9 Words

Select one INPUT module and one OUTPUT module to match the **GET FROM**s and **GOTO**s (respectively).

4.2.3 Acyclic Data

Parameters can be accessed acyclically from the PLC using Record Data read/write services.

Index	= parameter number
Slot	= 0
SubSlot	= 1
Size	= 2 (bytes)

For example:

409)SUMMER 1 INPUT 2 is

Index:Slot:SubSlot:Size 409:0:1:2

4.2.4 Electronic Data Sheet

PROFINET GSDML files:

GSDML-V2.35-SPRINT-Electric-20220425	PLX or JLX	M40
GSDML-V2.25-SPRINT-Electric-M30-20220425	PLX or JLX	M30 2-Port
GSDML-V2.0-SPRINT-Electric-M30-1P-20220425	PLX or JLX	M30 1-Port

4.3 Modbus TCP

4.3.1 Fieldbus Interface

1	Network Status LED
2	Module Status LED
3	Link/Activity LED (port 1)
4	Link/Activity LED (port 2)

4.3.1.1 Network Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description
Off	No power or no IP Address
Green	At least one Modbus message received
Green, flashing	Waiting for first Modbus message
Red	Duplicate IP address
Red, flashing	Connection timeout. No Modbus message has been received within the configured “process active timeout” time

4.3.1.2 Module Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description
Off	No power
Green	Normal operation
Red	Major fault
Red, flashing	Recoverable fault(s)

4.3.1.3 LINK/Activity LED

LED State	Description
Off	No link, no activity
Green	Link (100 Mbit/s) established
Green, flickering	Activity (100 Mbit/s)
Yellow	Link (10 Mbit/s) established
Yellow, flickering	Activity (10 Mbit/s)

4.3.2 Cyclic Data

Modbus does not feature a dedicated cyclic data channel in the same sense as other networks. However, in the Anybus implementation, you can still access network Process Data via dedicated entries in the Modbus register map.

- Output Process Data may be written to as Holding Registers 1 to 9.
- Input Process Data may be read as Input Registers 1 to 9.
- Input Process Data may also be read as Holding Registers 2049 to 2057 (257 to 265 if M30 module).

4.3.3 Acyclic Data

Parameters can be accessed acyclically from the PLC via Holding Registers.

Register	= parameter number + 5000

For example:

409>SUMMER 1 INPUT 2 is

Holding Register 5409

4.3.4 Electronic Data Sheet

Not used by Modbus TCP.

4.4 EtherNet/IP

4.4.1 Fieldbus Interface

1	Network Status LED
2	Module Status LED
3	Link/Activity LED (port 1)
4	Link/Activity LED (port 2)

4.4.1.1 Network Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description
Off	No power or no IP Address
Green	Online, one or more connections established (CIP Class 1 or 3)
Green, flashing	Online, no connections established
Red	Duplicate IP address,
Red, flashing	One or more connections timed out (CIP Class 1 or 3)

4.4.1.2 Module Status LED

NOTE: A test sequence is performed on this LED during start-up.

LED State	Description
Off	No power
Green	Controlled by a Scanner in Run state
Green, flashing	Not configured, or Scanner in Idle state
Red	Major fault
Red, flashing	Recoverable fault(s)

4.4.1.3 LINK/Activity LED

LED State	Description
Off	No link, no activity
Green	Link (100 Mbit/s) established
Green, flickering	Activity (100 Mbit/s)
Yellow	Link (10 Mbit/s) established
Yellow, flickering	Activity (10 Mbit/s)

4.4.2 Cyclic Data

The Cyclic Data (Process Data) is transferred using the Producing Assembly and Consuming Assembly.

- The Producing Assembly “Input Data” (T→O) must be configured to match the number of words used by the FIELDBUS **GET FROM**s.
- The Consuming Assembly “Output Data” (O→T) must be configured to match the number of words used by the FIELDBUS **GOTO**s.

4.4.3 Acyclic Data

Parameters can be accessed acyclically from the Scanner/PLC by Set_Attribute and Get_ Attribute CIP object services.

Class	= 162 (A2h)
Instance	= parameter number
Attribute	= 5
Size	= 2 (2bytes)

For example:

409)SUMMER 1 INPUT 2 is

Class:Instance:Attribute:Size 162:409:5:2

4.4.4 Electronic Data Sheet

Ethernet/IP eds files:

005A002B00370100.eds	PLX or JLX	M40
005A0000002E0100.eds	PLX or JLX	M30 2-Port
005A000000630200.eds	PLX or JLX	M30 1-Port

4.5 EtherCAT

4.5.1 Fieldbus Interface

1	RUN LED
2	ERROR LED
3	Link/Activity LED (port 1)
4	Link/Activity LED (port 2)
5	EtherCAT (port 1)
6	EtherCAT (port 2)

4.5.1.1 RUN LED

LED State	Indication
Off	INIT
Green	OPERATIONAL
Green, blinking	PRE-OPERATIONAL
Green, single flash	SAFE-OPERATIONAL
Flickering	BOOT
Red	Fatal error

4.5.1.2 ERR LED

LED State	Indication
Off	No error
Red, blinking	Invalid configuration
Red, single flash	Unsolicited state change
Red, double flash	Sync Manager watchdog timeout
Red	Fatal error

4.5.1.3 LINK/Activity LED

LED State	Indication
Off	No link
Green	Link
Green, flickering	Activity

4.5.2 Cyclic Data

- Configure the correct number of Input words to match the number of words used by the FIELDBUS **GET FROM**s.
- Configure the correct number of Output words to match the number of words used by the FIELDBUS **GOTO**s.

4.5.3 Acyclic Data

The Acyclic Data (parameter read/write) is transferred using SDO transfers. The parameters are directly mapped as vendor specific objects.

Index	= 2000h + parameter number
Subindex	= 0
Size	= 2 (bytes)

For example:

409)SUMMER 1 INPUT 2 is

Index:Subindex 2199h:0

4.5.4 Electronic Data Sheet

EtherCAT esi files:

ESI_PLX_JLX_2_14.XML	PLX or JLX	M40
ESI_PLX_JLX_1_09.XML	PLX or JLX	M30

4.6 PROFIBUS DP-V1

4.6.1 Fieldbus Interface

1	Operation Mode LED	
2	Status LED	
3	PROFIBUS Connector	

4.6.1.1 Operation Mode LED

LED State	Indication
Off	Not online / No power
Green	DATA EXCHANGE
Green, flashing	CLEAR
Red, single flash	PARAMETERISATION ERROR
Red, double flash	CONFIGURATION ERROR

4.6.1.2 Status LED

LED State	Indication
Off	Not initialised
Green	Initialised
Green, flashing	Initialised, diagnostic event(s) present
Red	Fatal error

4.6.1.3 LINK/Activity LED

Pin	Signal	Description
1	-	
2	-	
3	B Line	Positive RxD/TxD, RS485 level
4	RTS	Request to send
5	GND Bus	ground (isolated)
6	+5V Bus Output	+5 V termination power (isolated, short-circuit protected)
7	-	
8	A Line	Negative RxD/TxD, RS485 level
9	-	
Housing	Cable Shield	Protective earth

4.6.2 Baud Rate

The Baud Rate is automatically detected. It is not possible to manually select.

4.6.3 Node Address

The Node Address is set by parameter **202)FBUS NODE ID**.

Note that a power cycle of the drive may be necessary before a change takes effect.

4.6.4 Cyclic Data

To transfer Cyclic Data (Process Data), the PLC must be configured to match the number of Input and Output words from the number of used FIELDBUS **GET FROM**s and **GOTO**s.

The GSD file specifies nine INPUT modules and nine OUTPUT modules:

INPUT 1 Word; INPUT 2 Words; .....; INPUT 9 Words

OUTPUT 1 Word; OUTPUT 2 Words; .....; OUTPUT 9 Words

Select one INPUT module and then one OUTPUT module to match the **GET FROM**s and **GOTO**s (respectively).

4.6.5 Acyclic Data

Parameters can be accessed acyclically from the PLC using DP-V1 read/write services.

Slot	= (parameter number + 254) / 255
Index	= (parameter number + 254) MOD 255
Size	= 2 (bytes)

For example:

409)SUMMER 1 INPUT 2 is

Slot:Index:Size 2:153:2

4.6.6 Electronic Data Sheet

PROFIBUS gsd files:

plxjlx_1815.gsd	PLX or JLX	M40
plxjlx_M30_1811.gsd	PLX or JLX	M30

4.7 DeviceNet

4.7.1 Fieldbus Interface

1	Network Status LED
2	Module Status LED
3	DeviceNet Connector

4.7.1.1 Network Status LED

LED State	Indication
Off	Not online / No power
Green	On-line, one or more connections are established
Green, flashing	On-line, no connections established
Red	Critical link failure
Red, flashing	One or more connections timed-out
Alternating Red/Green	Executing self-test

4.7.1.2 Module Status LED

LED State	Indication
Off	No power
Green	Operating in normal condition
Green, flashing	Missing or incomplete configuration, device needs commissioning
Red	Fatal error
Red, flashing	Recoverable error(s)
Alternating Red/Green	Executing self-test

4.7.1.3 DeviceNet Connector

Pin	Signal	Description
1	V-	Negative bus supply voltage (DeviceNet bus power)
2	CAN_L	CAN low bus line
3	SHIELD	Cable shield
4	CAN_H	CAN high bus line
5	V+	Positive bus supply voltage (DeviceNet bus power)

NOTE: The DeviceNet interface requires a bus supply of 24 Vdc to operate.

4.7.2 Baud Rate

The Baud Rate is set by parameter **224>FBUS BAUD RATE**.

0	125kbps
1	250kbps
2	500kbps

4.7.3 Node Address (MAC ID)

The Node Address is set by parameter **202>FBUS NODE ID**.

Note that a power cycle of the drive may be necessary before a change takes effect.

4.7.4 Cyclic Data

The Cyclic Data (Process Data) is transferred using the Producing Assembly and Consuming Assembly.

- Configure the Producing Assembly "Input Data" (T→O) to match the number of words used by the FIELDBUS **GET FROM**s.
- Configure the Consuming Assembly "Output Data" (O→T) to match the number of words used by the FIELDBUS **GOTO**s.

4.7.5 Acyclic Data

Parameters can be accessed acyclically from the Scanner/PLC by Set_Attribute and Get_Attribute CIP object services.

Class	= 162 (A2h)
Instance	= parameter number
Attribute	= 5
Size	= 2 (2bytes)

For example:

409>SUMMER 1 INPUT 2 is

Class:Instance:Attribute:Size 162:409:5:2

4.7.6 Electronic Data Sheet

DeviceNet eds files:

005A002B003F0100.eds	PLX or JLX	M40
005A000000620200.eds	PLX or JLX	M30

4.8 CANopen

4.8.1 Fieldbus Interface

1	RUN LED	
2	ERROR LED	
3	CANopen Connector	

4.8.1.1 RUN LED

LED State	Indication
Off	No power
Green	OPERATIONAL
Green, blinking	PRE-OPERATIONAL
Green, single flash	STOPPED
Red	Fatal Event

4.8.1.2 ERROR LED

LED State	Indication	Comments
Off		No power or the device is in working condition.
Red, single flashing	Warning limit reached	A bus error counter reached or exceeded its warning level.
Red, double flash	Error Control Event	A guard- (NMT-Slave or NMT-master) or heartbeat event (Heartbeat consumer) has occurred.
Red	Bus off (Fatal Event)	Bus off

4.8.1.3 CANopen Connector (DB9M)

Pin	Signal
1	-
2	CAN_L
3	CAN_GND
4	-
5	CAN_SHLD

Pin	Signal
6	-
7	CAN_H
8	-
9	-
Housing	CAN_SHIELD

4.8.2 Baud Rate

The Baud Rate is set by parameter **224>FBUS BAUD RATE**.

0	125kbps
1	250 kbps
2	500 kbps
3	800 kbps
4	1 Mbps

4.8.3 Device Address

The Device Address is set by parameter **202>FBUS NODE ID**.

Note that a power cycle of the drive may be necessary before a change takes effect.

4.8.4 Cyclic Data

The Cyclic Data (Process Data) is transferred using the TPDOs and RPDOs.

GET FROM words 1 to 4 are allocated to TPDO 1
GET FROM words 5 to 8 are allocated to TPDO 2
GET FROM word 9 is allocated to TPDO 3

GOTO words 1 to 4 are allocated to RPDO 1
GOTO words 5 to 8 are allocated to RPDO 2
GOTO word 9 is allocated to RPDO 3

4.8.5 Acyclic Data

Acyclic Data (parameter read/write) is transferred using SDO transfers. The parameters are directly mapped as vendor-specific objects.

Index	= 2000h + parameter number
Subindex	= 0
Size	= 2 (bytes)

For example:

409>SUMMER 1 INPUT 2 is

Index:Subindex 2199h:0

4.8.6 Electronic Data Sheet

CANopen eds files:

SPRINT_PLX.EDS	PLX	M40
SPRINT_JLX.EDS	JLX	M40
SPRINT_PLX_M30.EDS	PLX	M30
SPRINT_JLX_M30.EDS	JLX	M30

5 Mapping FIELDBUS parameters

The PL/X parameters require mapping to the host PC software.

5.1 Using drive.web savvy to map parameters

The PL/X series of DC Drives operate with several ethernet-based distributed control systems (DCS), for example, **drive.web savvy**.

https://driveweb.com/get-savvy/

Implement **savvy** economically by using off-the-shelf ethernet hubs and connection cables. Multiple drives can be interconnected to allow the system to be ethernet enabled. Parameter connections are made virtually within all the units in a system.

Complete diagnostic information is available over RS232 or ethernet (with additional hardware) when using a distributed control system (DCS) graphical software tool.

Use **drive.web savvy** to select parameters for transmitting to or receiving from the host drive using, for example, the PROFIBUS protocol. You may fit the PL/X with other Anybus CompactCom modules having different protocols.

