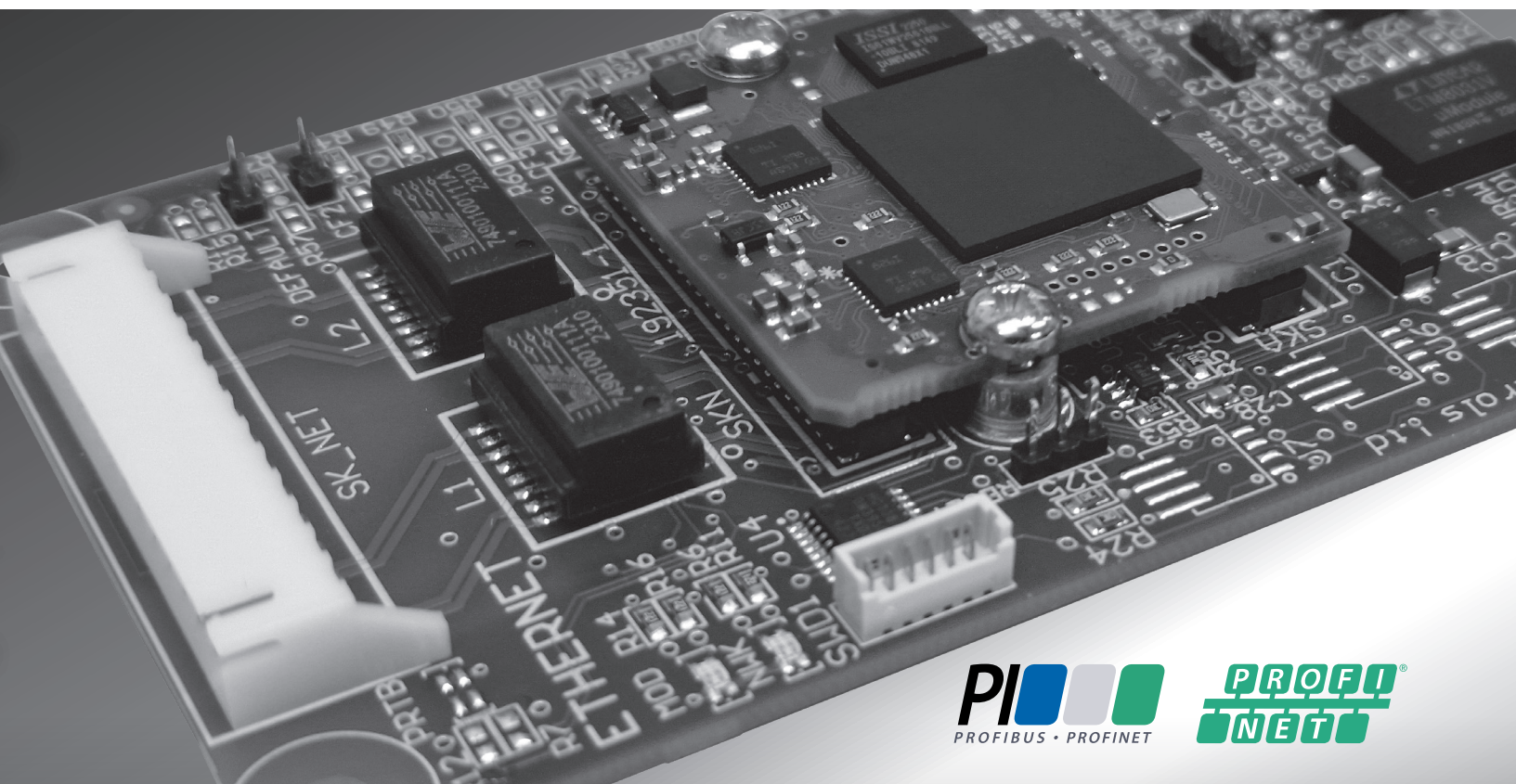


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PROFINET option card

Technical manual



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CE

Compatible with IQ3 Pro and IQT3 Pro actuators



The PROFINET option card described in this manual contains static-sensitive devices. Suitable precautions, such as wearing an earthed anti-static wrist strap, should be taken before handling the card. It should be kept in an anti-static bag or box while it is not fitted within an actuator.

Note 1:

Throughout this manual the PROFINET option module may be referred to as the module, the PROFINET option card, the option card or the card.

Note 2:

The information in this manual relates to the following firmware releases:

- PROFINET option card v103 or later. NAMUR features not available in firmware version v103 will be available in a later version
- Actuator firmware version (or newer): User Interface Board v207, Control Board v128, and Motor Control Board v112 (IQT only).

The GSDML file associated with the PROFINET option card can be downloaded from the PI website at <https://www.profibus.com/rotork-ethernet-actuator>. The GSDML file name is "GSDML-V2.44-Rotork Controls Ltd-Rotork Ethernet Actuator-20240306.xml".

The GSDML file refers to a graphics file containing the Rotork icon: "GSDML-0125-0033-RotorkIcon.bmp".

Note 3:

This manual assumes a pre-existing level of knowledge of using the actuator that the PROFINET option card is installed inside. It is recommended that the IQ3 Pro full configuration manual ([PUB002-040](#)) for the actuator is read prior to setting up EtherNet with the actuator. Manuals can be downloaded from the Rotork website. This manual also assumes intermediate knowledge of the PROFINET protocol and networks.

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Acronyms and abbreviations

| | |
|-------|---|
| Comms | Communications |
| DCS | Data Concentrator System |
| DHCP | Dynamic Host Configuration Protocol |
| DNS | Domain Name System |
| DV | Desired Value (Positioning) |
| EMC | Electromagnetic Compatibility |
| EMI | Electromagnetic Interference |
| ESD | Electrostatic Discharge |
| GSDML | General Station Description Markup Language |
| HTTP | HyperText Transfer Protocol |
| iAM | Intelligent Asset Management |
| IO | Input/Output |
| IP | Internet Protocol |
| LED | Light Emitting Diode |
| MAC | Media Access Control |
| PI | PROFIBUS & PROFINET International |
| PCBA | Printed Circuit Board Assembly |
| PLC | Programmable Logic Controller |
| SCADA | Supervisory Control And Data Acquisition |
| TCP | Transport Control Protocol |
| UDP | User Datagram Protocol |

1 Introduction

This document gives instructions for commissioning the PROFINET option card.

1.1 PROFINET

The Ethernet actuator fitted with a PROFINET option card is certified by PI following conformance testing by an accredited PI Test Laboratory (PITL). Rotork can be found as a licensed vendor on the PI website. The GSDML file associated with the PROFINET option card can be downloaded from the Rotork PI product page at <https://www.profibus.com/rotork-ethernet-actuator>.

The option card has two connections, either 2 x RJ45 or 2 x M12, supporting auto crossover and full duplex transmission speed of 100Mbps.

Due to the presence of two Ethernet ports, the option card is capable of being used in various network topologies, including:

- Ring
- Star
- Line

The card circuits do not impinge on the actuator control electronics; the actuator itself remains fully self-protecting. The module performs the tasks of network interface, actuator data collection and the issuing of actuator commands to open, stop, close, perform an ESD operation, or move to a desired value (DV) position.



Fig 1: The option card is compatible with IQ3 Pro (left) and IQT3 Pro (right) actuators

1.2 Safety information

The control switch on the front panel must be in the 'STOP' position at all times during commissioning of the option card, this will prevent all movement of the drive shaft.

The control switch is a 3-position switch, as described in [PUB002-040](#). The actuator is powered by AC and DC voltages, as specified in [PUB002-197](#). In normal circumstances this mains power is not exposed to the user but may be exposed if the terminal cover is removed during installation of the Ethernet cables to the RJ45 or M12 connectors. It is important that the actuator is isolated from mains power when removing the terminal cover when accessing the RJ45 or M12 connectors.

2 PROFINET option card properties

2.1 Mechanical properties

The option card is installed inside the actuator, mounting directly onto the main control board of the actuator using 4 Torx screws. All the connectors are polarised to prevent incorrect insertion.

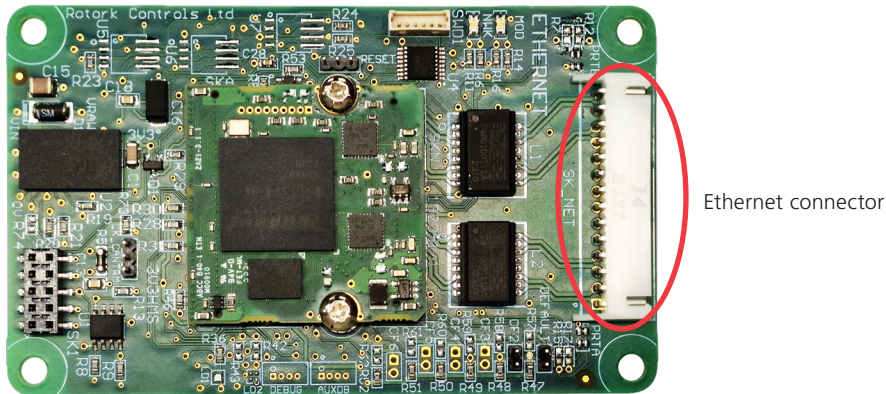


Fig 2: PROFINET option card

2.2 Electrical properties

The option card external network connections are fully isolated from the actuator electronics.

2.3 Operation and storage

The option card is designed to be stored in the actuator and operated within the same environment as the actuator.

The constraints are:

- Operating temperature: -40 to +70 °C (-40 to +158 °F)
- Storage temperature: -50 to +85 °C (-58 to +185 °F)
- Relative humidity: 5 to 95% (<50 °C (<122 °F)) non-condensing

2.4 Inside an IQ3 Pro or IQT3 Pro actuator

The option card is suitable for fitting into IQ3 Pro actuators. The connections and fitting in an IQT3 Pro are similar to that for an IQ3 Pro and the following information effectively relates to both actuator types. The option card can be located into either of the two mounting locations available on the main PCB.