Launch **savvy**, the **drive.web** tool for configuring devices and systems:

To select a phantom device:

1. Double-click the PL/X "speedy-sp" phantom device for the Sprint-Electric PL/X on the opening screen.
2. Select "Fieldbus" from the bottom of the screen's left-hand menu to display the Fieldbus screen.

To select a connected device:

1. Display the "Directory" drop-down menu.
2. For example, select "Discover Device by IP Address". Enter IP address or hostname and select "OK".
3. Double-click the new device added to the screen to display the "Engineering Info" screen.
4. Select "Fieldbus" from the bottom of the screen to display the Fieldbus screen.

5.1.1 RS232 to USB converter

Your PC might not have an RS232 COM port. Instead, it will have a USB port. In this case, fit a USB - RS232 converter (e.g. a single in-line converter type USB to serial male D9, or multi-port type, for example, Belkin F5U120uPC). It will have the required driver utility software. Install this on the computer first.

NOTE: When using a USB - RS232 converter, plug it into the PC before powering up to initialise it correctly.

After installing the driver software:

1. Right-click on the 'My Computer' icon and select Properties / Device Manager / Ports to find the port allocated to the converter (COM1, COM2, COM3, or COM4).
2. Always use the nominated USB port allocation when setting up **savvy**.

To map a parameter between the PL/X and the host:

1. Select a **GOTO** or **GET FROM** on the FIELDBUS screen.
2. From the drop-down menu, select "Connect to...".
3. From the "Make Connection" menu, select the PL/X parameter to link to and click "OK".

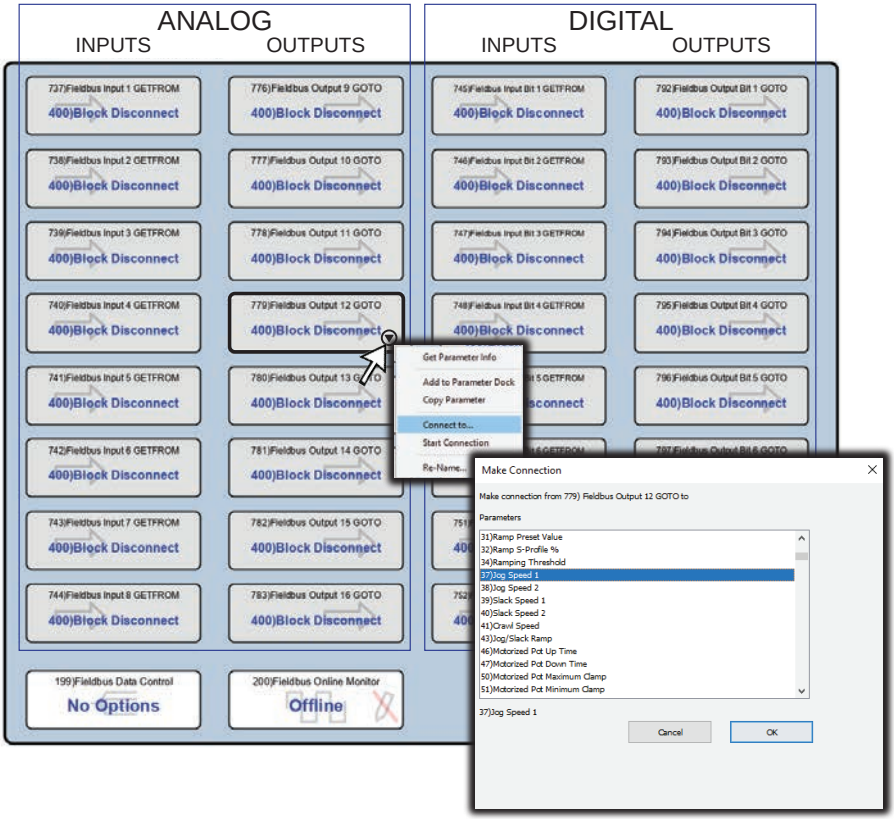


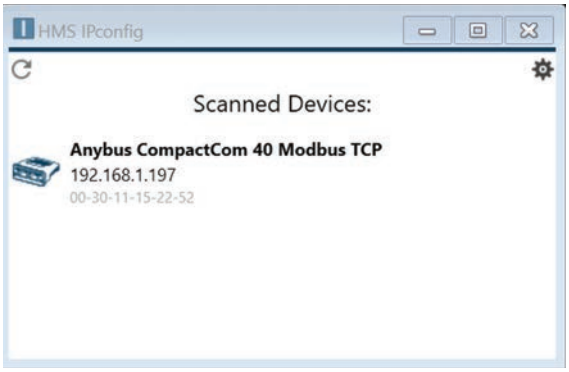
Figure 2 The savvy Fieldbus screen

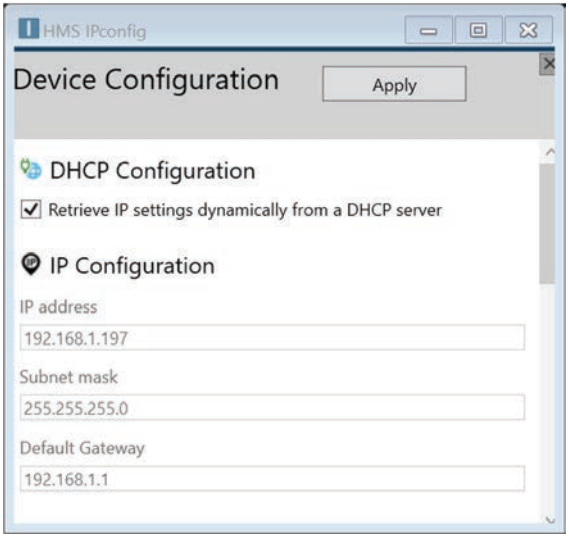
6 Setting an IP Address using HMS IPconfig

The Modbus TCP, EtherNet/IP and PROFINET modules require a valid IP Address to connect to their fieldbus network.

The IP Address may be obtained from a DHCP server (default) or from a fieldbus controller, e.g. PROFINET PLC.

It is also possible to scan for connected devices and set their IP Configuration using the HMS IPconfig utility which is a free of charge download from the HMS website: www.anybus.com.





7 Parameter lists

7.1 PL/X parameters

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	2)RATED ARM AMPS	4x05002	[1:1]	2002h	2	2
	3)CURRENT LIMIT(%)	4x05003	[1:2]	2003h	3	3
	4)RATED FIELD AMPS	4x05004	[1:3]	2004h	4	4
	5)BASE RATED RPM	4x05005	[1:4]	2005h	5	5
	6)DESIRED MAX RPM	4x05006	[1:5]	2006h	6	6
	7)ZERO SPD OFFSET	4x05007	[1:6]	2007h	7	7
	8)MAX TACHO VOLTS	4x05008	[1:7]	2008h	8	8
	9)SPEED FBK TYPE	4x05009	[1:8]	2009h	9	9
	10)QUADRATURE ENABLE	4x05010	[1:9]	200Ah	10	10
	11)ENCODER LINES	4x05011	[1:10]	200Bh	11	11
	12)MOT/ENC SPD RATIO	4x05012	[1:11]	200Ch	12	12
	13)ENCODER SIGN	4x05013	[1:12]	200Dh	13	13
	14)IR COMPENSATION	4x05014	[1:13]	200Eh	14	14
	15)FIELD CUR FB TRIM	4x05015	[1:14]	200Fh	15	15
	16)ARM VOLTS TRIM	4x05016	[1:15]	2010h	16	16
	17)ANALOG TACHO TRIM	4x05017	[1:16]	2011h	17	17
	18)RATED ARM VOLTS	4x05018	[1:17]	2012h	18	18
	19)EL1/2/3 RATED AC	4x05019	[1:18]	2013h	19	19
	20)MOTOR 1,2 SELECT	4x05020	[1:19]	2014h	20	20
ro	21)RAMP OP MONITOR	4x05021	[1:20]	2015h	21	21
	22)FORWARD UP TIME	4x05022	[1:21]	2016h	22	22
	23)FORWARD DOWN TIME	4x05023	[1:22]	2017h	23	23
	24)REVERSE UP TIME	4x05024	[1:23]	2018h	24	24
	25)REVERSE DOWN TIME	4x05025	[1:24]	2019h	25	25
	26)RAMP INPUT	4x05026	[1:25]	201Ah	26	26
	27)FORWARD MIN SPEED	4x05027	[1:26]	201Bh	27	27
	28)REVERSE MIN SPEED	4x05028	[1:27]	201Ch	28	28
	29)RAMP AUTO PRESET	4x05029	[1:28]	201Dh	29	29
	30)RAMP EXT PRESET	4x05030	[1:29]	201Eh	30	30
	31)RAMP PRESET VALUE	4x05031	[1:30]	201Fh	31	31
	32)RAMP S-PROFILE %	4x05032	[1:31]	2020h	32	32
	33)RAMP HOLD	4x05033	[1:32]	2021h	33	33
	34)RAMPING THRESHOLD	4x05034	[1:33]	2022h	34	34
ro	35)RAMPING FLAG	4x05035	[1:34]	2023h	35	35
	37)JOG SPEED 1	4x05037	[1:36]	2025h	37	37

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	38)JOG SPEED 2	4x05038	[1:37]	2026h	38	38
	39)SLACK SPEED 1	4x05039	[1:38]	2027h	39	39
	40)SLACK SPEED 2	4x05040	[1:39]	2028h	40	40
	41)CRAWL SPEED	4x05041	[1:40]	2029h	41	41
	42)JOG MODE SELECT	4x05042	[1:41]	202Ah	42	42
	43)JOG/SLACK RAMP	4x05043	[1:42]	202Bh	43	43
ro	45)MP OP MONITOR	4x05045	[1:44]	202Dh	45	45
	46)MP UP TIME	4x05046	[1:45]	202Eh	46	46
	47)MP DOWN TIME	4x05047	[1:46]	202Fh	47	47
	48)MP UP COMMAND	4x05048	[1:47]	2030h	48	48
	49)MP DOWN COMMAND	4x05049	[1:48]	2031h	49	49
	50)MP MAX CLAMP	4x05050	[1:49]	2032h	50	50
	51)MP MIN CLAMP	4x05051	[1:50]	2033h	51	51
	52)MP PRESET	4x05052	[1:51]	2034h	52	52
	53)MP PRESET VALUE	4x05053	[1:52]	2035h	53	53
	54)MP MEMORY BOOT-UP	4x05054	[1:53]	2036h	54	54
	56)STOP RAMP TIME	4x05056	[1:55]	2038h	56	56
	57)STOP TIME LIMIT	4x05057	[1:56]	2039h	57	57
	58)LIVE DELAY MODE	4x05058	[1:57]	203Ah	58	58
	59)DROP-OUT SPEED	4x05059	[1:58]	203Bh	59	59
	60)DROP-OUT DELAY	4x05060	[1:59]	203Ch	60	60
	62)INT SPEED REF 1	4x05062	[1:61]	203Eh	62	62
	63)SPEED REF 2	4x05063	[1:62]	203Fh	63	63
	64)SPEED REF 3 MON	4x05064	[1:63]	2040h	64	64
	65)RAMPED SPD REF 4	4x05065	[1:64]	2041h	65	65
	66)SPD/CUR REF3 SIGN	4x05066	[1:65]	2042h	66	66
	67)SPD/CUR RF3 RATIO	4x05067	[1:66]	2043h	67	67
	69)MAX POS SPEED REF	4x05069	[1:68]	2045h	69	69
	70)MAX NEG SPEED REF	4x05070	[1:69]	2046h	70	70
	71)SPEED PROP GAIN	4x05071	[1:70]	2047h	71	71
	72)SPEED INT T.C.	4x05072	[1:71]	2048h	72	72
	73)SPEED INT RESET	4x05073	[1:72]	2049h	73	73
	74)SPD ADPT LO BRPNT	4x05074	[1:73]	204Ah	74	74
	75)SPD ADPT HI BRPNT	4x05075	[1:74]	204Bh	75	75
	76)LO BRPNT PRP GAIN	4x05076	[1:75]	204Ch	76	76
	77)LO BRPNT INT T.C.	4x05077	[1:76]	204Dh	77	77
	78)INT % DURING RAMP	4x05078	[1:77]	204Eh	78	78
	79)SPD ADAPT ENABLE	4x05079	[1:78]	204Fh	79	79
	81)CUR CLAMP SCALER	4x05081	[1:80]	2051h	81	81
	82)O/LOAD % TARGET	4x05082	[1:81]	2052h	82	82

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	83)O/LOAD RAMP TIME	4x05083	[1:82]	2053h	83	83
	84)I PROFILE ENABLE	4x05084	[1:83]	2054h	84	84
	85)SPD BRPNT AT HI I	4x05085	[1:84]	2055h	85	85
	86)SPD BRPNT AT LO I	4x05086	[1:85]	2056h	86	86
	87)CUR LIMIT AT LO I	4x05087	[1:86]	2057h	87	87
	88)DUAL I CLAMP ENBL	4x05088	[1:87]	2058h	88	88
	89)UPPER CUR CLAMP	4x05089	[1:88]	2059h	89	89
	90)LOWER CUR CLAMP	4x05090	[1:89]	205Ah	90	90
	91)EXTRA CUR REF	4x05091	[1:90]	205Bh	91	91
	92)AUTOTUNE ENABLE	4x05092	[1:91]	205Ch	92	92
	93)CUR PROP GAIN	4x05093	[1:92]	205Dh	93	93
	94)CUR INT GAIN	4x05094	[1:93]	205Eh	94	94
	95)CUR DISCONTINUITY	4x05095	[1:94]	205Fh	95	95
	96)4-QUADRANT MODE	4x05096	[1:95]	2060h	96	96
	97)SPD BYPASS CUR EN	4x05097	[1:96]	2061h	97	97
	98)ARM FIR.FRNT STOP	4x05098	[1:97]	2062h	98	98
	99)FIELD ENABLE	4x05099	[1:98]	2063h	99	99
	100)FIELD VOLTS OP %	4x05100	[1:99]	2064h	100	100
	101)FIELD PROP GAIN	4x05101	[1:100]	2065h	101	101
	102)FIELD INT GAIN	4x05102	[1:101]	2066h	102	102
	103)FLD WEAK ENABLE	4x05103	[1:102]	2067h	103	103
	104)FLD WK PROP GAIN	4x05104	[1:103]	2068h	104	104
	105)FLD WK INT TC ms	4x05105	[1:104]	2069h	105	105
	106)FLD WK DRV TC ms	4x05106	[1:105]	206Ah	106	106
	107)FLD WK FB DRV ms	4x05107	[1:106]	206Bh	107	107
	108)FLD WK FB INT ms	4x05108	[1:107]	206Ch	108	108
	109)SPILLOVER AVF %	4x05109	[1:108]	206Dh	109	109
	110)MIN FLD CURRENT	4x05110	[1:109]	206Eh	110	110
	111)STANDBY FLD ENBL	4x05111	[1:110]	206Fh	111	111
	112)STANDBY FLD CUR	4x05112	[1:111]	2070h	112	112
	113)FLD QUENCH DELAY	4x05113	[1:112]	2071h	113	113
	114)FIELD REFERENCE	4x05114	[1:113]	2072h	114	114
	115)STANDSTILL ENBL	4x05115	[1:114]	2073h	115	115
	116)ZERO REF START	4x05116	[1:115]	2074h	116	116
	117)ZERO INTLK SPD %	4x05117	[1:116]	2075h	117	117
	118)ZERO INTLK CUR %	4x05118	[1:117]	2076h	118	118
ro	119)AT ZERO REF FLAG	4x05119	[1:118]	2077h	119	119
ro	120)AT ZERO SPD FLAG	4x05120	[1:119]	2078h	120	120
ro	121)AT STANDSTILL	4x05121	[1:120]	2079h	121	121
	122)ZERO SPEED LOCK	4x05122	[1:121]	207Ah	122	122

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	123)TOTAL SPD REF MN	4x05123	[1:122]	207Bh	123	123
ro	124)SPEED DEMAND MON	4x05124	[1:123]	207Ch	124	124
ro	125)SPEED ERROR MON	4x05125	[1:124]	207Dh	125	125
ro	126)ARM VOLTS MON	4x05126	[1:125]	207Eh	126	126
ro	127)ARM VOLTS % MON	4x05127	[1:126]	207Fh	127	127
ro	128)BACK EMF % MON	4x05128	[1:127]	2080h	128	128
ro	129)TACHO VOLTS MON	4x05129	[1:128]	2081h	129	129
ro	130)MOTOR RPM MON	4x05130	[1:129]	2082h	130	130
ro	131)SPEED FBK MON	4x05131	[1:130]	2083h	131	131
ro	132)ENCODER RPM MON	4x05132	[1:131]	2084h	132	132
ro	133)ARM CUR DEM MON	4x05133	[1:132]	2085h	133	133
ro	134)ARM CUR % MON	4x05134	[1:133]	2086h	134	134
ro	135)ARM CUR AMPS MON	4x05135	[1:134]	2087h	135	135
ro	136)UPPER CUR LIM MN	4x05136	[1:135]	2088h	136	136
ro	137)LOWER CUR LIM MN	4x05137	[1:136]	2089h	137	137
ro	138)ACTUAL UPPER LIM	4x05138	[1:137]	208Ah	138	138
ro	139)ACTUAL LOWER LIM	4x05139	[1:138]	208Bh	139	139
ro	140)O/LOAD LIMIT MON	4x05140	[1:139]	208Ch	140	140
ro	141)AT CURRENT LIMIT	4x05141	[1:140]	208Dh	141	141
ro	143)FIELD DEMAND MON	4x05143	[1:142]	208Fh	143	143
ro	144)FIELD CUR % MON	4x05144	[1:143]	2090h	144	144
ro	145)FLD CUR AMPS MON	4x05145	[1:144]	2091h	145	145
ro	146)ANGLE OF ADVANCE	4x05146	[1:145]	2092h	146	146
ro	147)FIELD ACTIVE MON	4x05147	[1:146]	2093h	147	147
ro	150)UIP2 (T2) MON	4x05150	[1:149]	2096h	150	150
ro	151)UIP3 (T3) MON	4x05151	[1:150]	2097h	151	151
ro	152)UIP4 (T4) MON	4x05152	[1:151]	2098h	152	152
ro	153)UIP5 (T5) MON	4x05153	[1:152]	2099h	153	153
ro	154)UIP6 (T6) MON	4x05154	[1:153]	209Ah	154	154
ro	155)UIP7 (T7) MON	4x05155	[1:154]	209Bh	155	155
ro	156)UIP8 (T8) MON	4x05156	[1:155]	209Ch	156	156
ro	157)UIP9 (T9) MON	4x05157	[1:156]	209Dh	157	157
ro	159)AOP1 (T10) MON	4x05159	[1:158]	209Fh	159	159
ro	160)AOP2 (T11) MON	4x05160	[1:159]	20A0h	160	160
ro	161)AOP3 (T12) MON	4x05161	[1:160]	20A1h	161	161
ro	162)UIP 23456789	4x05162	[1:161]	20A2h	162	162
ro	163)DIP 12341234 DIO	4x05163	[1:162]	20A3h	163	163
ro	164)DOP 123TRJSC CIP	4x05164	[1:163]	20A4h	164	164
ro	165)+ARM BRIDGE FLAG	4x05165	[1:164]	20A5h	165	165
ro	166)DRIVE START FLAG	4x05166	[1:165]	20A6h	166	166

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	167)DRIVE RUN FLAG	4x05167	[1:166]	20A7h	167	167
ro	168)RUNNING MODE MON	4x05168	[1:167]	20A8h	168	168
ro	169)EL1/2 RMS MON	4x05169	[1:168]	20A9h	169	169
ro	170)DC KILOWATTS MON	4x05170	[1:169]	20AAh	170	170
	171)SPD TRIP ENABLE	4x05171	[1:170]	20ABh	171	171
	172)SPEED TRIP TOL	4x05172	[1:171]	20ACh	172	172
	173)FLD LOSS TRIP EN	4x05173	[1:172]	20ADh	173	173
	174)DOP SCCT TRIP EN	4x05174	[1:173]	20AEh	174	174
	175)MISSING PULSE EN	4x05175	[1:174]	20AFh	175	175
	176)REF EXCH TRIP EN	4x05176	[1:175]	20B0h	176	176
	177)OVERSPEED DELAY	4x05177	[1:176]	20B1h	177	177
	178)STALL TRIP ENBL	4x05178	[1:177]	20B2h	178	178
	179)STALL CUR LEVEL	4x05179	[1:178]	20B3h	179	179
	180)STALL DELAY TIME	4x05180	[1:179]	20B4h	180	180
ro	181)ACTIVE TRIP MON	4x05181	[1:180]	20B5h	181	181
ro	182)STORED TRIP MON	4x05182	[1:181]	20B6h	182	182
	183)EXT TRIP RESET	4x05183	[1:182]	20B7h	183	183
	187)PORT1 BAUD RATE	4x05187	[1:186]	20BBh	187	187
	188)PORT1 FUNCTION	4x05188	[1:187]	20BCh	188	188
	189)REF XC SLV RATIO	4x05189	[1:188]	20BDh	189	189
	190)REF XC SLV SIGN	4x05190	[1:189]	20BEh	190	190
ro	191)REF XC SLAVE MON	4x05191	[1:190]	20BFh	191	191
ro	192)REF XC MASTER MN	4x05192	[1:191]	20C0h	192	192
	193)PORT1 GROUP ID	4x05193	[1:192]	20C1h	193	193
	194)PORT1 UNIT ID	4x05194	[1:193]	20C2h	194	194
	195)PORT1 ERROR CODE	4x05195	[1:194]	20C3h	195	195
	196)P1 DOP3 RTS MODE	4x05196	[1:195]	20C4h	196	196
	199)FBUS DATA CONTRL	4x05199	[1:198]	20C7h	199	199
ro	200)FBUS ON-LINE MON	4x05200	[1:199]	20C8h	200	200
	202)FBUS NODE ID	4x05202	[1:201]	20CAh	202	202
ro	203)FBUS BITS INPUT	4x05203	[1:202]	20CBh	203	203
ro	213)FBUS BITS OUTPUT	4x05213	[1:212]	20D5h	213	213
ro	223)ANYBUS TYPE	4x05223	[1:222]	20DFh	223	223
	240)MARKER ENABLE	4x05240	[1:239]	20F0h	240	240
	241)MARKER OFFSET	4x05241	[1:240]	20F1h	241	241
	242)POSITION REF	4x05242	[1:241]	20F2h	242	242
ro	243)MARKER FREQ MON	4x05243	[1:242]	20F3h	243	243
ro	244)IN POSITION FLAG	4x05244	[1:243]	20F4h	244	244
	250)Iarm OP RECTIFY	4x05250	[1:249]	20FAh	250	250
	251)AOP1 DIVIDER	4x05251	[1:250]	20FBh	251	251

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	252)AOP1 OFFSET	4x05252	[1:251]	20FCh	252	252
	253)AOP1 RECTIFY EN	4x05253	[1:252]	20FDh	253	253
	254)AOP2 DIVIDER	4x05254	[1:253]	20FEh	254	254
	255)AOP2 OFFSET	4x05255	[1:254]	20FFh	255	255
	256)AOP2 RECTIFY EN	4x05256	[2:0]	2100h	256	256
	257)AOP3 DIVIDER	4x05257	[2:1]	2101h	257	257
	258)AOP3 OFFSET	4x05258	[2:2]	2102h	258	258
	259)AOP3 RECTIFY EN	4x05259	[2:3]	2103h	259	259
	260)SCOPE OP SELECT	4x05260	[2:4]	2104h	260	260
	261)DOP1 RECTIFY EN	4x05261	[2:5]	2105h	261	261
	262)DOP1 THRESHOLD	4x05262	[2:6]	2106h	262	262
	263)DOP1 INVERT MODE	4x05263	[2:7]	2107h	263	263
	264)DOP2 RECTIFY EN	4x05264	[2:8]	2108h	264	264
	265)DOP2 THRESHOLD	4x05265	[2:9]	2109h	265	265
	266)DOP2 INVERT MODE	4x05266	[2:10]	210Ah	266	266
	267)DOP3 RECTIFY EN	4x05267	[2:11]	210Bh	267	267
	268)DOP3 THRESHOLD	4x05268	[2:12]	210Ch	268	268
	269)DOP3 INVERT MODE	4x05269	[2:13]	210Dh	269	269
	271)DIO1 OP MODE	4x05271	[2:15]	210Fh	271	271
	272)DIO1 RECTIFY EN	4x05272	[2:16]	2110h	272	272
	273)DIO1 THRESHOLD	4x05273	[2:17]	2111h	273	273
	274)DIO1 INVERT MODE	4x05274	[2:18]	2112h	274	274
	275)DIO1 IP HI VALUE	4x05275	[2:19]	2113h	275	275
	276)DIO1 IP LO VALUE	4x05276	[2:20]	2114h	276	276
	277)DIO2 OP MODE	4x05277	[2:21]	2115h	277	277
	278)DIO2 RECTIFY EN	4x05278	[2:22]	2116h	278	278
	279)DIO2 THRESHOLD	4x05279	[2:23]	2117h	279	279
	280)DIO2 INVERT MODE	4x05280	[2:24]	2118h	280	280
	281)DIO2 IP HI VALUE	4x05281	[2:25]	2119h	281	281
	282)DIO2 IP LO VALUE	4x05282	[2:26]	211Ah	282	282
	283)DIO3 OP MODE	4x05283	[2:27]	211Bh	283	283
	284)DIO3 RECTIFY EN	4x05284	[2:28]	211Ch	284	284
	285)DIO3 THRESHOLD	4x05285	[2:29]	211Dh	285	285
	286)DIO3 INVERT MODE	4x05286	[2:30]	211Eh	286	286
	287)DIO3 IP HI VALUE	4x05287	[2:31]	211Fh	287	287
	288)DIO3 IP LO VALUE	4x05288	[2:32]	2120h	288	288
	289)DIO4 OP MODE	4x05289	[2:33]	2121h	289	289
	290)DIO4 RECTIFY EN	4x05290	[2:34]	2122h	290	290
	291)DIO4 THRESHOLD	4x05291	[2:35]	2123h	291	291
	292)DIO4 INVERT MODE	4x05292	[2:36]	2124h	292	292