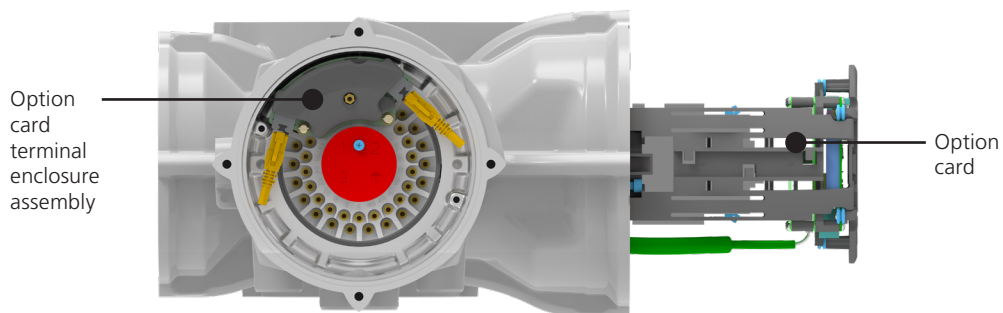


Fig 3: Option card and terminal enclosure locations

2 PROFINET option card properties

2.5 Option card LEDs

If the actuator cover is opened there are several LEDs on the circuit board that are used to indicate communication activity. These indicate the communication between the network and the card. Alternatively the presence of an Ethernet connection can be observed on the PROFINET menu on the actuator display or the availability of the webpages.

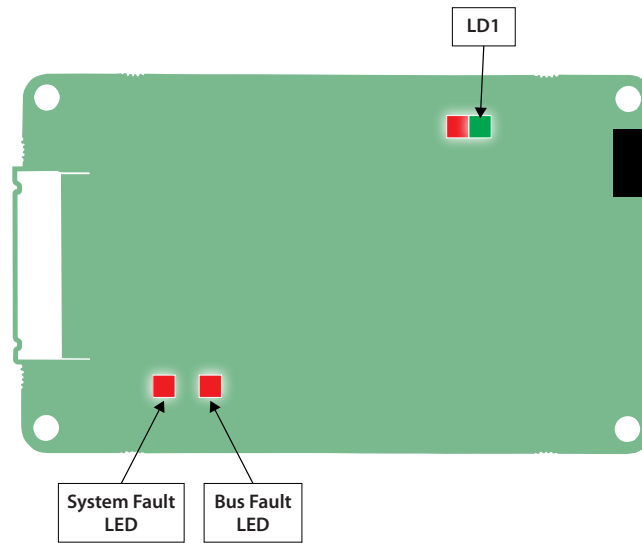


Fig 4: PROFINET option card LED positions

| LED | Appearance | Meaning |
|--------------|-------------------------------|---|
| System Fault | Off | Not initialised, or no problem detected |
| System Fault | Red | One or more of the following: – Diagnostic event(s): Diagnostic event(s) present – Exception error: Option card network module in EXCEPTION state, Ethernet MAC held in reset. – FATAL event: Major internal error if Bus Fault LED is also red |
| Bus Fault | Off | No problem |
| Bus Fault | Red | One or more of the following: – Station Name error: Station Name is not set – IP address error: IP address is not set – Configuration error: Expected Identification differs from Real Identification – Online (STOP): Connection with IO Controller established, but IO Controller is in STOP state or IO data is BAD – Connection error: No connection with IO Controller – FATAL event: Major internal error if System Fault LED is also red |
| LD1 | Alternating red and green | Normal operation |
| LD1 | Alternating 2 red and 1 green | Option card communication issue with its network module |
| LD1 | Alternating 4 red and 1 green | Option card FTP Enabled |
| LD1 | Alternating red and 2 green | Communication issue between option card and actuator control board |

3 Industrial Ethernet

3.1 Overview

Ethernet is a family of computer networking technologies, invented in the early 1970's, commercially introduced in 1980 and first standardised in 1983 as IEEE 802.3. It is used extensively throughout the world.

In its most basic form, it is a means of carrying data between two points in a digital format. The data is packaged into message telegrams, which also include routing data, error checking and message type information.

The Ethernet specification is a transmission protocol which covers the bottom two layers in the OSI 7-layer comms model:

- It defines the specification for the Physical Layer interface, i.e. cabling and devices
- It also defines how data is routed through a network or series of networks, known as the Data Link Layer comprising of Logical Link Control (LLC) and Media Access Control (MAC)

The various Industrial Ethernet communications protocols 'sit' on top of the Ethernet Physical and Data Link layers, the figure below shows how the Industrial Ethernet protocols available on Rotork products fit into the OSI 7-layer model:

| Application Process | EtherNet/IP | Modbus TCP | PROFINET | Webpages |
|-----------------------|-------------|------------|----------|----------|
| 7: Application Layer | CIP | Modbus | PROFINET | HTTP |
| 6: Presentation Layer | | | | |
| 5: Session Layer | | | | |
| 4: Transport Layer | TCP/UDP | TCP | TCP/UDP | TCP |
| 3: Network Layer | IP | IP | IP | IP |
| 2: Datalink Layer | Ethernet | Ethernet | Ethernet | Ethernet |
| 1: Physical Layer | | | | |

3.2 Network topology

Ethernet can be configured in several network topologies, the most common ones are illustrated below.

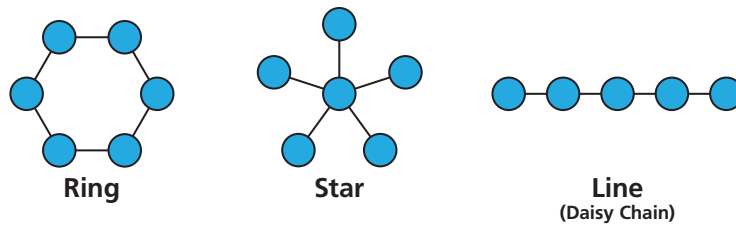


Fig 5: Common network topologies

3 Industrial Ethernet

3.3 Cable and screening

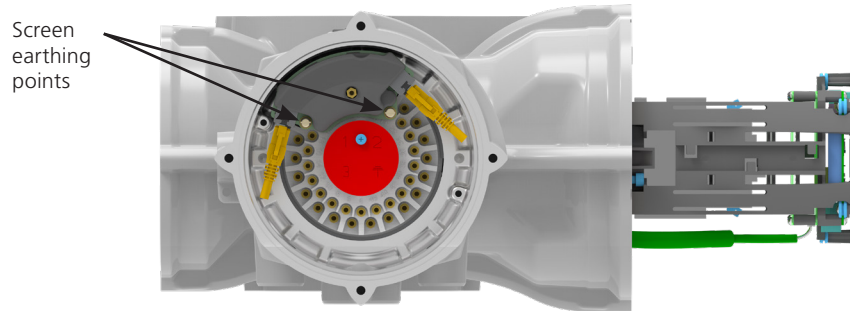


Fig 6: Screen earthing screw locations

Cable and screening

It is recommended that industrial grade dual pair screened CAT5 or CAT6 cables are used, due to their superior mechanical and electrical properties.

In the industrial environment, there are potential issues surrounding inadequate equipotential bonding, particularly on mature sites. For this reason, careful consideration needs to be given to the earthing of the screens of signal and communications cable. However, sites may have policies or rules regarding the connection of both ends of a cable to earth.

Screen connection options

It is the assumption that the screens of Ethernet cables should be earthed at both ends as a protection against EMI of all types. This is the optimum configuration and should be used if possible.

It is further assumed that the screens will be earthed by default at the 'central point,' e.g., PLC, DCS, etc.

At the actuator, several options exist:

To earth the Ethernet cable at the actuator, in order of preference, either:

- Use an 'EMC' gland to earth the screen at the point of entry into the enclosure
- Ensure the screw is fitted to the screen earthing point for the Ethernet port(s) used, as shown in the diagram above (Fig 6)

If earthing the Ethernet cable at the actuator is not required, in order of preference, either:

- On the Ethernet port that the earthing is not required, remove the earthing screw from the screen earthing point. This will allow the default termination of 1nF in parallel with 1M Ω to earth on that port
- Crop the cable screen so that the chosen connector does not have a screen connection

For situations that make use of both Ethernet ports (i.e. Ring or Line topology), the earthing arrangements may need to be different for each port. For instance, in a Ring connected system, each leg needs to be earthed at one or both ends. This must take place at the actuators since the cable only connects between actuators. In other topologies employing switches or routers, there are more options.

3 Industrial Ethernet

3.4 Ethernet network security

When installing an Ethernet control network an assessment of the level of security required should be made. Security policies may require modification appropriate for the control and business networks.

Coordination between IT (Information Technology) and OT (Operational Technology) network teams is required to ensure a suitable network infrastructure is implemented.

For example, IT departments may use remote access to periodically maintain and update devices on the business network; these routine updates could disrupt the operation of the control system network. Additionally, control system software updates and configuration must be strictly controlled as remote connections may introduce security risks.

The security guidance in this document is intended to help the user implement and maintain reasonable security of the Ethernet actuator. However, no security implementation can guarantee to protect against all existing, new, or previously unknown threats. Rotork does not guarantee that adherence to these and any other security recommendations will protect the Ethernet actuator from security breaches and any subsequent impact on process in which the Ethernet actuator is involved with.

Many common industrial control protocols (e.g. Modbus/TCP, PROFINET, EtherNet/IP) do not encrypt data and so offer no protection against third parties monitoring data or injecting commands. Therefore we would recommend:

- Segregating networks where possible to control the flow and availability of data. The Purdue model is a good example of this
- Physical security of the network is reviewed and controlled to ensure that no third parties can access it
- Default passwords on devices be changed during installation/commissioning to ensure that access be limited to approved users

4 Configuration of the PROFINET option card

4.1 Factory default settings

A Rotork actuator fitted with a PROFINET option card leaves the factory with the following default settings:

| | | | |
|-----------------------|----------|-----------------------------------|---------------------|
| Host Name: | "" | SNMP Read-Only Community String: | "public" |
| DHCP Enabled: | Disabled | SNMP Read/Write Community String: | "private" |
| Domain Name: | "" | Port 1 Network Speed: | Full Duplex 100Mbps |
| IP Address: | 0.0.0.0 | Port 2 Network Speed: | Full Duplex 100Mbps |
| Subnet Mask: | 0.0.0.0 | Command Filter Delay (ms): | 250 |
| Gateway Address: | 0.0.0.0 | FTP Enabled: | Disabled |
| Primary DNS server: | 0.0.0.0 | Webpage Admin Password: | ROTACT |
| Secondary DNS server: | 0.0.0.0 | Webpage Engineer Password: | ROTORK |
| Station Name: | "" | | |

Notes:

- Webpage passwords should be changed from default during commissioning
- Command Filter Delay is the fastest rate which repeat-value write operations to each parameter is sent to the actuator control board