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	293)DIO4 IP HI VALUE	4x05293	[2:37]	2125h	293	293
	294)DIO4 IP LO VALUE	4x05294	[2:38]	2126h	294	294
	296)DIGITAL POST 1	4x05296	[2:40]	2128h	296	296
	297)DIGITAL POST 2	4x05297	[2:41]	2129h	297	297
	298)DIGITAL POST 3	4x05298	[2:42]	212Ah	298	298
	299)DIGITAL POST 4	4x05299	[2:43]	212Bh	299	299
	300)ANALOG POST 1	4x05300	[2:44]	212Ch	300	300
	301)ANALOG POST 2	4x05301	[2:45]	212Dh	301	301
	302)ANALOG POST 3	4x05302	[2:46]	212Eh	302	302
	303)ANALOG POST 4	4x05303	[2:47]	212Fh	303	303
	305)ANDED RUN	4x05305	[2:49]	2131h	305	305
	306)ANDED JOG	4x05306	[2:50]	2132h	306	306
	307)ANDED START	4x05307	[2:51]	2133h	307	307
	308)INTERNAL RUN IP	4x05308	[2:52]	2134h	308	308
	310)DIP1 IP HI VALUE	4x05310	[2:54]	2136h	310	310
	311)DIP1 IP LO VALUE	4x05311	[2:55]	2137h	311	311
	312)DIP2 IP HI VALUE	4x05312	[2:56]	2138h	312	312
	313)DIP2 IP LO VALUE	4x05313	[2:57]	2139h	313	313
	314)DIP3 IP HI VALUE	4x05314	[2:58]	213Ah	314	314
	315)DIP3 IP LO VALUE	4x05315	[2:59]	213Bh	315	315
	316)DIP4 IP HI VALUE	4x05316	[2:60]	213Ch	316	316
	317)DIP4 IP LO VALUE	4x05317	[2:61]	213Dh	317	317
	318)RUN IP HI VALUE	4x05318	[2:62]	213Eh	318	318
	319)RUN IP LO VALUE	4x05319	[2:63]	213Fh	319	319
	320)UIP2 IP RANGE	4x05320	[2:64]	2140h	320	320
	321)UIP2 IP OFFSET	4x05321	[2:65]	2141h	321	321
	322)UIP2 CAL RATIO	4x05322	[2:66]	2142h	322	322
	323)UIP2 MAX CLAMP	4x05323	[2:67]	2143h	323	323
	324)UIP2 MIN CLAMP	4x05324	[2:68]	2144h	324	324
	325)UIP2 HI VAL OP1	4x05325	[2:69]	2145h	325	325
	326)UIP2 LO VAL OP1	4x05326	[2:70]	2146h	326	326
	327)UIP2 HI VAL OP2	4x05327	[2:71]	2147h	327	327
	328)UIP2 LO VAL OP2	4x05328	[2:72]	2148h	328	328
	329)UIP2 THRESHOLD	4x05329	[2:73]	2149h	329	329
	330)UIP3 IP RANGE	4x05330	[2:74]	214Ah	330	330
	331)UIP3 IP OFFSET	4x05331	[2:75]	214Bh	331	331
	332)UIP3 CAL RATIO	4x05332	[2:76]	214Ch	332	332
	333)UIP3 MAX CLAMP	4x05333	[2:77]	214Dh	333	333
	334)UIP3 MIN CLAMP	4x05334	[2:78]	214Eh	334	334
	335)UIP3 HI VAL OP1	4x05335	[2:79]	214Fh	335	335

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	336)UIP3 LO VAL OP1	4x05336	[2:80]	2150h	336	336
	337)UIP3 HI VAL OP2	4x05337	[2:81]	2151h	337	337
	338)UIP3 LO VAL OP2	4x05338	[2:82]	2152h	338	338
	339)UIP3 THRESHOLD	4x05339	[2:83]	2153h	339	339
	340)UIP4 IP RANGE	4x05340	[2:84]	2154h	340	340
	341)UIP4 IP OFFSET	4x05341	[2:85]	2155h	341	341
	342)UIP4 CAL RATIO	4x05342	[2:86]	2156h	342	342
	343)UIP4 MAX CLAMP	4x05343	[2:87]	2157h	343	343
	344)UIP4 MIN CLAMP	4x05344	[2:88]	2158h	344	344
	345)UIP4 HI VAL OP1	4x05345	[2:89]	2159h	345	345
	346)UIP4 LO VAL OP1	4x05346	[2:90]	215Ah	346	346
	347)UIP4 HI VAL OP2	4x05347	[2:91]	215Bh	347	347
	348)UIP4 LO VAL OP2	4x05348	[2:92]	215Ch	348	348
	349)UIP4 THRESHOLD	4x05349	[2:93]	215Dh	349	349
	350)UIP5 IP RANGE	4x05350	[2:94]	215Eh	350	350
	351)UIP5 IP OFFSET	4x05351	[2:95]	215Fh	351	351
	352)UIP5 CAL RATIO	4x05352	[2:96]	2160h	352	352
	353)UIP5 MAX CLAMP	4x05353	[2:97]	2161h	353	353
	354)UIP5 MIN CLAMP	4x05354	[2:98]	2162h	354	354
	355)UIP5 HI VAL OP1	4x05355	[2:99]	2163h	355	355
	356)UIP5 LO VAL OP1	4x05356	[2:100]	2164h	356	356
	357)UIP5 HI VAL OP2	4x05357	[2:101]	2165h	357	357
	358)UIP5 LO VAL OP2	4x05358	[2:102]	2166h	358	358
	359)UIP5 THRESHOLD	4x05359	[2:103]	2167h	359	359
	360)UIP6 IP RANGE	4x05360	[2:104]	2168h	360	360
	361)UIP6 IP OFFSET	4x05361	[2:105]	2169h	361	361
	362)UIP6 CAL RATIO	4x05362	[2:106]	216Ah	362	362
	363)UIP6 MAX CLAMP	4x05363	[2:107]	216Bh	363	363
	364)UIP6 MIN CLAMP	4x05364	[2:108]	216Ch	364	364
	365)UIP6 HI VAL OP1	4x05365	[2:109]	216Dh	365	365
	366)UIP6 LO VAL OP1	4x05366	[2:110]	216Eh	366	366
	367)UIP6 HI VAL OP2	4x05367	[2:111]	216Fh	367	367
	368)UIP6 LO VAL OP2	4x05368	[2:112]	2170h	368	368
	369)UIP6 THRESHOLD	4x05369	[2:113]	2171h	369	369
	370)UIP7 IP RANGE	4x05370	[2:114]	2172h	370	370
	371)UIP7 IP OFFSET	4x05371	[2:115]	2173h	371	371
	372)UIP7 CAL RATIO	4x05372	[2:116]	2174h	372	372
	373)UIP7 MAX CLAMP	4x05373	[2:117]	2175h	373	373
	374)UIP7 MIN CLAMP	4x05374	[2:118]	2176h	374	374
	375)UIP7 HI VAL OP1	4x05375	[2:119]	2177h	375	375

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	376)UIP7 LO VAL OP1	4x05376	[2:120]	2178h	376	376
	377)UIP7 HI VAL OP2	4x05377	[2:121]	2179h	377	377
	378)UIP7 LO VAL OP2	4x05378	[2:122]	217Ah	378	378
	379)UIP7 THRESHOLD	4x05379	[2:123]	217Bh	379	379
	380)UIP8 IP RANGE	4x05380	[2:124]	217Ch	380	380
	381)UIP8 IP OFFSET	4x05381	[2:125]	217Dh	381	381
	382)UIP8 CAL RATIO	4x05382	[2:126]	217Eh	382	382
	383)UIP8 MAX CLAMP	4x05383	[2:127]	217Fh	383	383
	384)UIP8 MIN CLAMP	4x05384	[2:128]	2180h	384	384
	385)UIP8 HI VAL OP1	4x05385	[2:129]	2181h	385	385
	386)UIP8 LO VAL OP1	4x05386	[2:130]	2182h	386	386
	387)UIP8 HI VAL OP2	4x05387	[2:131]	2183h	387	387
	388)UIP8 LO VAL OP2	4x05388	[2:132]	2184h	388	388
	389)UIP8 THRESHOLD	4x05389	[2:133]	2185h	389	389
	390)UIP9 IP RANGE	4x05390	[2:134]	2186h	390	390
	391)UIP9 IP OFFSET	4x05391	[2:135]	2187h	391	391
	392)UIP9 CAL RATIO	4x05392	[2:136]	2188h	392	392
	393)UIP9 MAX CLAMP	4x05393	[2:137]	2189h	393	393
	394)UIP9 MIN CLAMP	4x05394	[2:138]	218Ah	394	394
	395)UIP9 HI VAL OP1	4x05395	[2:139]	218Bh	395	395
	396)UIP9 LO VAL OP1	4x05396	[2:140]	218Ch	396	396
	397)UIP9 HI VAL OP2	4x05397	[2:141]	218Dh	397	397
	398)UIP9 LO VAL OP2	4x05398	[2:142]	218Eh	398	398
	399)UIP9 THRESHOLD	4x05399	[2:143]	218Fh	399	399
ro	401)SUMMER1 OP MON	4x05401	[2:145]	2191h	401	401
	402)SUMMER1 SIGN1	4x05402	[2:146]	2192h	402	402
	403)SUMMER1 SIGN2	4x05403	[2:147]	2193h	403	403
	404)SUMMER1 RATIO1	4x05404	[2:148]	2194h	404	404
	405)SUMMER1 RATIO2	4x05405	[2:149]	2195h	405	405
	406)SUMMER1 DIVIDER1	4x05406	[2:150]	2196h	406	406
	407)SUMMER1 DIVIDER2	4x05407	[2:151]	2197h	407	407
	408)SUMMER1 INPUT1	4x05408	[2:152]	2198h	408	408
	409)SUMMER1 INPUT2	4x05409	[2:153]	2199h	409	409
	410)SUMMER1 INPUT3	4x05410	[2:154]	219Ah	410	410
	411)SUMMER1 DEADBAND	4x05411	[2:155]	219Bh	411	411
	412)SUMMER1 OP INVRT	4x05412	[2:156]	219Ch	412	412
	413)SUMMER1 CLAMP	4x05413	[2:157]	219Dh	413	413
ro	415)SUMMER2 OP MON	4x05415	[2:159]	219Fh	415	415
	416)SUMMER2 SIGN1	4x05416	[2:160]	21A0h	416	416
	417)SUMMER2 SIGN2	4x05417	[2:161]	21A1h	417	417

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	418)SUMMER2 RATIO1	4x05418	[2:162]	21A2h	418	418
	419)SUMMER2 RATIO2	4x05419	[2:163]	21A3h	419	419
	420)SUMMER2 DIVIDER1	4x05420	[2:164]	21A4h	420	420
	421)SUMMER2 DIVIDER2	4x05421	[2:165]	21A5h	421	421
	422)SUMMER2 INPUT1	4x05422	[2:166]	21A6h	422	422
	423)SUMMER2 INPUT2	4x05423	[2:167]	21A7h	423	423
	424)SUMMER2 INPUT3	4x05424	[2:168]	21A8h	424	424
	425)SUMMER2 DEADBAND	4x05425	[2:169]	21A9h	425	425
	426)SUMMER2 OP INVRT	4x05426	[2:170]	21AAh	426	426
	427)SUMMER2 CLAMP	4x05427	[2:171]	21ABh	427	427
ro	429)PID1 OP MONITOR	4x05429	[2:173]	21ADh	429	429
	430)PID1 INPUT1	4x05430	[2:174]	21AEh	430	430
	431)PID1 RATIO1	4x05431	[2:175]	21AFh	431	431
	432)PID1 DIVIDER1	4x05432	[2:176]	21B0h	432	432
	433)PID1 INPUT2	4x05433	[2:177]	21B1h	433	433
	434)PID1 RATIO2	4x05434	[2:178]	21B2h	434	434
	435)PID1 DIVIDER2	4x05435	[2:179]	21B3h	435	435
	436)PID1 PROP GAIN	4x05436	[2:180]	21B4h	436	436
	437)PID1 INTEGRAL TC	4x05437	[2:181]	21B5h	437	437
	438)PID1 DERIV TC	4x05438	[2:182]	21B6h	438	438
	439)PID1 FILTER TC	4x05439	[2:183]	21B7h	439	439
	440)PID1 INT PRESET	4x05440	[2:184]	21B8h	440	440
	441)PID1 PRESET VAL	4x05441	[2:185]	21B9h	441	441
	442)PID1 RESET	4x05442	[2:186]	21BAh	442	442
	443)PID1 POS CLAMP	4x05443	[2:187]	21BBh	443	443
	444)PID1 NEG CLAMP	4x05444	[2:188]	21BCh	444	444
	445)PID1 OUTPUT TRIM	4x05445	[2:189]	21BDh	445	445
	446)PID1 PROFL MODE	4x05446	[2:190]	21BEh	446	446
	447)PID1 MIN PROP GN	4x05447	[2:191]	21BFh	447	447
	448)PID1 X-AXIS MIN	4x05448	[2:192]	21C0h	448	448
ro	449)PID1 PROFILED GN	4x05449	[2:193]	21C1h	449	449
ro	450)PID1 CLAMP FLAG	4x05450	[2:194]	21C2h	450	450
ro	451)PID1 ERROR MON	4x05451	[2:195]	21C3h	451	451
ro	452)PID2 OP MONITOR	4x05452	[2:196]	21C4h	452	452
	453)PID2 INPUT1	4x05453	[2:197]	21C5h	453	453
	454)PID2 RATIO1	4x05454	[2:198]	21C6h	454	454
	455)PID2 DIVIDER1	4x05455	[2:199]	21C7h	455	455
	456)PID2 INPUT2	4x05456	[2:200]	21C8h	456	456
	457)PID2 RATIO2	4x05457	[2:201]	21C9h	457	457
	458)PID2 DIVIDER2	4x05458	[2:202]	21CAh	458	458