For example, the IO Controller could be writing desired position to parameter 23, DesiredPosition, every 32 ms. Each write operation sends the same value of 3,000 (position 30.0%). The option card detects repeat-value write operations, and only forwards the desired position value to the actuator control board every 250 ms (which is the default delay)

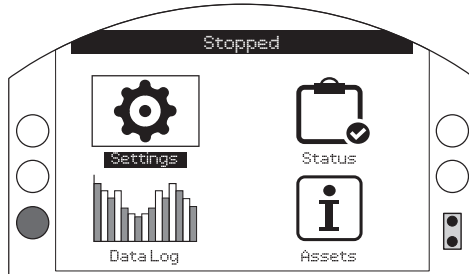
If the value being written to the parameter is different from the last, then the command is immediately forwarded to the actuator control board

4 Configuration of the PROFINET option card

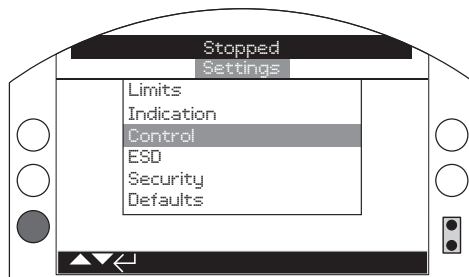
4.2 Configuring the option card using the actuator menus

Before you begin, read the appropriate safe use manual: [PUB002-039](#) for multi-turn IQ3 Pro actuators or [PUB002-065](#) for part-turn IQT3 Pro actuators and the full configuration manual, [PUB002-040](#). Check for any errors that may affect the configuration and resolve them. An example is the text "Hardware Error" appearing at the top of the display. Check the Remote Control menu, as described in [PUB002-040](#).

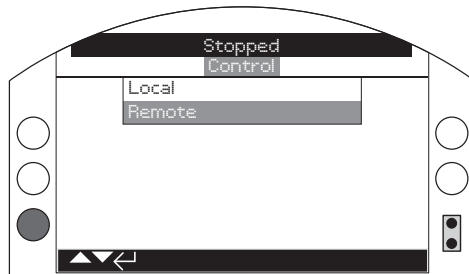
From the home screen select **Settings**.



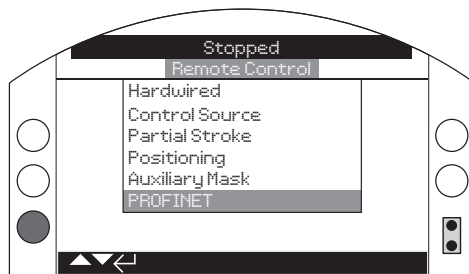
From the **Settings** menu, select **Control**.



From the **Control** menu, select **Remote**.



From the **Remote** menu, select **PROFINET**. Note that this option appears only when the option card is fitted.

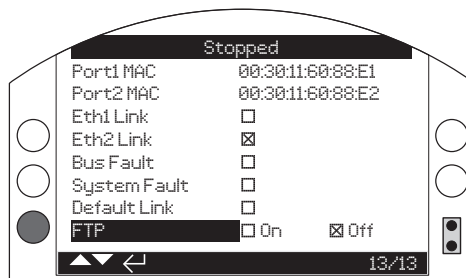
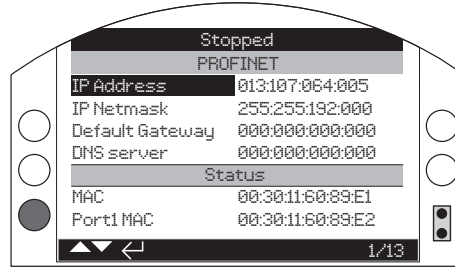


4 Configuration of the PROFINET option card

You have now reached the **PROFINET** menu.

Note that there must be an Ethernet link established with the option card for IP settings to appear, otherwise zeros will be shown. It can take up to 15 seconds for IP settings to appear or disappear when Ethernet link is made or lost respectively.

Also note that when configuring the IP settings, changes take up to 15 seconds to appear. If the IP changes are not successful, the settings will revert to previous values or default values stated in Section 4.1 Factory default settings.

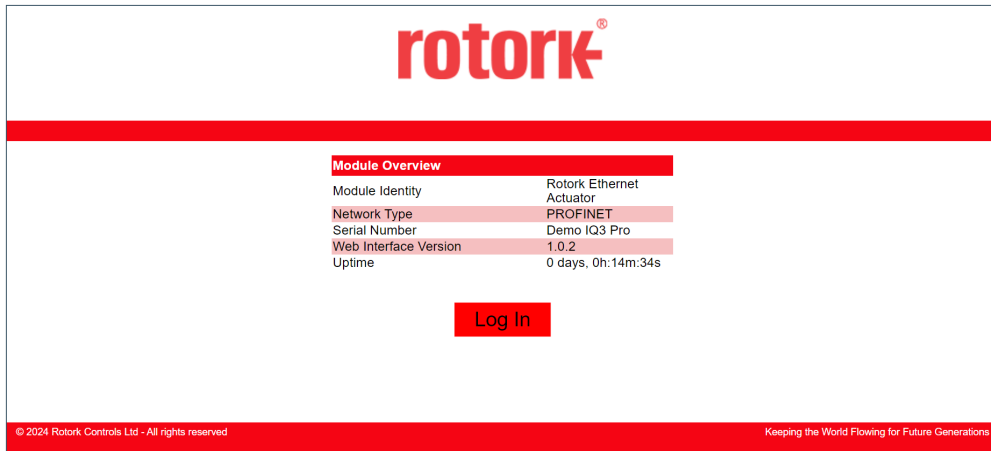


- | | |
|-----------------------------|---|
| 1/13 IP Address | This is the IP address of the actuator and should follow your normal address sequence for your network. Use the ← and → keys to edit the values, as you would for changing tags and passwords on other actuator menus. Use the ⬅ and ➡ keys to move between characters. |
| 2/13 IP Netmask | This is usually set to 255.255.255.0, unless required otherwise by your Ethernet network. |
| 3/13 Default Gateway | This should be set to 0.0.0.0, unless you are using a gateway. |
| 4/13 DNS server | The primary DNS server used by the option card. It is common practice to use numerical IP addresses but there is an option to use a DNS server. If you are not using one, this should be set to 0.0.0.0. |
| 5/13 MAC | Base MAC address of the option card. |
| 6/13 Port1 MAC | Port 1 MAC address of the option card. |
| 7/13 Port2 MAC | Port 2 MAC address of the option card. |
| 8/13 Eth1 Link | Indicates whether Ethernet link is present on Port 1. |
| 9/13 Eth2 Link | Indicates whether Ethernet link is present on Port 2. |
| 10/13 Bus Fault | Indicates whether there is a PROFINET Bus Fault with the option card. See Section 2.5 Option card LEDs for description of Bus Fault. |
| 11/13 System Fault | Indicates whether there is a PROFINET System Fault with the option card. See Section 2.5 Option card LEDs for description of System Fault. |
| 12/13 Default Link | Indicates whether the default hard wire link is inserted in the option card during power-up or firmware reset. If the default link is inserted, option card configurations are set to default values. |
| 13/13 FTP | Indicates whether FTP is enabled and remote control of the actuator is disabled. |

4 Configuration of the PROFINET option card

4.3 Configuring the option card using the web interface

Enter the IP address of your actuator in your browser and press return. The home page shows the serial number of the actuator and network type to determine whether you have connected to the correct device. The home page and banner on the bottom line are shown below. Note that the banner on the bottom line appears on every page.



Click on the Log In button. You will be prompted to enter the username and password.

To Log on, enter the username ("Admin" or "Engineer") and password that has been assigned to the actuator using Insight 2. Refer to Section 4.1 Factory Default Settings for default webpage passwords. Passwords can be changed by connecting to the actuator using Insight 2. The two possible usernames are:

Engineer: Permission to read and write data from the option card.

Admin: Permission to read only.

Once logged in, the **Overview page** appears.

4.3.1 Overview

| | |
|-------------------|--|
| MODULE | Module Overview |
| Overview | Module Identity Rotork Ethernet Actuator |
| Information | Network Type PROFINET |
| Parameters | Serial Number Demo IQ3 Pro |
| NETWORK | Web Interface Version 1.0.2 |
| Status and Alarms | Uptime 0 days, 0h:15m:47s |
| IP Configuration | |
| SERVICES | |
| Remote Control | |
| Data Log | |
| LogOff | |

The **module overview** gives basic information about the actuator. Note that the serial number is free-form text, used to identify each actuator.

The **menu** is located at the left hand side of the page. It remains visible on all other pages.

You can select further pages, as follows:

4 Configuration of the PROFINET option card

4.3.2 Information


| | |
|-------------------|-----------------------------------|
| MODULE | Module Information |
| Overview | Actuator Type IQ3 Pro |
| Information | Actuator Tag EoC |
| Parameters | Ethernet Port Status Connected |
| NETWORK | Ethernet Port Traffic Port 1 |
| Status and Alarms | Communication Status Active |
| IP Configuration | Software Versions |
| SERVICES | Main Board v128 (134) |
| Remote Control | UI Board v207 (61) |
| Data Log | Ethernet Option Card v102 (3095) |
| LogOff | |

This gives further details about the option card and actuator, and lists the software versions.

4.3.3 Parameters

This page shows the parameters listed in Section 6, Parameters. This page does not automatically refresh, so there is a Refresh button on the top right corner. The parameters are split into multiple pages. The parameter pages can be navigated using the arrow keys located at the top of the parameters table.

| | |
|-------------------|---------|
| MODULE | ◀◀ 1 ▶▶ |
| Overview | |
| Information | |
| Parameters | |
| NETWORK | |
| Status and Alarms | |
| IP Configuration | |
| SERVICES | |
| Remote Control | |
| Data Log | |
| LogOff | |

| # | Name | Value |  Refresh |
|----|---------------------------|--------|---|
| 1 | StatusData1 | 0x0000 | |
| 2 | StatusData2 | 0x000C | |
| 3 | StatusData3 | 0x0081 | |
| 4 | StatusData4 | 0x0000 | |
| 5 | AlarmData1 | 0x0800 | |
| 6 | AlarmData2 | 0x0001 | |
| 7 | AlarmData3 | 0x0000 | |
| 8 | AlarmData4 | 0x0001 | |
| 9 | DigitalControlIndication | 0x0000 | |
| 10 | DesiredPositionIndication | 0 | |
| 11 | Position | 5000 | |

4.3.4 Status and Alarms

| |
|------------------------|
| MODULE |
| Overview |
| Information |
| Parameters |
| NETWORK |
| Status and Alarms |
| ▪ Control Alarms |
| ▪ Hardware Status |
| ▪ Hardwired Status |
| ▪ Local Control Status |
| ▪ Network Status |
| ▪ Position Status |
| ▪ Power Status |
| ▪ Relay Status |
| ▪ Torque Status |
| IP Configuration |
| SERVICES |
| Remote Control |
| Data Log |
| LogOff |

Clicking on Status and Alarms reveals more pages which can be accessed.