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	459)PID2 PROP GAIN	4x05459	[2:203]	21CBh	459	459
	460)PID2 INTEGRAL TC	4x05460	[2:204]	21CCh	460	460
	461)PID2 DERIV TC	4x05461	[2:205]	21CDh	461	461
	462)PID2 FILTER TC	4x05462	[2:206]	21CEh	462	462
	463)PID2 INT PRESET	4x05463	[2:207]	21CFh	463	463
	464)PID2 PRESET VAL	4x05464	[2:208]	21D0h	464	464
	465)PID2 RESET	4x05465	[2:209]	21D1h	465	465
	466)PID2 POS CLAMP	4x05466	[2:210]	21D2h	466	466
	467)PID2 NEG CLAMP	4x05467	[2:211]	21D3h	467	467
	468)PID2 OUTPUT TRIM	4x05468	[2:212]	21D4h	468	468
	469)PID2 PROFL MODE	4x05469	[2:213]	21D5h	469	469
	470)PID2 MIN PROP GN	4x05470	[2:214]	21D6h	470	470
	471)PID2 X-AXIS MIN	4x05471	[2:215]	21D7h	471	471
ro	472)PID2 PROFILED GN	4x05472	[2:216]	21D8h	472	472
ro	473)PID2 CLAMP FLAG	4x05473	[2:217]	21D9h	473	473
ro	474)PID2 ERROR MON	4x05474	[2:218]	21DAh	474	474
ro	475)PROFILE Y OP MON	4x05475	[2:219]	21DBh	475	475
	476)PROFILER MODE	4x05476	[2:220]	21DCh	476	476
	477)PROFLR Y AT Xmin	4x05477	[2:221]	21DDh	477	477
	478)PROFLR Y AT Xmax	4x05478	[2:222]	21DEh	478	478
	479)PROFILER Xmin	4x05479	[2:223]	21DFh	479	479
	480)PROFILER Xmax	4x05480	[2:224]	21E0h	480	480
	481)PROFLR X RECTIFY	4x05481	[2:225]	21E1h	481	481
ro	483)DIAMETER OP MON	4x05483	[2:227]	21E3h	483	483
	484)DIA WEB SPEED IP	4x05484	[2:228]	21E4h	484	484
	485)DIA REEL SPD IP	4x05485	[2:229]	21E5h	485	485
	486)DIAMETER MIN	4x05486	[2:230]	21E6h	486	486
	487)DIA MIN SPEED	4x05487	[2:231]	21E7h	487	487
	488)DIAMETER HOLD	4x05488	[2:232]	21E8h	488	488
	489)DIA FILTER TC	4x05489	[2:233]	21E9h	489	489
	490)DIAMETER PRESET	4x05490	[2:234]	21EAh	490	490
	491)DIA PRESET VALUE	4x05491	[2:235]	21EBh	491	491
	492)DIA WEB BRK THR.	4x05492	[2:236]	21ECh	492	492
	493)DIA MEM BOOT-UP	4x05493	[2:237]	21EDh	493	493
ro	494)TOTAL TENSION MN	4x05494	[2:238]	21EEh	494	494
	495)TENSION REF	4x05495	[2:239]	21EFh	495	495
	496)TAPER STRENGTH	4x05496	[2:240]	21F0h	496	496
	497)HYPERBOLIC TAPER	4x05497	[2:241]	21F1h	497	497
	498)TENSION TRIM IP	4x05498	[2:242]	21F2h	498	498
ro	499)TAPERED TENS.MON	4x05499	[2:243]	21F3h	499	499

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	500)TORQUE DEMAND MN	4x05500	[2:244]	21F4h	500	500
	501)TORQUE TRIM IP	4x05501	[2:245]	21F5h	501	501
	502)STICTION COMP	4x05502	[2:246]	21F6h	502	502
	503)STIC.WEB SPD THR	4x05503	[2:247]	21F7h	503	503
	504)STATIC FRICTION	4x05504	[2:248]	21F8h	504	504
	505)DYNAMIC FRICTION	4x05505	[2:249]	21F9h	505	505
	506)FRICTION SIGN	4x05506	[2:250]	21FAh	506	506
	507)FIXED INERTIA	4x05507	[2:251]	21FBh	507	507
	508)VARIABLE INERTIA	4x05508	[2:252]	21FCh	508	508
	509)MATERIAL WIDTH	4x05509	[2:253]	21FDh	509	509
	510)ACCEL LINE SPEED	4x05510	[2:254]	21FEh	510	510
	511)ACCEL SCALER	4x05511	[3:0]	21FFh	511	511
	512)ACCEL INPUT/MON	4x05512	[3:1]	2200h	512	512
	513)ACCEL FILTER TC	4x05513	[3:2]	2201h	513	513
	514)TENSION DEM IP	4x05514	[3:3]	2202h	514	514
	515)TENSION SCALER	4x05515	[3:4]	2203h	515	515
	516)TORQUE MEM SEL	4x05516	[3:5]	2204h	516	516
	517)TORQUE MEM INPUT	4x05517	[3:6]	2205h	517	517
	518)TENSION ENABLE	4x05518	[3:7]	2206h	518	518
	519)OVER/UNDERWIND	4x05519	[3:8]	2207h	519	519
ro	520)INERTIA COMP MON	4x05520	[3:9]	2208h	520	520
ro	523)PRESET OP MON	4x05523	[3:12]	220Bh	523	523
	524)PRESET SEL1(LSB)	4x05524	[3:13]	220Ch	524	524
	525)PRESET SELECT 2	4x05525	[3:14]	220Dh	525	525
	526)PRESET SEL3(MSB)	4x05526	[3:15]	220Eh	526	526
	527)PR.VALUE FOR 000	4x05527	[3:16]	220Fh	527	527
	528)PR.VALUE FOR 001	4x05528	[3:17]	2210h	528	528
	529)PR.VALUE FOR 010	4x05529	[3:18]	2211h	529	529
	530)PR.VALUE FOR 011	4x05530	[3:19]	2212h	530	530
	531)PR.VALUE FOR 100	4x05531	[3:20]	2213h	531	531
	532)PR.VALUE FOR 101	4x05532	[3:21]	2214h	532	532
	533)PR.VALUE FOR 110	4x05533	[3:22]	2215h	533	533
	534)PR.VALUE FOR 111	4x05534	[3:23]	2216h	534	534
ro	535)DEMULX O/P BIT1	4x05535	[3:24]	2217h	535	535
ro	536)DEMULX O/P BIT2	4x05536	[3:25]	2218h	536	536
ro	537)DEMULX O/P BIT3	4x05537	[3:26]	2219h	537	537
ro	538)DEMULX O/P BIT4	4x05538	[3:27]	221Ah	538	538
ro	539)DEMULX O/P BIT5	4x05539	[3:28]	221Bh	539	539
ro	540)DEMULX O/P BIT6	4x05540	[3:29]	221Ch	540	540
ro	541)DEMULX O/P BIT7	4x05541	[3:30]	221Dh	541	541

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	542)DEMULX O/P BIT8	4x05542	[3:31]	221Eh	542	542
ro	543)DEMULX O/P BIT9	4x05543	[3:32]	221Fh	543	543
	544)MULTIFUN1 MODE	4x05544	[3:33]	2220h	544	544
	545)MULTIFUN1 OP SEL	4x05545	[3:34]	2221h	545	545
	546)MULTIFUN2 MODE	4x05546	[3:35]	2222h	546	546
	547)MULTIFUN2 OP SEL	4x05547	[3:36]	2223h	547	547
	548)MULTIFUN3 MODE	4x05548	[3:37]	2224h	548	548
	549)MULTIFUN3 OP SEL	4x05549	[3:38]	2225h	549	549
	550)MULTIFUN4 MODE	4x05550	[3:39]	2226h	550	550
	551)MULTIFUN4 OP SEL	4x05551	[3:40]	2227h	551	551
	552)MULTIFUN5 MODE	4x05552	[3:41]	2228h	552	552
	553)MULTIFUN5 OP SEL	4x05553	[3:42]	2229h	553	553
	554)MULTIFUN6 MODE	4x05554	[3:43]	222Ah	554	554
	555)MULTIFUN6 OP SEL	4x05555	[3:44]	222Bh	555	555
	556)MULTIFUN7 MODE	4x05556	[3:45]	222Ch	556	556
	557)MULTIFUN7 OP SEL	4x05557	[3:46]	222Dh	557	557
	558)MULTIFUN8 MODE	4x05558	[3:47]	222Eh	558	558
	559)MULTIFUN8 OP SEL	4x05559	[3:48]	222Fh	559	559
ro	560)LATCH OUTPUT MON	4x05560	[3:49]	2230h	560	560
	561)LATCH DATA IP	4x05561	[3:50]	2231h	561	561
	562)LATCH CLOCK IP	4x05562	[3:51]	2232h	562	562
	563)LATCH SET IP	4x05563	[3:52]	2233h	563	563
	564)LATCH RESET IP	4x05564	[3:53]	2234h	564	564
	565)LATCH HI VALUE	4x05565	[3:54]	2235h	565	565
	566)LATCH LO VALUE	4x05566	[3:55]	2236h	566	566
ro	567)DEMULX O/P BIT10	4x05567	[3:56]	2237h	567	567
ro	568)FILTER1 OP MON	4x05568	[3:57]	2238h	568	568
	569)FILTER1 TC	4x05569	[3:58]	2239h	569	569
ro	570)DEMULX O/P BIT11	4x05570	[3:59]	223Ah	570	570
ro	571)DEMULX O/P BIT12	4x05571	[3:60]	223Bh	571	571
ro	572)DEMULX O/P BIT13	4x05572	[3:61]	223Ch	572	572
ro	573)FILTER2 OP MON	4x05573	[3:62]	223Dh	573	573
	574)FILTER2 TC	4x05574	[3:63]	223Eh	574	574
ro	575)DEMULX O/P BIT14	4x05575	[3:64]	223Fh	575	575
ro	576)DEMULX O/P BIT15	4x05576	[3:65]	2240h	576	576
ro	577)DEMULX O/P BIT16	4x05577	[3:66]	2241h	577	577
ro	578)COUNTER COUNT	4x05578	[3:67]	2242h	578	578
	579)COUNTER CLOCK	4x05579	[3:68]	2243h	579	579
	580)COUNTER RESET	4x05580	[3:69]	2244h	580	580
	581)COUNTER TARGET	4x05581	[3:70]	2245h	581	581

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	582)COUNTER>=TARGET	4x05582	[3:71]	2246h	582	582
ro	583)TMR ELAPSED TIME	4x05583	[3:72]	2247h	583	583
	584)TIMER RESET	4x05584	[3:73]	2248h	584	584
	585)TIMER INTERVAL	4x05585	[3:74]	2249h	585	585
ro	586)TMR EXPIRED FLAG	4x05586	[3:75]	224Ah	586	586
	588)COMP1 INPUT 1	4x05588	[3:77]	224Ch	588	588
	589)COMP1 INPUT 2	4x05589	[3:78]	224Dh	589	589
	590)COMP1 WINDOW SEL	4x05590	[3:79]	224Eh	590	590
	591)COMP1 HYSTERESIS	4x05591	[3:80]	224Fh	591	591
	592)COMP2 INPUT 1	4x05592	[3:81]	2250h	592	592
	593)COMP2 INPUT 2	4x05593	[3:82]	2251h	593	593
	594)COMP2 WINDOW SEL	4x05594	[3:83]	2252h	594	594
	595)COMP2 HYSTERESIS	4x05595	[3:84]	2253h	595	595
	596)COMP3 INPUT 1	4x05596	[3:85]	2254h	596	596
	597)COMP3 INPUT 2	4x05597	[3:86]	2255h	597	597
	598)COMP3 WINDOW SEL	4x05598	[3:87]	2256h	598	598
	599)COMP3 HYSTERESIS	4x05599	[3:88]	2257h	599	599
	600)COMP4 INPUT 1	4x05600	[3:89]	2258h	600	600
	601)COMP4 INPUT 2	4x05601	[3:90]	2259h	601	601
	602)COMP4 WINDOW SEL	4x05602	[3:91]	225Ah	602	602
	603)COMP4 HYSTERESIS	4x05603	[3:92]	225Bh	603	603
	604)C/O SW1 CONTROL	4x05604	[3:93]	225Ch	604	604
	605)C/O SW1 HI VALUE	4x05605	[3:94]	225Dh	605	605
	606)C/O SW1 LO VALUE	4x05606	[3:95]	225Eh	606	606
	607)C/O SW2 CONTROL	4x05607	[3:96]	225Fh	607	607
	608)C/O SW2 HI VALUE	4x05608	[3:97]	2260h	608	608
	609)C/O SW2 LO VALUE	4x05609	[3:98]	2261h	609	609
	610)C/O SW3 CONTROL	4x05610	[3:99]	2262h	610	610
	611)C/O SW3 HI VALUE	4x05611	[3:100]	2263h	611	611
	612)C/O SW3 LO VALUE	4x05612	[3:101]	2264h	612	612
	613)C/O SW4 CONTROL	4x05613	[3:102]	2265h	613	613
	614)C/O SW4 HI VALUE	4x05614	[3:103]	2266h	614	614
	615)C/O SW4 LO VALUE	4x05615	[3:104]	2267h	615	615
ro	676)ENCODER WARNING	4x05676	[3:165]	22A4h	676	676
	677)RECIPE PAGE	4x05677	[3:166]	22A5h	677	677
	678)MAX CUR RESPONSE	4x05678	[3:167]	22A6h	678	678
ro	679)ID ABCXRxxx MON	4x05679	[3:168]	22A7h	679	679
	680)Iarm BURDEN OHMS	4x05680	[3:169]	22A8h	680	680
ro	681)P.SAVED ONCE MON	4x05681	[3:170]	22A9h	681	681
ro	682)DOP1 O/P BIN VAL	4x05682	[3:171]	22AAh	682	682