4 Configuration of the PROFINET option card

4.3.5 Control Alarms

| MODULE | Control Alarms | | |
|----------------------|-----------------------------------|---|------------------------------|
| Overview | Control Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Information | Valve Travel Time Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Parameters | Auxiliary Override Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| NETWORK | | | |
| Status and Alarms | Stall | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Control Alarms | End of Travel Timer Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardware Status | Valve Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardwired Status | Actuator Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control Status | Partial Stroke Fail | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Network Status | Control Contention | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Position Status | Communication / Signal Loss Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Power Status | | | |
| Relay Status | | | |
| Torque Status | | | |
| IP Configuration | | | |
| SERVICES | | | |
| Remote Control | | | |
| Data Log | | | |
| LogOff | | | |

This page shows the control alarms, as detailed in [PUB002-040](#).

4.3.6 Hardware Status

| MODULE | Hardware Status | | |
|----------------------|----------------------------|---|------------------------------|
| Overview | NAMUR Maintenance Needed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Information | NAMUR Out of Specification | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Parameters | NAMUR Function Check | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| NETWORK | | | |
| Status and Alarms | NAMUR Failure | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Control Alarms | Critical Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardware Status | Non Critical Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Hardwired Status | Vibration Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Local Control Status | Thermostat Alarm | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Network Status | EEPROM Error | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Position Status | | | |
| Power Status | | | |
| Relay Status | | | |
| Torque Status | | | |
| IP Configuration | | | |
| SERVICES | | | |
| Remote Control | | | |
| Data Log | | | |
| LogOff | | | |

This page shows the hardware status, as detailed in [PUB002-040](#).

4.3.7 Hardwired Status

| MODULE | Digital Input Status | | |
|----------------------|-----------------------------------|--------------------------------------|---------------------------------------|
| Overview | Digital Input 1 (Remote Open) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Information | Digital Input 2 (Remote Close) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Parameters | Digital Input 3 (Remote Maintain) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| NETWORK | | | |
| Status and Alarms | Digital Input 4 (Remote ESD) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Control Alarms | Digital Input 5 (Close Interlock) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Hardware Status | Digital Input 6 (Open Interlock) | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Hardwired Status | Input Function Status | | |
| Local Control Status | Open Interlock | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Network Status | Close Interlock | <input checked="" type="radio"/> Low | <input type="radio"/> High |
| Position Status | Network Disable | <input type="radio"/> Low | <input checked="" type="radio"/> High |
| Power Status | | | |
| Relay Status | | | |
| Torque Status | | | |
| IP Configuration | | | |
| SERVICES | | | |
| Remote Control | | | |
| Data Log | | | |
| LogOff | | | |

This shows the status of the digital inputs and input function status, as detailed in [PUB002-040](#).

4 Configuration of the PROFINET option card

4.3.8 Local Control Status

| | | |
|-------------------------------|-------------------------------|--|
| MODULE | Local Control Status | |
| Overview | Remote Control | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Information | Local Control | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Parameters | Local Stop | <input type="radio"/> Inactive <input checked="" type="radio"/> Active |
| NETWORK | Local Command While in Remote | <input checked="" type="radio"/> No Error <input type="radio"/> Error |
| Status and Alarms | | |
| ▪ Control Alarms | | |
| ▪ Hardware Status | | |
| ▪ Hardwired Status | | |
| ▪ Local Control Status | | |
| ▪ Network Status | | |
| ▪ Position Status | | |
| ▪ Power Status | | |
| ▪ Relay Status | | |
| ▪ Torque Status | | |
| IP Configuration | | |
| SERVICES | | |
| Remote Control | | |
| Data Log | | |
| LogOff | | |

This shows the status of the local control switch, as detailed in [PUB002-040](#).

4.3.9 Network Status

| | | |
|--------------------------|----------------------------|---------------|
| MODULE | Current IP Settings | |
| Overview | DHCP: | Disabled |
| Information | IP Address: | 13.107.64.5 |
| Parameters | Subnet Mask: | 255.255.192.0 |
| NETWORK | Gateway Address: | 0.0.0.0 |
| Status and Alarms | Host Name: | |
| ▪ Control Alarms | Domain name: | |
| ▪ Hardware Status | DNS Server #1: | 0.0.0.0 |
| ▪ Hardwired Status | DNS Server #2: | 0.0.0.0 |
| ▪ Local Control Status | | |
| ▪ Network Status | | |
| ▪ Position Status | | |
| ▪ Power Status | | |
| ▪ Relay Status | | |
| ▪ Torque Status | | |
| IP Configuration | | |
| SERVICES | | |
| Remote Control | | |
| Data Log | | |
| LogOff | | |

| | | |
|--|--------------------------------|-------------------|
| | Current Ethernet Status | |
| | MAC Address: | 00:30:11:60:88:E1 |
| | Port 1: | 100 FDX |
| | Port 2: | No Link |

The Network Status page shows similar items to that of the PROFINET menu on the actuator display.

4.3.10 Position Status

| | | |
|--------------------------|--|--|
| MODULE | Position Calibration | |
| Overview | Position (%) | 50.0% |
| Information | Position Raw Units | 5000 |
| Parameters | | |
| NETWORK | Position Status | |
| Status and Alarms | Motor Operating | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Control Alarms | Output Moving | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Hardware Status | Stopped Mid Travel | <input type="radio"/> Inactive <input checked="" type="radio"/> Active |
| ▪ Hardwired Status | Moving Open | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Local Control Status | Moving Closed | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Network Status | Closed Limit | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Position Status | Open Limit | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Power Status | Movement Inhibited by Interrupter Timer | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Relay Status | Movement Inhibited by Motion Inhibit Timer | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| ▪ Torque Status | Partial Stroke Operation | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| IP Configuration | Position Sensor Fault | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| SERVICES | Manual Operation | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Remote Control | Manual Movement Close | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| Data Log | Manual Movement Open | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| LogOff | Manual Movement to Closed Limit | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |
| | Manual Movement to Open Limit | <input checked="" type="radio"/> Inactive <input type="radio"/> Active |

This shows the position calibration and status, as detailed in [PUB002-040](#).

4 Configuration of the PROFINET option card

4.3.11 Power Status

| MODULE | Power Supply Status | | |
|--|------------------------|---|------------------------------|
| Overview | Actuator Loss of Phase | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Information | 24VDC Supply Failure | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Parameters | Mains Supply Failure | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| NETWORK | Battery Low | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Status and Alarms | Battery Flat | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| <ul style="list-style-type: none"> Control Alarms Hardware Status Hardwired Status Local Control Status Network Status Position Status Power Status Relay Status Torque Status | | | |
| IP Configuration | | | |
| SERVICES | | | |
| Remote Control | | | |
| Data Log | | | |
| LogOff | | | |

This shows the status of the power supply, as detailed in [PUB002-040](#).

4.3.12 Relay Status

| MODULE | Relay Status | | |
|--|--------------------------------|---|--|
| Overview | Monitor Relay - Remote Control | <input type="radio"/> Available | <input checked="" type="radio"/> Inhibited |
| Information | Relay 1 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Parameters | Relay 2 | <input type="radio"/> Inactive | <input type="radio"/> Active |
| NETWORK | Relay 3 | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| Status and Alarms | Relay 4 | <input type="radio"/> Inactive | <input checked="" type="radio"/> Active |
| <ul style="list-style-type: none"> Control Alarms Hardware Status Hardwired Status Local Control Status Network Status Position Status Power Status Relay Status Torque Status | Relay 5 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| IP Configuration | Relay 6 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| SERVICES | Relay 7 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Remote Control | Relay 8 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Data Log | Relay 9 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| LogOff | Relay 10 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| | Relay 11 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| | Relay 12 | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |

This shows the status of the relays, as detailed in [PUB002-040](#). Not all relays are fitted on all actuators. Relays which are not fitted will show as inactive.

4.3.13 Torque Status

| MODULE | Torque Values | | |
|--|----------------------------------|---|------------------------------|
| Overview | Torque (%) | 30 | |
| Information | Raw Torque | 300 | |
| Parameters | | | |
| NETWORK | Torque Status | | |
| Status and Alarms | Stopped On Torque Mid Travel | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| <ul style="list-style-type: none"> Control Alarms Hardware Status Hardwired Status Local Control Status Network Status Position Status Power Status Relay Status Torque Status | Stopped On Torque Clockwise | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| IP Configuration | Stopped On Torque Anti-Clockwise | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| SERVICES | Torque Sensor Fault | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Remote Control | Valve Obstructed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| Data Log | Valve Jammed | <input checked="" type="radio"/> Inactive | <input type="radio"/> Active |
| LogOff | | | |

This shows the torque measurements, as detailed in [PUB002-040](#).

4 Configuration of the PROFINET option card

4.3.14 IP Configuration

| | | |
|--|-------------------------|---------------|
| MODULE Overview Information Parameters NETWORK Status and Alarms <ul style="list-style-type: none"> ▪ Control Alarms ▪ Hardware Status ▪ Hardwired Status ▪ Local Control Status ▪ Network Status ▪ Position Status ▪ Power Status ▪ Relay Status ▪ Torque Status IP Configuration SERVICES Remote Control Data Log LogOff | IP Configuration | |
| | DHCP | Disabled ▾ |
| | IP Address | 13.107.64.5 |
| | Subnet Mask | 255.255.192.0 |
| | Gateway Address | 0.0.0.0 |
| | Host Name | |
| | Domain name | |
| | DNS Server #1 | 0.0.0.0 |
| | DNS Server #2 | 0.0.0.0 |
| | Save settings | |
| Ethernet Configuration | | |
| Port 1 | Auto ▾ | |
| Port 2 | Auto ▾ | |
| Save settings | | |

This displays the same data as the Network Status page but also allows you to edit the settings. Note that if the IP address of the option card is changed, the new IP address must be used to access the webpages.

4.3.15 Remote Control

| | | |
|--|-------------------------|--------|
| MODULE Overview Information Parameters NETWORK Status and Alarms <ul style="list-style-type: none"> ▪ Control Alarms ▪ Hardware Status ▪ Hardwired Status ▪ Local Control Status ▪ Network Status ▪ Position Status ▪ Power Status ▪ Relay Status ▪ Torque Status IP Configuration SERVICES Remote Control Data Log LogOff | Digital Control | |
| | Open | Set |
| | Close | Set |
| | Stop | Set |
| | Partial Stroke | Set |
| | Position Control | |
| | Position | Enable |
| | Position | |
| | Position (%) | 50.0% |
| | Position Raw Units | 5000 |

This allows you to control the actuator remotely.

⚠ Prior to controlling the actuator remotely using this method, check parameter #39 ActionOnLossOfComms. Following a remote control operation using the option card web interface; the actuator will execute the action specified in parameter #39 ActionOnLossOfComms if there is no IO connection. To prevent an action being taken, ensure the ActionOnLossOfComms is set to None (no action).

4 Configuration of the PROFINET option card

4.3.16 Data Log

The screenshot displays a software interface for 'Data Log Management'. On the left side, there is a vertical menu with the following items: 'MODULE' (highlighted in red), 'Overview', 'Information', 'Parameters', 'NETWORK' (highlighted in red), 'Status and Alarms' (with sub-items: Control Alarms, Hardware Status, Hardwired Status, Local Control Status, Network Status, Position Status, Power Status, Relay Status, Torque Status), 'IP Configuration', 'SERVICES' (highlighted in red), 'Remote Control', 'Data Log' (highlighted in light blue), and 'LogOff'. On the right side, there is a large red button labeled 'Compile Data Log'.

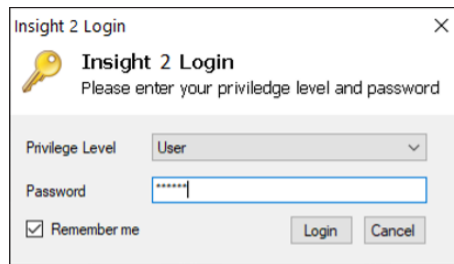
This allows you to retrieve the data log and configuration from the actuator. Note that the data log file is a binary file, and can only be processed by being sent to a remote system for analysis. An example of a suitable remote system is the Rotork iAM product.

4 Configuration of the PROFINET option card

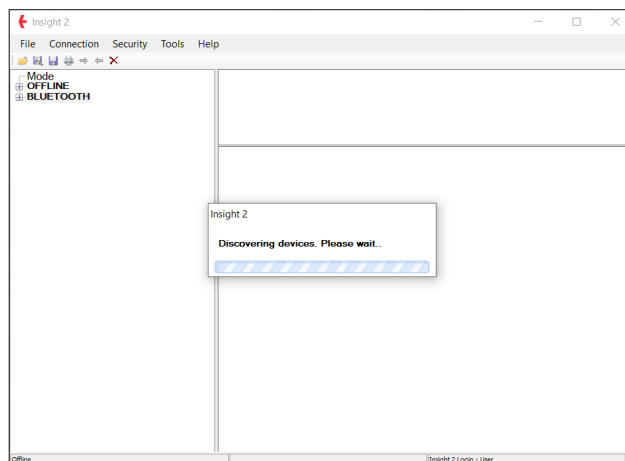
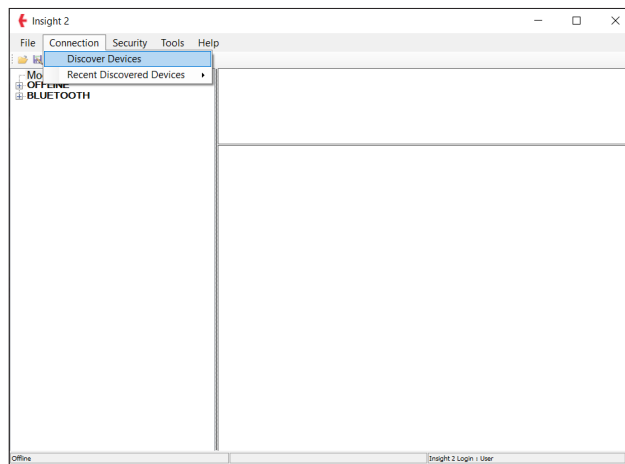
4.4 Using Insight 2 to set up the PROFINET option card

See [PUB095-004](#) for guidance on how to use Insight 2, a PC-based tool to view and configure actuator settings.

1. Launch Insight 2 and select the username assigned to you for the Privilege Level. In the Password field, enter the appropriate password. Then click on the Login button.

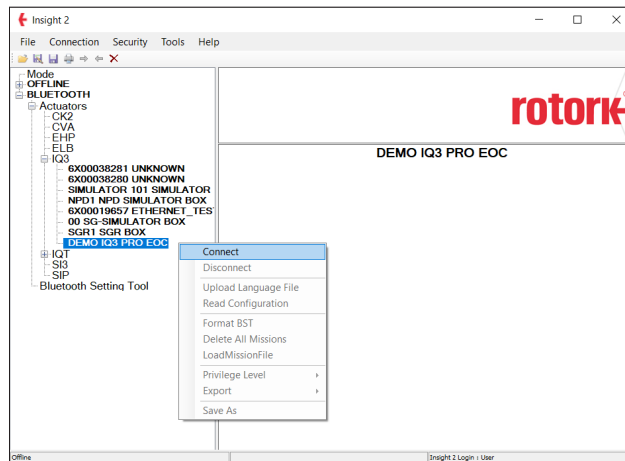


2. Insight 2 communicates with the actuator using Bluetooth. To enable discovery mode on the actuator, refer to the IQ3/IQT3 full configuration manual [PUB002-040](#).
3. With the actuator now set to Bluetooth discoverable, in Insight 2 go to Connection -> Discover Device.

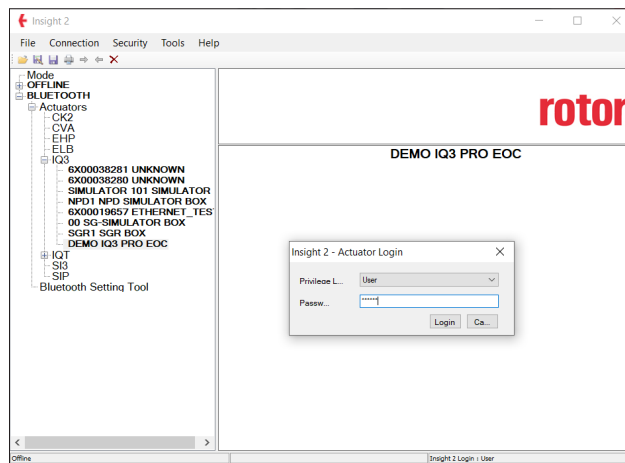


4 Configuration of the PROFINET option card

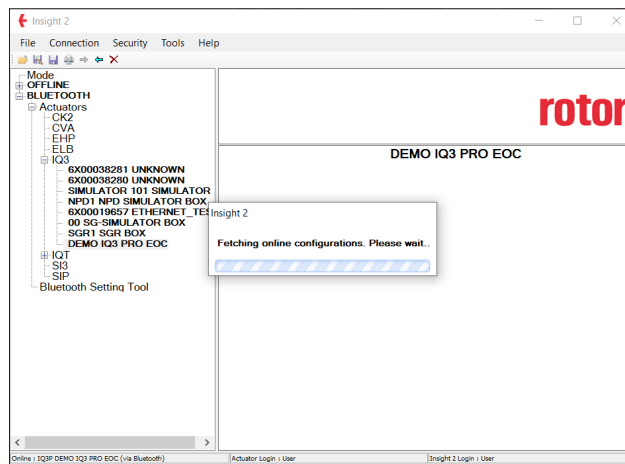
- In the left panel a list of discovered actuators appears. Right click on an actuator and click Connect. In this example, an IQ3 actuator fitted with an PROFINET option card is used.



- If connection to the actuator is successful, an actuator login prompt will appear. Set the appropriate privilege level and enter the corresponding password. Then click on the Login button.

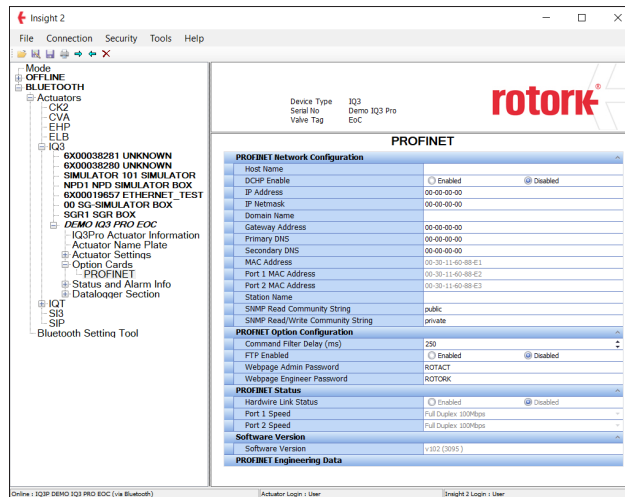


- Insight 2 fetches the online configuration.

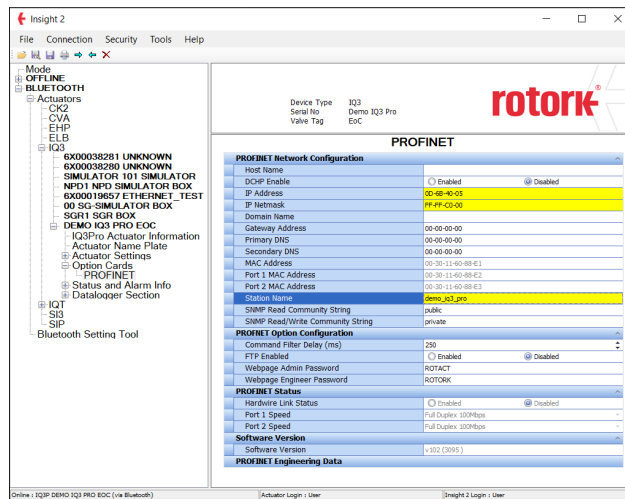


4 Configuration of the PROFINET option card

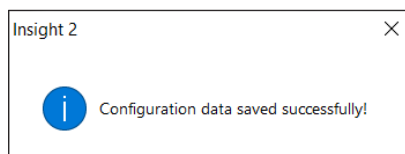
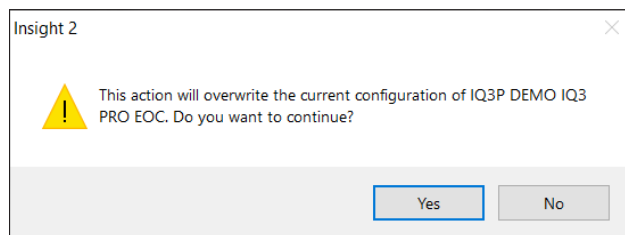
- Once the configuration is retrieved from the actuator, expand Option Cards and select PROFINET.