PL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	683)DOP2 O/P BIN VAL	4x05683	[3:172]	22ABh	683	683
ro	684)DOP3 O/P BIN VAL	4x05684	[3:173]	22ACh	684	684
ro	685)DIO1 O/P BIN VAL	4x05685	[3:174]	22ADh	685	685
ro	686)DIO2 O/P BIN VAL	4x05686	[3:175]	22AEh	686	686
ro	687)DIO3 O/P BIN VAL	4x05687	[3:176]	22AFh	687	687
ro	688)DIO4 O/P BIN VAL	4x05688	[3:177]	22B0h	688	688
ro	689)IN JOG FLAG	4x05689	[3:178]	22B1h	689	689
ro	690)WEB BREAK FLAG	4x05690	[3:179]	22B2h	690	690
ro	691)SUM1 CH2 SUBTOT.	4x05691	[3:180]	22B3h	691	691
ro	692)SUM1 CH1 SUBTOT.	4x05692	[3:181]	22B4h	692	692
ro	693)SUM2 CH2 SUBTOT.	4x05693	[3:182]	22B5h	693	693
ro	694)SUM2 CH1 SUBTOT.	4x05694	[3:183]	22B6h	694	694
ro	695)WEB SPEED RECT.	4x05695	[3:184]	22B7h	695	695
ro	696)REEL SPEED RECT.	4x05696	[3:185]	22B8h	696	696
ro	697)DIAMETER UNFILT.	4x05697	[3:186]	22B9h	697	697
ro	698)HEALTHY FLAG	4x05698	[3:187]	22BAh	698	698
ro	699)READY FLAG	4x05699	[3:188]	22BBh	699	699
ro	700)STALL WARNING	4x05700	[3:189]	22BCh	700	700
ro	701)REF XC WARNING	4x05701	[3:190]	22BDh	701	701
ro	702)THERMISTOR WARN	4x05702	[3:191]	22BEh	702	702
ro	703)SPEED FBK WARN	4x05703	[3:192]	22BFh	703	703
ro	704)ILOOP OFF WARN	4x05704	[3:193]	22C0h	704	704
	705)LP FILTER INPUT	4x05705	[3:194]	22C1h	705	705
ro	706)LP FILTER OUTPUT	4x05706	[3:195]	22C2h	706	706
ro	707)AUTOTUNE MONITOR	4x05707	[3:196]	22C3h	707	707
	708)REMOTE PARAM RCV	4x05708	[3:197]	22C4h	708	708
ro	709)MOTOR RPM %	4x05709	[3:198]	22C5h	709	709
	710)POSITION COUNT	4x05710	[3:199]	22C6h	710	710
	711)POS CNT DIVIDER	4x05711	[3:200]	22C7h	711	711
	712)USER ALARM INPUT	4x05712	[3:201]	22C8h	712	712
ro	713)SPEED LOOP PI OP	4x05713	[3:202]	22C9h	713	713
ro	714)IN SLACK FLAG	4x05714	[3:203]	22CAh	714	714
ro	715)SPD FBK % UNF	4x05715	[3:204]	22CBh	715	715
ro	716)TACHO % UNF	4x05716	[3:205]	22CCh	716	716
ro	717)MOTOR RPM UNF	4x05717	[3:206]	22CDh	717	717
ro	718)CUR DEMAND UNF	4x05718	[3:207]	22CEh	718	718
ro	719)CUR FBK % UNF	4x05719	[3:208]	22CFh	719	719
ro	720)SYSTEM RESET	4x05720	[3:209]	22D0h	720	720

7.2 JL/X parameters

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	2)STATOR CURRENT	4x05002	[1:1]	2002h	2	2
	3)CURRENT LIMIT(%)	4x05003	[1:2]	2003h	3	3
	6)MAX RATED RPM	4x05006	[1:5]	2006h	6	6
	7)ZERO SPD OFFSET	4x05007	[1:6]	2007h	7	7
	8)MAX TACHO VOLTS	4x05008	[1:7]	2008h	8	8
	9)SPEED FBK TYPE	4x05009	[1:8]	2009h	9	9
	10)QUADRATURE ENABLE	4x05010	[1:9]	200Ah	10	10
	11)ENCODER LINES	4x05011	[1:10]	200Bh	11	11
	12)MOT/ENC SPD RATIO	4x05012	[1:11]	200Ch	12	12
	13)ENCODER SIGN	4x05013	[1:12]	200Dh	13	13
	16)STATOR VOLTS TRIM	4x05016	[1:15]	2010h	16	16
	17)ANALOG TACHO TRIM	4x05017	[1:16]	2011h	17	17
	18)STATOR MAX VOLTS	4x05018	[1:17]	2012h	18	18
	19)EL1/2/3 RATED AC	4x05019	[1:18]	2013h	19	19
	20)MOTOR 1,2 SELECT	4x05020	[1:19]	2014h	20	20
ro	21)RAMP OP MONITOR	4x05021	[1:20]	2015h	21	21
	22)FWD ACCEL TIME	4x05022	[1:21]	2016h	22	22
	23)FWD DECEL TIME	4x05023	[1:22]	2017h	23	23
	24)REV ACCEL TIME	4x05024	[1:23]	2018h	24	24
	25)REV DECEL TIME	4x05025	[1:24]	2019h	25	25
	26)RAMP INPUT	4x05026	[1:25]	201Ah	26	26
	27)FORWARD MIN SPEED	4x05027	[1:26]	201Bh	27	27
	28)REVERSE MIN SPEED	4x05028	[1:27]	201Ch	28	28
	29)RAMP AUTO PRESET	4x05029	[1:28]	201Dh	29	29
	30)RAMP EXT PRESET	4x05030	[1:29]	201Eh	30	30
	31)RAMP PRESET VALUE	4x05031	[1:30]	201Fh	31	31
	32)RAMP S-PROFILE %	4x05032	[1:31]	2020h	32	32
	33)RAMP HOLD	4x05033	[1:32]	2021h	33	33
	34)RAMPING THRESHOLD	4x05034	[1:33]	2022h	34	34
ro	35)RAMPING FLAG	4x05035	[1:34]	2023h	35	35
	56)STOP RAMP TIME	4x05056	[1:55]	2038h	56	56
	57)STOP TIME LIMIT	4x05057	[1:56]	2039h	57	57
	58)LIVE DELAY MODE	4x05058	[1:57]	203Ah	58	58
	59)DROP-OUT SPEED	4x05059	[1:58]	203Bh	59	59
	60)DROP-OUT DELAY	4x05060	[1:59]	203Ch	60	60
	62)INT SPEED REF 1	4x05062	[1:61]	203Eh	62	62
	63)SPEED REF 2	4x05063	[1:62]	203Fh	63	63

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	64)SPEED REF 3 MON	4x05064	[1:63]	2040h	64	64
	65)RAMPED SPD REF 4	4x05065	[1:64]	2041h	65	65
	66)SPD/CUR REF3 SIGN	4x05066	[1:65]	2042h	66	66
	67)SPD/CUR RF3 RATIO	4x05067	[1:66]	2043h	67	67
	69)MAX POS SPEED REF	4x05069	[1:68]	2045h	69	69
	70)MAX NEG SPEED REF	4x05070	[1:69]	2046h	70	70
	71)SPEED PROP GAIN	4x05071	[1:70]	2047h	71	71
	72)SPEED INT T.C.	4x05072	[1:71]	2048h	72	72
	73)SPEED INT RESET	4x05073	[1:72]	2049h	73	73
	74)SPD ADPT LO BRPNT	4x05074	[1:73]	204Ah	74	74
	75)SPD ADPT HI BRPNT	4x05075	[1:74]	204Bh	75	75
	76)LO BRPNT PRP GAIN	4x05076	[1:75]	204Ch	76	76
	77)LO BRPNT INT T.C.	4x05077	[1:76]	204Dh	77	77
	78)INT % DURING RAMP	4x05078	[1:77]	204Eh	78	78
	79)SPD ADAPT ENABLE	4x05079	[1:78]	204Fh	79	79
	81)CUR CLAMP SCALER	4x05081	[1:80]	2051h	81	81
	82)O/LOAD % TARGET	4x05082	[1:81]	2052h	82	82
	83)O/LOAD RAMP TIME	4x05083	[1:82]	2053h	83	83
	84)I PROFILE ENABLE	4x05084	[1:83]	2054h	84	84
	85)SPD BRPNT AT HI I	4x05085	[1:84]	2055h	85	85
	86)SPD BRPNT AT LO I	4x05086	[1:85]	2056h	86	86
	87)CUR LIMIT AT LO I	4x05087	[1:86]	2057h	87	87
	88)DUAL I CLAMP ENBL	4x05088	[1:87]	2058h	88	88
	89)UPPER CUR CLAMP	4x05089	[1:88]	2059h	89	89
	90)LOWER CUR CLAMP	4x05090	[1:89]	205Ah	90	90
	91)EXTRA CUR REF	4x05091	[1:90]	205Bh	91	91
	92)AUTOTUNE ENABLE	4x05092	[1:91]	205Ch	92	92
	93)CUR PROP GAIN	4x05093	[1:92]	205Dh	93	93
	94)CUR INT GAIN	4x05094	[1:93]	205Eh	94	94
	95)CUR DISCONTINUITY	4x05095	[1:94]	205Fh	95	95
	96)4-QUADRANT MODE	4x05096	[1:95]	2060h	96	96
	97)SPD BYPASS CUR EN	4x05097	[1:96]	2061h	97	97
	98)STA FIR.FRNT STOP	4x05098	[1:97]	2062h	98	98
	115)STANDSTILL ENBL	4x05115	[1:114]	2073h	115	115
	116)ZERO REF START	4x05116	[1:115]	2074h	116	116
	117)ZERO INTLK SPD %	4x05117	[1:116]	2075h	117	117
	118)ZERO INTLK CUR %	4x05118	[1:117]	2076h	118	118
ro	119)AT ZERO REF FLAG	4x05119	[1:118]	2077h	119	119
ro	120)AT ZERO SPD FLAG	4x05120	[1:119]	2078h	120	120
ro	121)AT STANDSTILL	4x05121	[1:120]	2079h	121	121

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
ro	123)TOTAL SPD REF MN	4x05123	[1:122]	207Bh	123	123
ro	124)SPEED DEMAND MON	4x05124	[1:123]	207Ch	124	124
ro	125)SPEED ERROR MON	4x05125	[1:124]	207Dh	125	125
ro	126)STATOR VOLTS MON	4x05126	[1:125]	207Eh	126	126
ro	127)STATOR VOLTS %	4x05127	[1:126]	207Fh	127	127
ro	128)BACK EMF % MON	4x05128	[1:127]	2080h	128	128
ro	130)MOTOR RPM MON	4x05130	[1:129]	2082h	130	130
ro	131)SPEED FBK MON	4x05131	[1:130]	2083h	131	131
ro	132)ENCODER RPM MON	4x05132	[1:131]	2084h	132	132
ro	133)STATOR I DEM MON	4x05133	[1:132]	2085h	133	133
ro	134)STATOR I % MON	4x05134	[1:133]	2086h	134	134
ro	135)STATOR AMPS MON	4x05135	[1:134]	2087h	135	135
ro	136)UPPER CUR LIM MN	4x05136	[1:135]	2088h	136	136
ro	137)LOWER CUR LIM MN	4x05137	[1:136]	2089h	137	137
ro	138)ACTUAL UPPER LIM	4x05138	[1:137]	208Ah	138	138
ro	139)ACTUAL LOWER LIM	4x05139	[1:138]	208Bh	139	139
ro	140)O/LOAD LIMIT MON	4x05140	[1:139]	208Ch	140	140
ro	141)AT CURRENT LIMIT	4x05141	[1:140]	208Dh	141	141
ro	150)UIP2 (T2) MON	4x05150	[1:149]	2096h	150	150
ro	151)UIP3 (T3) MON	4x05151	[1:150]	2097h	151	151
ro	152)UIP4 (T4) MON	4x05152	[1:151]	2098h	152	152
ro	153)UIP5 (T5) MON	4x05153	[1:152]	2099h	153	153
ro	154)UIP6 (T6) MON	4x05154	[1:153]	209Ah	154	154
ro	155)UIP7 (T7) MON	4x05155	[1:154]	209Bh	155	155
ro	156)UIP8 (T8) MON	4x05156	[1:155]	209Ch	156	156
ro	157)UIP9 (T9) MON	4x05157	[1:156]	209Dh	157	157
ro	159)AOP1 (T10) MON	4x05159	[1:158]	209Fh	159	159
ro	160)AOP2 (T11) MON	4x05160	[1:159]	20A0h	160	160
ro	161)AOP3 (T12) MON	4x05161	[1:160]	20A1h	161	161
ro	162)UIP 23456789	4x05162	[1:161]	20A2h	162	162
ro	163)DIP 12341234 DIO	4x05163	[1:162]	20A3h	163	163
ro	164)DOP 123TRJSC CIP	4x05164	[1:163]	20A4h	164	164
ro	165)+STA BRIDGE FLAG	4x05165	[1:164]	20A5h	165	165
ro	166)DRIVE START FLAG	4x05166	[1:165]	20A6h	166	166
ro	167)DRIVE RUN FLAG	4x05167	[1:166]	20A7h	167	167
ro	168)RUNNING MODE MON	4x05168	[1:167]	20A8h	168	168
ro	169)EL1/2 RMS MON	4x05169	[1:168]	20A9h	169	169
ro	170)AC KILOWATTS MON	4x05170	[1:169]	20AAh	170	170
	171)SPD TRIP ENABLE	4x05171	[1:170]	20ABh	171	171
	172)SPEED TRIP TOL	4x05172	[1:171]	20ACh	172	172