- To modify the network settings, type in the new settings, then click on the Send Configuration icon (blue arrow pointing right). The IP settings must be entered in hexadecimal format, separated by hyphens. For example, 13.107.64.5 is 0D-6B-40-05 in hexadecimal format.



- When sending configurations to the actuator, a warning dialog appears that current configurations of the actuator will be overwritten. Click on the Yes button to continue. If the configurations have successfully been modified, another dialog appears to confirm that configuration data has been sent to the actuator successfully.



5 Diagnostics

5.1 Channel diagnostic alarms

The option card issues Channel Diagnostic Alarm(s) with Channel Error Type ERROR when one or more of the following is true:

- Parameter #17 NAMURFailureAlarmData has non-zero value
- Parameter #18 NAMUROutOfSpecAlarmData has non-zero value
- Parameter #19 NAMURFunctionCheckAlarmData has non-zero value
- Parameter #20 NAMURMaintenanceAlarmData has non-zero value
- Byte0_CANFault bit (0x0080) in Parameter #24 NetworkStatus1 is set, which indicates that there is a communication fault between the option card and actuator control board

6 Parameters

6.1 Parameter overview table

This table gives an overview of the parameters. See Section 6.2 for bitfield descriptions, 6.3 for enumeration descriptions, and [PUB002-040](#) for detailed parameter descriptions, where required. All cyclic data can also be accessed via Read / Write record requests. Record data can be accessed by using slot 0, subslot 1, and the index of the data.

| Index | Data Name | Data Type | Data Size (octets) | Data Access | Description |
|---------------------|-----------------------------|--------------|--------------------|--------------|---|
| Cyclic Data | | | | | |
| 1 | StatusData1 | Bitfield | 2 | Read | StatusData1 to StatusData4: Actuator general status signals. |
| 2 | StatusData2 | Bitfield | 2 | Read | |
| 3 | StatusData3 | Bitfield | 2 | Read | |
| 4 | StatusData4 | Bitfield | 2 | Read | |
| 5 | AlarmData1 | Bitfield | 2 | Read | AlarmData1 to AlarmData4: Actuator general Alarm signals. |
| 6 | AlarmData2 | Bitfield | 2 | Read | |
| 7 | AlarmData3 | Bitfield | 2 | Read | |
| 8 | AlarmData4 | Bitfield | 2 | Read | |
| 9 | DigitalControlIndication | Bitfield | 2 | Read | Digital control: This is a read only version of the digital control parameter (index 22). |
| 10 | DesiredPositionIndication | Unsigned int | 2 | Read | Position control: This is a read only version of the position control parameter (index 23). Value in 100ths of %, range 0 (0.00%) to 10000 (100.00%). |
| 11 | Position | Unsigned int | 2 | Read | Position feedback in 100ths of a %. Range 0 (0.00%) to 10000 (100.00%). Will calibrate to limited range position if configured. |
| 12 | TorqueOrThrust | Signed int | 2 | Read | Instantaneous torque in 10ths of a %. Range 0 (0.0%) to 1200 (120.0%). |
| 13 | Temperature | Signed int | 2 | Read | Internal temperature of the actuator: Signed value with units of 0.1 degrees Celsius. |
| 14 | Analogueinput1 | Unsigned int | 2 | Read | Analogue input 1: Only applicable to actuators capable of additional analogue input cards. Range 0 (0.00%) to 10000 (100.00%). |
| 15 | Analogueinput2 | Unsigned int | 2 | Read | Analogue input 2: only applicable to actuators capable of additional analogue input cards. Range 0 (0.00%) to 10000 (100.00%). |
| 16 | NAMURAlarmDataAllMasked | Bitfield | 4 | Read | NAMUR 107 status and alarm data for all four failure levels (as masked in parameters 34 to 37). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 17 | NAMURFailureAlarmData | Bitfield | 4 | Read | NAMUR 107 status and alarm data for Failure only (as masked in parameter NAMURFailureDataMask, no. 34). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 18 | NAMUROutOfSpecAlarmData | Bitfield | 4 | Read | NAMUR 107 status and alarm data for out of specification only (as masked in parameter NAMUROutOfSpecDataMask, no. 35). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 19 | NAMURFunctionCheckAlarmData | Bitfield | 4 | Read | NAMUR 107 status and alarm data for function check only (as masked in parameter NAMURFunctionCheckDataMask, no. 36). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 20 | NAMURMaintenanceAlarmData | Bitfield | 4 | Read | NAMUR 107 status and alarm data for Maintenance only (as masked in parameter NAMURMaintenanceDataMask, no.37). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 21 | NAMURStatusAlarmData | Bitfield | 4 | Read | NAMUR 107 all status and alarm data (regardless of the masks in parameters 34 to 37). Data bits are defined in the Bitfields table, and more details can be found in publication PUB002-040 . |
| 22 | DigitalControl | Bitfield | 2 | Read / Write | Digital control: Digital movement command register for the actuator. Writing here will cause movement if the actuator is available for remote control. |
| 23 | DesiredPosition | Unsigned int | 2 | Read / Write | Position control: Positional command register for the actuator. Value in 100ths of %. Range 0 (0.00%) to 10000 (100.00%). Writing here will cause movement if the actuator is available for remote control and the PositionEnable bit is set in DigitalControl (index 22). |
| 24 | NetworkStatus1 | Bitfield | 2 | Read | NetworkStatus1 to NetworkStatus4: Option card status. |
| 25 | NetworkStatus2 | Bitfield | 2 | Read | |
| 26 | NetworkStatus3 | Bitfield | 2 | Read | |
| 27 | NetworkStatus4 | Bitfield | 2 | Read | |
| 28 | MultiportStatus1 | Bitfield | 2 | Read | Status Bytes for Multiport - Future Use. |
| 29 | MultiportStatus2 | Bitfield | 2 | Read | |
| 30 | MultiportStatus3 | Bitfield | 2 | Read | |
| 31 | MultiportStatus4 | Bitfield | 2 | Read | |
| 32 | MultiportNo | Unsigned int | 2 | Read | |
| 33 | SetResetRelays | Bitfield | 4 | Read / Write | Relay control: 32-bit register for controlling the output of the relays. Bits 0 to 8, sets relays 1 to 9 respectively (value 1 sets relay, value 0 does nothing). Bits 9 to 17, resets relays 1 to 9 respectively (value 1 resets relay, value 0 does nothing). |
| Acyclic Data | | | | | |
| 34 | NAMURFailureDataMask | Bitfield | 4 | Read / Write | NAMUR 107 Mask Configuration for Failure Level: Data bits are defined in the Bitfields table and more details can be found in publication PUB002-040 . |
| 35 | NAMUROutOfSpecDataMask | Bitfield | 4 | Read / Write | NAMUR 107 Mask Configuration for Out Of Specification Level: Data bits are defined in the Bitfields table and more details can be found in publication PUB002-040 . |
| 36 | NAMURFunctionCheckDataMask | Bitfield | 4 | Read / Write | NAMUR 107 Mask Configuration for Function Check Level: Data bits are defined in the Bitfields table and more details can be found in publication PUB002-040 . |
| 37 | NAMURMaintenanceDataMask | Bitfield | 4 | Read / Write | NAMUR 107 Mask Configuration for Maintenance Level: Data bits are defined in the Bitfields table and more details can be found in publication PUB002-040 . |
| 38 | LossOfCommsTimeout | Unsigned int | 2 | Read / Write | LossOfCommsTimeoutConfiguration: Configuration for action on loss of signal timeout. Time, in milliseconds, after communications with the option card have been lost, that the configured action on loss of signal will take place. |
| 39 | ActionOnLossOfComms | Enumeration | 1 | Read / Write | ActionOnLossOfComms: Configuration for action on loss of signal. Action to be performed when communication loss occurs and the time set in LossOfCommsTimeout (parameter 38) has elapsed. Values: 0 – No action. 1 – Open. 3 – Close. 5 – Stop. 7 – Go to position. |
| 40 | CommsLostPosition | Unsigned int | 2 | Read / Write | CommsLostPosition: Configuration for the position that the actuator should move to when comms lost occurs, and the action (parameter ActionOnLossOfComms, no. 39) is set to Go To position. Range 0 (0.00%) to 10000 (100.00%). |

6 Parameters

| Index | Data Name | Data Type | Data Size (octets) | Data Access | Description |
|-------|----------------------------|--------------|--------------------|--------------|---|
| 41 | FunctionOfS1 | Enumeration | 1 | Read / Write | FunctionOfS1 to FunctionOfS12: If fitted, configuration for relays 1 to 12 action. See Enumerations table for values (FunctionOfS1 to S12). Relays S1 to S4 are supplied with an actuator by default. Relays S5 to S12 are optional. They can be configured to provide communication to external devices. For example, they can signal that a partial stroke is active or 24V power supply is lost. Please refer to PUB002-040 for details. |
| 42 | FunctionOfS2 | Enumeration | 1 | Read / Write | |
| 43 | FunctionOfS3 | Enumeration | 1 | Read / Write | |
| 44 | FunctionOfS4 | Enumeration | 1 | Read / Write | |
| 45 | FunctionOfS5 | Enumeration | 1 | Read / Write | |
| 46 | FunctionOfS6 | Enumeration | 1 | Read / Write | |
| 47 | FunctionOfS7 | Enumeration | 1 | Read / Write | |
| 48 | FunctionOfS8 | Enumeration | 1 | Read / Write | |
| 49 | FunctionOfS9 | Enumeration | 1 | Read / Write | |
| 50 | FunctionOfS10 | Enumeration | 1 | Read / Write | |
| 51 | FunctionOfS11 | Enumeration | 1 | Read / Write | |
| 52 | FunctionOfS12 | Enumeration | 1 | Read / Write | |
| 53 | ContactTypeS1 | Enumeration | 1 | Read / Write | ContactTypeS1 to ContactTypeS12: If fitted, configuration for relays 1 to 12 contact type. Values: 0 – Normally Closed contact. 1 – Normally Open contact. |
| 54 | ContactTypeS2 | Enumeration | 1 | Read / Write | |
| 55 | ContactTypeS3 | Enumeration | 1 | Read / Write | |
| 56 | ContactTypeS4 | Enumeration | 1 | Read / Write | |
| 57 | ContactTypeS5 | Enumeration | 1 | Read / Write | |
| 58 | ContactTypeS6 | Enumeration | 1 | Read / Write | |
| 59 | ContactTypeS7 | Enumeration | 1 | Read / Write | |
| 60 | ContactTypeS8 | Enumeration | 1 | Read / Write | |
| 61 | ContactTypeS9 | Enumeration | 1 | Read / Write | |
| 62 | ContactTypeS10 | Enumeration | 1 | Read / Write | |
| 63 | ContactTypeS11 | Enumeration | 1 | Read / Write | |
| 64 | ContactTypeS12 | Enumeration | 1 | Read / Write | |
| 65 | PositionTripS1 | Unsigned int | 2 | Read / Write | PositionTripS1 to PositionTripS12: If fitted, configuration for relays 1 to 12 when function type 'intermediate position' is selected. Range 0 (0.0%) to 1000 (100.0%). |
| 66 | PositionTripS2 | Unsigned int | 2 | Read / Write | |
| 67 | PositionTripS3 | Unsigned int | 2 | Read / Write | |
| 68 | PositionTripS4 | Unsigned int | 2 | Read / Write | |
| 69 | PositionTripS5 | Unsigned int | 2 | Read / Write | |
| 70 | PositionTripS6 | Unsigned int | 2 | Read / Write | |
| 62 | ContactTypeS10 | Enumeration | 1 | Read / Write | |
| 63 | ContactTypeS11 | Enumeration | 1 | Read / Write | |
| 64 | ContactTypeS12 | Enumeration | 1 | Read / Write | |
| 65 | PositionTripS1 | Unsigned int | 2 | Read / Write | |
| 66 | PositionTripS2 | Unsigned int | 2 | Read / Write | |
| 67 | PositionTripS3 | Unsigned int | 2 | Read / Write | |
| 68 | PositionTripS4 | Unsigned int | 2 | Read / Write | |
| 69 | PositionTripS5 | Unsigned int | 2 | Read / Write | |
| 70 | PositionTripS6 | Unsigned int | 2 | Read / Write | |
| 71 | PositionTripS7 | Unsigned int | 2 | Read / Write | |
| 72 | PositionTripS8 | Unsigned int | 2 | Read / Write | |
| 73 | PositionTripS9 | Unsigned int | 2 | Read / Write | |
| 74 | PositionTripS10 | Unsigned int | 2 | Read / Write | |
| 75 | PositionTripS11 | Unsigned int | 2 | Read / Write | |
| 76 | PositionTripS12 | Unsigned int | 2 | Read / Write | |
| 77 | FTPEnabled | Enumeration | 1 | Read | FTPEnabled: Indicates whether File Transfer Protocol is enabled on the option card. |
| 78 | DefaultHardWireLinkEnabled | Enumeration | 1 | Read | DefaultHardWireLinkEnabled: Indicates whether the default hard wire link is inserted in the option card during power-up or firmware reset. Value 0 indicates default link not present, Value 1 indicates default link in place. If the default link is inserted, option card configurations are set to default values. |
| 79 | NetworkUptime | Unsigned int | 4 | Read | NetworkUptime: The time, in units of 0.25s, since the last reset of the option card. |
| 80 | FieldInterfaceType | Enumeration | 1 | Read | FieldInterfaceType: Indicates which Ethernet industrial protocol is in use. Value is fixed to 51 for PROFINET. |
| 81 | OptionNumber | Unsigned int | 2 | Read / Write | OptionNumber: Internal inter-board communications reference (CAN slot number). |
| 82 | CloseContactorCount | Unsigned int | 4 | Read | CloseContactorCount: Indicates the number of times the actuator has been operated in the Close direction. |
| 83 | OpenContactorCount | Unsigned int | 4 | Read | OpenContactorCount: Indicates the number of times the actuator has been operated in the Open direction. |
| 84 | NumberOfContactorSwitches | Unsigned int | 4 | Read | NumberOfContactorSwitches: Indicates the number of times the actuator has been operated in either direction. |
| 85 | ClosingTorqueAt0Pct | Unsigned int | 2 | Read | ClosingTorqueAt0Pct to ClosingTorqueAt100Pct: Instantaneous Torque log - closing. Indicates the average value of the closing torque at each percentage position. Range 0 (0%) to 120 (120%). |
| 86 | ClosingTorqueAt1Pct | Unsigned int | 2 | Read | |
| 87 | ClosingTorqueAt2Pct | Unsigned int | 2 | Read | |
| 88 | ClosingTorqueAt3Pct | Unsigned int | 2 | Read | |
| 89 | ClosingTorqueAt4Pct | Unsigned int | 2 | Read | |
| 90 | ClosingTorqueAt5Pct | Unsigned int | 2 | Read | |
| 91 | ClosingTorqueAt6Pct | Unsigned int | 2 | Read | |
| 92 | ClosingTorqueAt7Pct | Unsigned int | 2 | Read | |
| 93 | ClosingTorqueAt8Pct | Unsigned int | 2 | Read | |
| 94 | ClosingTorqueAt9Pct | Unsigned int | 2 | Read | |
| 95 | ClosingTorqueAt10Pct | Unsigned int | 2 | Read | |
| 96 | ClosingTorqueAt11Pct | Unsigned int | 2 | Read | |
| 97 | ClosingTorqueAt12Pct | Unsigned int | 2 | Read | |
| 98 | ClosingTorqueAt13Pct | Unsigned int | 2 | Read | |
| 99 | ClosingTorqueAt14Pct | Unsigned int | 2 | Read | |
| 100 | ClosingTorqueAt15Pct | Unsigned int | 2 | Read | |
| 101 | ClosingTorqueAt16Pct | Unsigned int | 2 | Read | |
| 102 | ClosingTorqueAt17Pct | Unsigned int | 2 | Read | |
| 103 | ClosingTorqueAt18Pct | Unsigned int | 2 | Read | |
| 104 | ClosingTorqueAt19Pct | Unsigned int | 2 | Read | |
| 105 | ClosingTorqueAt20Pct | Unsigned int | 2 | Read | |
| 106 | ClosingTorqueAt21Pct | Unsigned int | 2 | Read | |
| 107 | ClosingTorqueAt22Pct | Unsigned int | 2 | Read | |
| 108 | ClosingTorqueAt23Pct | Unsigned int | 2 | Read | |