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	174)DOP SCCT TRIP EN	4x05174	[1:173]	20AEh	174	174
	175)MISSING PULSE EN	4x05175	[1:174]	20AFh	175	175
	176)REF EXCH TRIP EN	4x05176	[1:175]	20B0h	176	176
	177)OVERSPEED DELAY	4x05177	[1:176]	20B1h	177	177
	178)STALL TRIP ENBL	4x05178	[1:177]	20B2h	178	178
	179)STALL CUR LEVEL	4x05179	[1:178]	20B3h	179	179
	180)STALL DELAY TIME	4x05180	[1:179]	20B4h	180	180
ro	181)ACTIVE TRIP MON	4x05181	[1:180]	20B5h	181	181
ro	182)STORED TRIP MON	4x05182	[1:181]	20B6h	182	182
	183)EXT TRIP RESET	4x05183	[1:182]	20B7h	183	183
	187)PORT1 BAUD RATE	4x05187	[1:186]	20BBh	187	187
	188)PORT1 FUNCTION	4x05188	[1:187]	20BCh	188	188
	189)REF XC SLV RATIO	4x05189	[1:188]	20BDh	189	189
	190)REF XC SLV SIGN	4x05190	[1:189]	20BEh	190	190
ro	191)REF XC SLAVE MON	4x05191	[1:190]	20BFh	191	191
ro	192)REF XC MASTER MN	4x05192	[1:191]	20C0h	192	192
	193)PORT1 GROUP ID	4x05193	[1:192]	20C1h	193	193
	194)PORT1 UNIT ID	4x05194	[1:193]	20C2h	194	194
	195)PORT1 ERROR CODE	4x05195	[1:194]	20C3h	195	195
	196)P1 DOP3 RTS MODE	4x05196	[1:195]	20C4h	196	196
	199)FBUS DATA CONTRL	4x05199	[1:198]	20C7h	199	199
ro	200)FBUS ON-LINE MON	4x05200	[1:199]	20C8h	200	200
	202)FBUS NODE ID	4x05202	[1:201]	20CAh	202	202
ro	203)FBUS BITS INPUT	4x05203	[1:202]	20CBh	203	203
ro	213)FBUS BITS OUTPUT	4x05213	[1:212]	20D5h	213	213
ro	223)ANYBUS TYPE	4x05223	[1:222]	20DFh	223	223
	250)Ista OP RECTIFY	4x05250	[1:249]	20FAh	250	250
	251)AOP1 DIVIDER	4x05251	[1:250]	20FBh	251	251
	252)AOP1 OFFSET	4x05252	[1:251]	20FCh	252	252
	253)AOP1 RECTIFY EN	4x05253	[1:252]	20FDh	253	253
	254)AOP2 DIVIDER	4x05254	[1:253]	20FEh	254	254
	255)AOP2 OFFSET	4x05255	[1:254]	20FFh	255	255
	256)AOP2 RECTIFY EN	4x05256	[2:0]	2100h	256	256
	257)AOP3 DIVIDER	4x05257	[2:1]	2101h	257	257
	258)AOP3 OFFSET	4x05258	[2:2]	2102h	258	258
	259)AOP3 RECTIFY EN	4x05259	[2:3]	2103h	259	259
	260)SCOPE OP SELECT	4x05260	[2:4]	2104h	260	260
	261)DOP1 RECTIFY EN	4x05261	[2:5]	2105h	261	261
	262)DOP1 THRESHOLD	4x05262	[2:6]	2106h	262	262
	263)DOP1 INVERT MODE	4x05263	[2:7]	2107h	263	263

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	264)DOP2 RECTIFY EN	4x05264	[2:8]	2108h	264	264
	265)DOP2 THRESHOLD	4x05265	[2:9]	2109h	265	265
	266)DOP2 INVERT MODE	4x05266	[2:10]	210Ah	266	266
	267)DOP3 RECTIFY EN	4x05267	[2:11]	210Bh	267	267
	268)DOP3 THRESHOLD	4x05268	[2:12]	210Ch	268	268
	269)DOP3 INVERT MODE	4x05269	[2:13]	210Dh	269	269
	271)DIO1 OP MODE	4x05271	[2:15]	210Fh	271	271
	272)DIO1 RECTIFY EN	4x05272	[2:16]	2110h	272	272
	273)DIO1 THRESHOLD	4x05273	[2:17]	2111h	273	273
	274)DIO1 INVERT MODE	4x05274	[2:18]	2112h	274	274
	275)DIO1 IP HI VALUE	4x05275	[2:19]	2113h	275	275
	276)DIO1 IP LO VALUE	4x05276	[2:20]	2114h	276	276
	277)DIO2 OP MODE	4x05277	[2:21]	2115h	277	277
	278)DIO2 RECTIFY EN	4x05278	[2:22]	2116h	278	278
	279)DIO2 THRESHOLD	4x05279	[2:23]	2117h	279	279
	280)DIO2 INVERT MODE	4x05280	[2:24]	2118h	280	280
	281)DIO2 IP HI VALUE	4x05281	[2:25]	2119h	281	281
	282)DIO2 IP LO VALUE	4x05282	[2:26]	211Ah	282	282
	283)DIO3 OP MODE	4x05283	[2:27]	211Bh	283	283
	284)DIO3 RECTIFY EN	4x05284	[2:28]	211Ch	284	284
	285)DIO3 THRESHOLD	4x05285	[2:29]	211Dh	285	285
	286)DIO3 INVERT MODE	4x05286	[2:30]	211Eh	286	286
	287)DIO3 IP HI VALUE	4x05287	[2:31]	211Fh	287	287
	288)DIO3 IP LO VALUE	4x05288	[2:32]	2120h	288	288
	289)DIO4 OP MODE	4x05289	[2:33]	2121h	289	289
	290)DIO4 RECTIFY EN	4x05290	[2:34]	2122h	290	290
	291)DIO4 THRESHOLD	4x05291	[2:35]	2123h	291	291
	292)DIO4 INVERT MODE	4x05292	[2:36]	2124h	292	292
	293)DIO4 IP HI VALUE	4x05293	[2:37]	2125h	293	293
	294)DIO4 IP LO VALUE	4x05294	[2:38]	2126h	294	294
	296)DIGITAL POST 1	4x05296	[2:40]	2128h	296	296
	297)DIGITAL POST 2	4x05297	[2:41]	2129h	297	297
	298)DIGITAL POST 3	4x05298	[2:42]	212Ah	298	298
	299)DIGITAL POST 4	4x05299	[2:43]	212Bh	299	299
	300)ANALOG POST 1	4x05300	[2:44]	212Ch	300	300
	301)ANALOG POST 2	4x05301	[2:45]	212Dh	301	301
	302)ANALOG POST 3	4x05302	[2:46]	212Eh	302	302
	303)ANALOG POST 4	4x05303	[2:47]	212Fh	303	303
	305)ANDED RUN	4x05305	[2:49]	2131h	305	305
	306)ANDED JOG	4x05306	[2:50]	2132h	306	306

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	307)ANDED START	4x05307	[2:51]	2133h	307	307
	308)INTERNAL RUN IP	4x05308	[2:52]	2134h	308	308
	310)DIP1 IP HI VALUE	4x05310	[2:54]	2136h	310	310
	311)DIP1 IP LO VALUE	4x05311	[2:55]	2137h	311	311
	312)DIP2 IP HI VALUE	4x05312	[2:56]	2138h	312	312
	313)DIP2 IP LO VALUE	4x05313	[2:57]	2139h	313	313
	314)DIP3 IP HI VALUE	4x05314	[2:58]	213Ah	314	314
	315)DIP3 IP LO VALUE	4x05315	[2:59]	213Bh	315	315
	316)DIP4 IP HI VALUE	4x05316	[2:60]	213Ch	316	316
	317)DIP4 IP LO VALUE	4x05317	[2:61]	213Dh	317	317
	318)RUN IP HI VALUE	4x05318	[2:62]	213Eh	318	318
	319)RUN IP LO VALUE	4x05319	[2:63]	213Fh	319	319
	320)UIP2 IP RANGE	4x05320	[2:64]	2140h	320	320
	321)UIP2 IP OFFSET	4x05321	[2:65]	2141h	321	321
	322)UIP2 CAL RATIO	4x05322	[2:66]	2142h	322	322
	323)UIP2 MAX CLAMP	4x05323	[2:67]	2143h	323	323
	324)UIP2 MIN CLAMP	4x05324	[2:68]	2144h	324	324
	325)UIP2 HI VAL OP1	4x05325	[2:69]	2145h	325	325
	326)UIP2 LO VAL OP1	4x05326	[2:70]	2146h	326	326
	327)UIP2 HI VAL OP2	4x05327	[2:71]	2147h	327	327
	328)UIP2 LO VAL OP2	4x05328	[2:72]	2148h	328	328
	329)UIP2 THRESHOLD	4x05329	[2:73]	2149h	329	329
	330)UIP3 IP RANGE	4x05330	[2:74]	214Ah	330	330
	331)UIP3 IP OFFSET	4x05331	[2:75]	214Bh	331	331
	332)UIP3 CAL RATIO	4x05332	[2:76]	214Ch	332	332
	333)UIP3 MAX CLAMP	4x05333	[2:77]	214Dh	333	333
	334)UIP3 MIN CLAMP	4x05334	[2:78]	214Eh	334	334
	335)UIP3 HI VAL OP1	4x05335	[2:79]	214Fh	335	335
	336)UIP3 LO VAL OP1	4x05336	[2:80]	2150h	336	336
	337)UIP3 HI VAL OP2	4x05337	[2:81]	2151h	337	337
	338)UIP3 LO VAL OP2	4x05338	[2:82]	2152h	338	338
	339)UIP3 THRESHOLD	4x05339	[2:83]	2153h	339	339
	340)UIP4 IP RANGE	4x05340	[2:84]	2154h	340	340
	341)UIP4 IP OFFSET	4x05341	[2:85]	2155h	341	341
	342)UIP4 CAL RATIO	4x05342	[2:86]	2156h	342	342
	343)UIP4 MAX CLAMP	4x05343	[2:87]	2157h	343	343
	344)UIP4 MIN CLAMP	4x05344	[2:88]	2158h	344	344
	345)UIP4 HI VAL OP1	4x05345	[2:89]	2159h	345	345
	346)UIP4 LO VAL OP1	4x05346	[2:90]	215Ah	346	346
	347)UIP4 HI VAL OP2	4x05347	[2:91]	215Bh	347	347

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	348)UIP4 LO VAL OP2	4x05348	[2:92]	215Ch	348	348
	349)UIP4 THRESHOLD	4x05349	[2:93]	215Dh	349	349
	350)UIP5 IP RANGE	4x05350	[2:94]	215Eh	350	350
	351)UIP5 IP OFFSET	4x05351	[2:95]	215Fh	351	351
	352)UIP5 CAL RATIO	4x05352	[2:96]	2160h	352	352
	353)UIP5 MAX CLAMP	4x05353	[2:97]	2161h	353	353
	354)UIP5 MIN CLAMP	4x05354	[2:98]	2162h	354	354
	355)UIP5 HI VAL OP1	4x05355	[2:99]	2163h	355	355
	356)UIP5 LO VAL OP1	4x05356	[2:100]	2164h	356	356
	357)UIP5 HI VAL OP2	4x05357	[2:101]	2165h	357	357
	358)UIP5 LO VAL OP2	4x05358	[2:102]	2166h	358	358
	359)UIP5 THRESHOLD	4x05359	[2:103]	2167h	359	359
	360)UIP6 IP RANGE	4x05360	[2:104]	2168h	360	360
	361)UIP6 IP OFFSET	4x05361	[2:105]	2169h	361	361
	362)UIP6 CAL RATIO	4x05362	[2:106]	216Ah	362	362
	363)UIP6 MAX CLAMP	4x05363	[2:107]	216Bh	363	363
	364)UIP6 MIN CLAMP	4x05364	[2:108]	216Ch	364	364
	365)UIP6 HI VAL OP1	4x05365	[2:109]	216Dh	365	365
	366)UIP6 LO VAL OP1	4x05366	[2:110]	216Eh	366	366
	367)UIP6 HI VAL OP2	4x05367	[2:111]	216Fh	367	367
	368)UIP6 LO VAL OP2	4x05368	[2:112]	2170h	368	368
	369)UIP6 THRESHOLD	4x05369	[2:113]	2171h	369	369
	370)UIP7 IP RANGE	4x05370	[2:114]	2172h	370	370
	371)UIP7 IP OFFSET	4x05371	[2:115]	2173h	371	371
	372)UIP7 CAL RATIO	4x05372	[2:116]	2174h	372	372
	373)UIP7 MAX CLAMP	4x05373	[2:117]	2175h	373	373
	374)UIP7 MIN CLAMP	4x05374	[2:118]	2176h	374	374
	375)UIP7 HI VAL OP1	4x05375	[2:119]	2177h	375	375
	376)UIP7 LO VAL OP1	4x05376	[2:120]	2178h	376	376
	377)UIP7 HI VAL OP2	4x05377	[2:121]	2179h	377	377
	378)UIP7 LO VAL OP2	4x05378	[2:122]	217Ah	378	378
	379)UIP7 THRESHOLD	4x05379	[2:123]	217Bh	379	379
	380)UIP8 IP RANGE	4x05380	[2:124]	217Ch	380	380
	381)UIP8 IP OFFSET	4x05381	[2:125]	217Dh	381	381
	382)UIP8 CAL RATIO	4x05382	[2:126]	217Eh	382	382
	383)UIP8 MAX CLAMP	4x05383	[2:127]	217Fh	383	383
	384)UIP8 MIN CLAMP	4x05384	[2:128]	2180h	384	384
	385)UIP8 HI VAL OP1	4x05385	[2:129]	2181h	385	385
	386)UIP8 LO VAL OP1	4x05386	[2:130]	2182h	386	386
	387)UIP8 HI VAL OP2	4x05387	[2:131]	2183h	387	387

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	388)UIP8 LO VAL OP2	4x05388	[2:132]	2184h	388	388
	389)UIP8 THRESHOLD	4x05389	[2:133]	2185h	389	389
	390)UIP9 IP RANGE	4x05390	[2:134]	2186h	390	390
	391)UIP9 IP OFFSET	4x05391	[2:135]	2187h	391	391
	392)UIP9 CAL RATIO	4x05392	[2:136]	2188h	392	392
	393)UIP9 MAX CLAMP	4x05393	[2:137]	2189h	393	393
	394)UIP9 MIN CLAMP	4x05394	[2:138]	218Ah	394	394
	395)UIP9 HI VAL OP1	4x05395	[2:139]	218Bh	395	395
	396)UIP9 LO VAL OP1	4x05396	[2:140]	218Ch	396	396
	397)UIP9 HI VAL OP2	4x05397	[2:141]	218Dh	397	397
	398)UIP9 LO VAL OP2	4x05398	[2:142]	218Eh	398	398
	399)UIP9 THRESHOLD	4x05399	[2:143]	218Fh	399	399
ro	401)SUMMER1 OP MON	4x05401	[2:145]	2191h	401	401
	402)SUMMER1 SIGN1	4x05402	[2:146]	2192h	402	402
	403)SUMMER1 SIGN2	4x05403	[2:147]	2193h	403	403
	404)SUMMER1 RATIO1	4x05404	[2:148]	2194h	404	404
	405)SUMMER1 RATIO2	4x05405	[2:149]	2195h	405	405
	406)SUMMER1 DIVIDER1	4x05406	[2:150]	2196h	406	406
	407)SUMMER1 DIVIDER2	4x05407	[2:151]	2197h	407	407
	408)SUMMER1 INPUT1	4x05408	[2:152]	2198h	408	408
	409)SUMMER1 INPUT2	4x05409	[2:153]	2199h	409	409
	410)SUMMER1 INPUT3	4x05410	[2:154]	219Ah	410	410
	411)SUMMER1 DEADBAND	4x05411	[2:155]	219Bh	411	411
	412)SUMMER1 OP INVRT	4x05412	[2:156]	219Ch	412	412
	413)SUMMER1 CLAMP	4x05413	[2:157]	219Dh	413	413
ro	415)SUMMER2 OP MON	4x05415	[2:159]	219Fh	415	415
	416)SUMMER2 SIGN1	4x05416	[2:160]	21A0h	416	416
	417)SUMMER2 SIGN2	4x05417	[2:161]	21A1h	417	417
	418)SUMMER2 RATIO1	4x05418	[2:162]	21A2h	418	418
	419)SUMMER2 RATIO2	4x05419	[2:163]	21A3h	419	419
	420)SUMMER2 DIVIDER1	4x05420	[2:164]	21A4h	420	420
	421)SUMMER2 DIVIDER2	4x05421	[2:165]	21A5h	421	421
	422)SUMMER2 INPUT1	4x05422	[2:166]	21A6h	422	422
	423)SUMMER2 INPUT2	4x05423	[2:167]	21A7h	423	423
	424)SUMMER2 INPUT3	4x05424	[2:168]	21A8h	424	424
	425)SUMMER2 DEADBAND	4x05425	[2:169]	21A9h	425	425
	426)SUMMER2 OP INVRT	4x05426	[2:170]	21AAh	426	426
	427)SUMMER2 CLAMP	4x05427	[2:171]	21ABh	427	427
ro	475)PROFILE Y OP MON	4x05475	[2:219]	21DBh	475	475
	476)PROFILER MODE	4x05476	[2:220]	21DCh	476	476

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	477)PROFLR Y AT Xmin	4x05477	[2:221]	21DDh	477	477
	478)PROFLR Y AT Xmax	4x05478	[2:222]	21DEh	478	478
	479)PROFILER Xmin	4x05479	[2:223]	21DFh	479	479
	480)PROFILER Xmax	4x05480	[2:224]	21E0h	480	480
	481)PROFLR X RECTIFY	4x05481	[2:225]	21E1h	481	481
ro	523)PRESET OP MON	4x05523	[3:12]	220Bh	523	523
	524)PRESET SEL1(LSB)	4x05524	[3:13]	220Ch	524	524
	525)PRESET SELECT 2	4x05525	[3:14]	220Dh	525	525
	526)PRESET SEL3(MSB)	4x05526	[3:15]	220Eh	526	526
	527)PR.VALUE FOR 000	4x05527	[3:16]	220Fh	527	527
	528)PR.VALUE FOR 001	4x05528	[3:17]	2210h	528	528
	529)PR.VALUE FOR 010	4x05529	[3:18]	2211h	529	529
	530)PR.VALUE FOR 011	4x05530	[3:19]	2212h	530	530
	531)PR.VALUE FOR 100	4x05531	[3:20]	2213h	531	531
	532)PR.VALUE FOR 101	4x05532	[3:21]	2214h	532	532
	533)PR.VALUE FOR 110	4x05533	[3:22]	2215h	533	533
	534)PR.VALUE FOR 111	4x05534	[3:23]	2216h	534	534
ro	535)DEMULX O/P BIT1	4x05535	[3:24]	2217h	535	535
ro	536)DEMULX O/P BIT2	4x05536	[3:25]	2218h	536	536
ro	537)DEMULX O/P BIT3	4x05537	[3:26]	2219h	537	537
ro	538)DEMULX O/P BIT4	4x05538	[3:27]	221Ah	538	538
ro	539)DEMULX O/P BIT5	4x05539	[3:28]	221Bh	539	539
ro	540)DEMULX O/P BIT6	4x05540	[3:29]	221Ch	540	540
ro	541)DEMULX O/P BIT7	4x05541	[3:30]	221Dh	541	541
ro	542)DEMULX O/P BIT8	4x05542	[3:31]	221Eh	542	542
ro	543)DEMULX O/P BIT9	4x05543	[3:32]	221Fh	543	543
	544)MULTIFUN1 MODE	4x05544	[3:33]	2220h	544	544
	545)MULTIFUN1 OP SEL	4x05545	[3:34]	2221h	545	545
	546)MULTIFUN2 MODE	4x05546	[3:35]	2222h	546	546
	547)MULTIFUN2 OP SEL	4x05547	[3:36]	2223h	547	547
	548)MULTIFUN3 MODE	4x05548	[3:37]	2224h	548	548
	549)MULTIFUN3 OP SEL	4x05549	[3:38]	2225h	549	549
	550)MULTIFUN4 MODE	4x05550	[3:39]	2226h	550	550
	551)MULTIFUN4 OP SEL	4x05551	[3:40]	2227h	551	551
	552)MULTIFUN5 MODE	4x05552	[3:41]	2228h	552	552
	553)MULTIFUN5 OP SEL	4x05553	[3:42]	2229h	553	553
	554)MULTIFUN6 MODE	4x05554	[3:43]	222Ah	554	554
	555)MULTIFUN6 OP SEL	4x05555	[3:44]	222Bh	555	555
	556)MULTIFUN7 MODE	4x05556	[3:45]	222Ch	556	556
	557)MULTIFUN7 OP SEL	4x05557	[3:46]	222Dh	557	557

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	558)MULTIFUN8 MODE	4x05558	[3:47]	222Eh	558	558
	559)MULTIFUN8 OP SEL	4x05559	[3:48]	222Fh	559	559
ro	560)LATCH OUTPUT MON	4x05560	[3:49]	2230h	560	560
	561)LATCH DATA IP	4x05561	[3:50]	2231h	561	561
	562)LATCH CLOCK IP	4x05562	[3:51]	2232h	562	562
	563)LATCH SET IP	4x05563	[3:52]	2233h	563	563
	564)LATCH RESET IP	4x05564	[3:53]	2234h	564	564
	565)LATCH HI VALUE	4x05565	[3:54]	2235h	565	565
	566)LATCH LO VALUE	4x05566	[3:55]	2236h	566	566
ro	567)DEMULX O/P BIT10	4x05567	[3:56]	2237h	567	567
ro	568)FILTER1 OP MON	4x05568	[3:57]	2238h	568	568
	569)FILTER1 TC	4x05569	[3:58]	2239h	569	569
ro	570)DEMULX O/P BIT11	4x05570	[3:59]	223Ah	570	570
ro	571)DEMULX O/P BIT12	4x05571	[3:60]	223Bh	571	571
ro	572)DEMULX O/P BIT13	4x05572	[3:61]	223Ch	572	572
ro	573)FILTER2 OP MON	4x05573	[3:62]	223Dh	573	573
	574)FILTER2 TC	4x05574	[3:63]	223Eh	574	574
ro	575)DEMULX O/P BIT14	4x05575	[3:64]	223Fh	575	575
ro	576)DEMULX O/P BIT15	4x05576	[3:65]	2240h	576	576
ro	577)DEMULX O/P BIT16	4x05577	[3:66]	2241h	577	577
	588)COMP1 INPUT 1	4x05588	[3:77]	224Ch	588	588
	589)COMP1 INPUT 2	4x05589	[3:78]	224Dh	589	589
	590)COMP1 WINDOW SEL	4x05590	[3:79]	224Eh	590	590
	591)COMP1 HYSTERESIS	4x05591	[3:80]	224Fh	591	591
	592)COMP2 INPUT 1	4x05592	[3:81]	2250h	592	592
	593)COMP2 INPUT 2	4x05593	[3:82]	2251h	593	593
	594)COMP2 WINDOW SEL	4x05594	[3:83]	2252h	594	594
	595)COMP2 HYSTERESIS	4x05595	[3:84]	2253h	595	595
	596)COMP3 INPUT 1	4x05596	[3:85]	2254h	596	596
	597)COMP3 INPUT 2	4x05597	[3:86]	2255h	597	597
	598)COMP3 WINDOW SEL	4x05598	[3:87]	2256h	598	598
	599)COMP3 HYSTERESIS	4x05599	[3:88]	2257h	599	599
	600)COMP4 INPUT 1	4x05600	[3:89]	2258h	600	600
	601)COMP4 INPUT 2	4x05601	[3:90]	2259h	601	601
	602)COMP4 WINDOW SEL	4x05602	[3:91]	225Ah	602	602
	603)COMP4 HYSTERESIS	4x05603	[3:92]	225Bh	603	603
	604)C/O SW1 CONTROL	4x05604	[3:93]	225Ch	604	604
	605)C/O SW1 HI VALUE	4x05605	[3:94]	225Dh	605	605
	606)C/O SW1 LO VALUE	4x05606	[3:95]	225Eh	606	606
	607)C/O SW2 CONTROL	4x05607	[3:96]	225Fh	607	607

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	608)C/O SW2 HI VALUE	4x05608	[3:97]	2260h	608	608
	609)C/O SW2 LO VALUE	4x05609	[3:98]	2261h	609	609
	610)C/O SW3 CONTROL	4x05610	[3:99]	2262h	610	610
	611)C/O SW3 HI VALUE	4x05611	[3:100]	2263h	611	611
	612)C/O SW3 LO VALUE	4x05612	[3:101]	2264h	612	612
	613)C/O SW4 CONTROL	4x05613	[3:102]	2265h	613	613
	614)C/O SW4 HI VALUE	4x05614	[3:103]	2266h	614	614
	615)C/O SW4 LO VALUE	4x05615	[3:104]	2267h	615	615
ro	676)ENCODER WARNING	4x05676	[3:165]	22A4h	676	676
	677)RECIPE PAGE	4x05677	[3:166]	22A5h	677	677
	678)MAX CUR RESPONSE	4x05678	[3:167]	22A6h	678	678
ro	679)ID ABCXRxxx MON	4x05679	[3:168]	22A7h	679	679
	680)Ista BURDEN OHMS	4x05680	[3:169]	22A8h	680	680
ro	681)P.SAVED ONCE MON	4x05681	[3:170]	22A9h	681	681
ro	682)DOP1 O/P BIN VAL	4x05682	[3:171]	22AAh	682	682
ro	683)DOP2 O/P BIN VAL	4x05683	[3:172]	22ABh	683	683
ro	684)DOP3 O/P BIN VAL	4x05684	[3:173]	22ACh	684	684
ro	685)DIO1 O/P BIN VAL	4x05685	[3:174]	22ADh	685	685
ro	686)DIO2 O/P BIN VAL	4x05686	[3:175]	22AEh	686	686
ro	687)DIO3 O/P BIN VAL	4x05687	[3:176]	22AFh	687	687
ro	688)DIO4 O/P BIN VAL	4x05688	[3:177]	22B0h	688	688
ro	689)IN JOG FLAG	4x05689	[3:178]	22B1h	689	689
ro	690)WEB BREAK FLAG	4x05690	[3:179]	22B2h	690	690
ro	691)SUM1 CH2 SUBTOT.	4x05691	[3:180]	22B3h	691	691
ro	692)SUM1 CH1 SUBTOT.	4x05692	[3:181]	22B4h	692	692
ro	693)SUM2 CH2 SUBTOT.	4x05693	[3:182]	22B5h	693	693
ro	694)SUM2 CH1 SUBTOT.	4x05694	[3:183]	22B6h	694	694
ro	695)WEB SPEED RECT.	4x05695	[3:184]	22B7h	695	695
ro	696)REEL SPEED RECT.	4x05696	[3:185]	22B8h	696	696
ro	697)DIAMETER UNFILT.	4x05697	[3:186]	22B9h	697	697
ro	698)HEALTHY FLAG	4x05698	[3:187]	22BAh	698	698
ro	699)READY FLAG	4x05699	[3:188]	22BBh	699	699
ro	700)STALL WARNING	4x05700	[3:189]	22BCh	700	700
ro	701)REF XC WARNING	4x05701	[3:190]	22BDh	701	701
ro	702)THERMISTOR WARN	4x05702	[3:191]	22BEh	702	702
ro	703)SPEED FBK WARN	4x05703	[3:192]	22BFh	703	703
ro	704)ILOOP OFF WARN	4x05704	[3:193]	22C0h	704	704
	705)LP FILTER INPUT	4x05705	[3:194]	22C1h	705	705
ro	706)LP FILTER OUTPUT	4x05706	[3:195]	22C2h	706	706
ro	707)AUTOTUNE MONITOR	4x05707	[3:196]	22C3h	707	707

JL/X		Modbus	Profibus DPV1	EtherCAT CANopen	EtherNet/IP DeviceNet	PROFINET
Ro	Parameter	Register	[Slot:Index]	Index	Instance	Index
	708)REMOTE PARAM RCV	4x05708	[3:197]	22C4h	708	708
ro	709)MOTOR RPM %	4x05709	[3:198]	22C5h	709	709
	710)POSITION COUNT	4x05710	[3:199]	22C6h	710	710
	711)POS CNT DIVIDER	4x05711	[3:200]	22C7h	711	711
	712)USER ALARM INPUT	4x05712	[3:201]	22C8h	712	712
ro	713)SPEED LOOP PI OP	4x05713	[3:202]	22C9h	713	713
ro	714)IN SLACK FLAG	4x05714	[3:203]	22CAh	714	714
ro	715)SPD FBK % UNF	4x05715	[3:204]	22CBh	715	715
ro	716)TACHO % UNF	4x05716	[3:205]	22CCh	716	716
ro	717)MOTOR RPM UNF	4x05717	[3:206]	22CDh	717	717
ro	718)CUR DEMAND UNF	4x05718	[3:207]	22CEh	718	718
ro	719)CUR FBK % UNF	4x05719	[3:208]	22CFh	719	719
ro	720)SYSTEM RESET	4x05720	[3:209]	22D0h	720	720

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