6 Parameters

| Index | Data Name | Data Type | Data Size (octets) | Data Access | Description | |
|-------|-----------------------|--------------|--------------------|-------------|--|--|
| 109 | ClosingTorqueAt24Pct | Unsigned int | 2 | Read | ClosingTorqueAt0Pct to ClosingTorqueAt100Pct: Instantaneous Torque log - closing. Indicates the average value of the closing torque at each percentage position. Range 0 (0%) to 120 (120%). | |
| 110 | ClosingTorqueAt25Pct | Unsigned int | 2 | Read | | |
| 111 | ClosingTorqueAt26Pct | Unsigned int | 2 | Read | | |
| 112 | ClosingTorqueAt27Pct | Unsigned int | 2 | Read | | |
| 113 | ClosingTorqueAt28Pct | Unsigned int | 2 | Read | | |
| 114 | ClosingTorqueAt29Pct | Unsigned int | 2 | Read | | |
| 115 | ClosingTorqueAt30Pct | Unsigned int | 2 | Read | | |
| 116 | ClosingTorqueAt31Pct | Unsigned int | 2 | Read | | |
| 117 | ClosingTorqueAt32Pct | Unsigned int | 2 | Read | | |
| 118 | ClosingTorqueAt33Pct | Unsigned int | 2 | Read | | |
| 119 | ClosingTorqueAt34Pct | Unsigned int | 2 | Read | | |
| 120 | ClosingTorqueAt35Pct | Unsigned int | 2 | Read | | |
| 121 | ClosingTorqueAt36Pct | Unsigned int | 2 | Read | | |
| 122 | ClosingTorqueAt37Pct | Unsigned int | 2 | Read | | |
| 123 | ClosingTorqueAt38Pct | Unsigned int | 2 | Read | | |
| 124 | ClosingTorqueAt39Pct | Unsigned int | 2 | Read | | |
| 125 | ClosingTorqueAt40Pct | Unsigned int | 2 | Read | | |
| 126 | ClosingTorqueAt41Pct | Unsigned int | 2 | Read | | |
| 127 | ClosingTorqueAt42Pct | Unsigned int | 2 | Read | | |
| 128 | ClosingTorqueAt43Pct | Unsigned int | 2 | Read | | |
| 129 | ClosingTorqueAt44Pct | Unsigned int | 2 | Read | | |
| 130 | ClosingTorqueAt45Pct | Unsigned int | 2 | Read | | |
| 131 | ClosingTorqueAt46Pct | Unsigned int | 2 | Read | | |
| 132 | ClosingTorqueAt47Pct | Unsigned int | 2 | Read | | |
| 133 | ClosingTorqueAt48Pct | Unsigned int | 2 | Read | | |
| 134 | ClosingTorqueAt49Pct | Unsigned int | 2 | Read | | |
| 135 | ClosingTorqueAt50Pct | Unsigned int | 2 | Read | | |
| 136 | ClosingTorqueAt51Pct | Unsigned int | 2 | Read | | |
| 137 | ClosingTorqueAt52Pct | Unsigned int | 2 | Read | | |
| 138 | ClosingTorqueAt53Pct | Unsigned int | 2 | Read | | |
| 139 | ClosingTorqueAt54Pct | Unsigned int | 2 | Read | | |
| 140 | ClosingTorqueAt55Pct | Unsigned int | 2 | Read | | |
| 141 | ClosingTorqueAt56Pct | Unsigned int | 2 | Read | | |
| 142 | ClosingTorqueAt57Pct | Unsigned int | 2 | Read | | |
| 143 | ClosingTorqueAt58Pct | Unsigned int | 2 | Read | | |
| 144 | ClosingTorqueAt59Pct | Unsigned int | 2 | Read | | |
| 145 | ClosingTorqueAt60Pct | Unsigned int | 2 | Read | | |
| 146 | ClosingTorqueAt61Pct | Unsigned int | 2 | Read | | |
| 147 | ClosingTorqueAt62Pct | Unsigned int | 2 | Read | | |
| 148 | ClosingTorqueAt63Pct | Unsigned int | 2 | Read | | |
| 149 | ClosingTorqueAt64Pct | Unsigned int | 2 | Read | | |
| 150 | ClosingTorqueAt65Pct | Unsigned int | 2 | Read | | |
| 151 | ClosingTorqueAt66Pct | Unsigned int | 2 | Read | | |
| 152 | ClosingTorqueAt67Pct | Unsigned int | 2 | Read | | |
| 153 | ClosingTorqueAt68Pct | Unsigned int | 2 | Read | | |
| 154 | ClosingTorqueAt69Pct | Unsigned int | 2 | Read | | |
| 155 | ClosingTorqueAt70Pct | Unsigned int | 2 | Read | | |
| 156 | ClosingTorqueAt71Pct | Unsigned int | 2 | Read | | |
| 157 | ClosingTorqueAt72Pct | Unsigned int | 2 | Read | | |
| 158 | ClosingTorqueAt73Pct | Unsigned int | 2 | Read | | |
| 159 | ClosingTorqueAt74Pct | Unsigned int | 2 | Read | | |
| 160 | ClosingTorqueAt75Pct | Unsigned int | 2 | Read | | |
| 161 | ClosingTorqueAt76Pct | Unsigned int | 2 | Read | | |
| 162 | ClosingTorqueAt77Pct | Unsigned int | 2 | Read | | |
| 163 | ClosingTorqueAt78Pct | Unsigned int | 2 | Read | | |
| 164 | ClosingTorqueAt79Pct | Unsigned int | 2 | Read | | |
| 165 | ClosingTorqueAt80Pct | Unsigned int | 2 | Read | | |
| 166 | ClosingTorqueAt81Pct | Unsigned int | 2 | Read | | |
| 167 | ClosingTorqueAt82Pct | Unsigned int | 2 | Read | | |
| 168 | ClosingTorqueAt83Pct | Unsigned int | 2 | Read | | |
| 169 | ClosingTorqueAt84Pct | Unsigned int | 2 | Read | | |
| 170 | ClosingTorqueAt85Pct | Unsigned int | 2 | Read | | |
| 171 | ClosingTorqueAt86Pct | Unsigned int | 2 | Read | | |
| 172 | ClosingTorqueAt87Pct | Unsigned int | 2 | Read | | |
| 173 | ClosingTorqueAt88Pct | Unsigned int | 2 | Read | | |
| 174 | ClosingTorqueAt89Pct | Unsigned int | 2 | Read | | |
| 175 | ClosingTorqueAt90Pct | Unsigned int | 2 | Read | | |
| 176 | ClosingTorqueAt91Pct | Unsigned int | 2 | Read | | |
| 177 | ClosingTorqueAt92Pct | Unsigned int | 2 | Read | | |
| 178 | ClosingTorqueAt93Pct | Unsigned int | 2 | Read | | |
| 179 | ClosingTorqueAt94Pct | Unsigned int | 2 | Read | | |
| 180 | ClosingTorqueAt95Pct | Unsigned int | 2 | Read | | |
| 181 | ClosingTorqueAt96Pct | Unsigned int | 2 | Read | | |
| 182 | ClosingTorqueAt97Pct | Unsigned int | 2 | Read | | |
| 183 | ClosingTorqueAt98Pct | Unsigned int | 2 | Read | | |
| 184 | ClosingTorqueAt99Pct | Unsigned int | 2 | Read | | |
| 185 | ClosingTorqueAt100Pct | Unsigned int | 2 | Read | | |
| 186 | OpeningTorqueAt0Pct | Unsigned int | 2 | Read | | OpeningTorqueAt0Pct to OpeningTorqueAt100Pct: Instantaneous Torque log - opening. Indicates the average value of the opening torque at each percentage position. Range 0 (0%) to 120 (120%). |
| 187 | OpeningTorqueAt1Pct | Unsigned int | 2 | Read | | |
| 188 | OpeningTorqueAt2Pct | Unsigned int | 2 | Read | | |
| 189 | OpeningTorqueAt3Pct | Unsigned int | 2 | Read | | |
| 190 | OpeningTorqueAt4Pct | Unsigned int | 2 | Read | | |

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| Index | Data Name | Data Type | Data Size (octets) | Data Access | Description |
|-------|----------------------|--------------|--------------------|-------------|---|
| 191 | OpeningTorqueAt5Pct | Unsigned int | 2 | Read | OpeningTorqueAt0Pct to OpeningTorqueAt100Pct: Instantaneous Torque log – opening. Indicates the average value of the opening torque at each percentage position. Range 0 (0%) to 120 (120%). |
| 192 | OpeningTorqueAt6Pct | Unsigned int | 2 | Read | |
| 193 | OpeningTorqueAt7Pct | Unsigned int | 2 | Read | |
| 194 | OpeningTorqueAt8Pct | Unsigned int | 2 | Read | |
| 195 | OpeningTorqueAt9Pct | Unsigned int | 2 | Read | |
| 196 | OpeningTorqueAt10Pct | Unsigned int | 2 | Read | |
| 197 | OpeningTorqueAt11Pct | Unsigned int | 2 | Read | |
| 198 | OpeningTorqueAt12Pct | Unsigned int | 2 | Read | |
| 199 | OpeningTorqueAt13Pct | Unsigned int | 2 | Read | |
| 200 | OpeningTorqueAt14Pct | Unsigned int | 2 | Read | |
| 201 | OpeningTorqueAt15Pct | Unsigned int | 2 | Read | |
| 202 | OpeningTorqueAt16Pct | Unsigned int | 2 | Read | |
| 203 | OpeningTorqueAt17Pct | Unsigned int | 2 | Read | |
| 204 | OpeningTorqueAt18Pct | Unsigned int | 2 | Read | |
| 205 | OpeningTorqueAt19Pct | Unsigned int | 2 | Read | |
| 206 | OpeningTorqueAt20Pct | Unsigned int | 2 | Read | |
| 207 | OpeningTorqueAt21Pct | Unsigned int | 2 | Read | |
| 208 | OpeningTorqueAt22Pct | Unsigned int | 2 | Read | |
| 209 | OpeningTorqueAt23Pct | Unsigned int | 2 | Read | |
| 210 | OpeningTorqueAt24Pct | Unsigned int | 2 | Read | |
| 211 | OpeningTorqueAt25Pct | Unsigned int | 2 | Read | |
| 212 | OpeningTorqueAt26Pct | Unsigned int | 2 | Read | |
| 213 | OpeningTorqueAt27Pct | Unsigned int | 2 | Read | |
| 214 | OpeningTorqueAt28Pct | Unsigned int | 2 | Read | |
| 215 | OpeningTorqueAt29Pct | Unsigned int | 2 | Read | |
| 216 | OpeningTorqueAt30Pct | Unsigned int | 2 | Read | |
| 217 | OpeningTorqueAt31Pct | Unsigned int | 2 | Read | |
| 218 | OpeningTorqueAt32Pct | Unsigned int | 2 | Read | |
| 219 | OpeningTorqueAt33Pct | Unsigned int | 2 | Read | |
| 220 | OpeningTorqueAt34Pct | Unsigned int | 2 | Read | |
| 221 | OpeningTorqueAt35Pct | Unsigned int | 2 | Read | |
| 222 | OpeningTorqueAt36Pct | Unsigned int | 2 | Read | |
| 223 | OpeningTorqueAt37Pct | Unsigned int | 2 | Read | |
| 224 | OpeningTorqueAt38Pct | Unsigned int | 2 | Read | |
| 225 | OpeningTorqueAt39Pct | Unsigned int | 2 | Read | |
| 226 | OpeningTorqueAt40Pct | Unsigned int | 2 | Read | |
| 227 | OpeningTorqueAt41Pct | Unsigned int | 2 | Read | |
| 228 | OpeningTorqueAt42Pct | Unsigned int | 2 | Read | |
| 229 | OpeningTorqueAt43Pct | Unsigned int | 2 | Read | |
| 230 | OpeningTorqueAt44Pct | Unsigned int | 2 | Read | |
| 231 | OpeningTorqueAt45Pct | Unsigned int | 2 | Read | |
| 232 | OpeningTorqueAt46Pct | Unsigned int | 2 | Read | |
| 233 | OpeningTorqueAt47Pct | Unsigned int | 2 | Read | |
| 234 | OpeningTorqueAt48Pct | Unsigned int | 2 | Read | |
| 235 | OpeningTorqueAt49Pct | Unsigned int | 2 | Read | |
| 236 | OpeningTorqueAt50Pct | Unsigned int | 2 | Read | |
| 237 | OpeningTorqueAt51Pct | Unsigned int | 2 | Read | |
| 238 | OpeningTorqueAt52Pct | Unsigned int | 2 | Read | |
| 239 | OpeningTorqueAt53Pct | Unsigned int | 2 | Read | |
| 240 | OpeningTorqueAt54Pct | Unsigned int | 2 | Read | |
| 241 | OpeningTorqueAt55Pct | Unsigned int | 2 | Read | |
| 242 | OpeningTorqueAt56Pct | Unsigned int | 2 | Read | |
| 243 | OpeningTorqueAt57Pct | Unsigned int | 2 | Read | |
| 244 | OpeningTorqueAt58Pct | Unsigned int | 2 | Read | |
| 245 | OpeningTorqueAt59Pct | Unsigned int | 2 | Read | |
| 246 | OpeningTorqueAt60Pct | Unsigned int | 2 | Read | |
| 247 | OpeningTorqueAt61Pct | Unsigned int | 2 | Read | |
| 248 | OpeningTorqueAt62Pct | Unsigned int | 2 | Read | |
| 249 | OpeningTorqueAt63Pct | Unsigned int | 2 | Read | |
| 250 | OpeningTorqueAt64Pct | Unsigned int | 2 | Read | |
| 251 | OpeningTorqueAt65Pct | Unsigned int | 2 | Read | |
| 252 | OpeningTorqueAt66Pct | Unsigned int | 2 | Read | |
| 253 | OpeningTorqueAt67Pct | Unsigned int | 2 | Read | |
| 254 | OpeningTorqueAt68Pct | Unsigned int | 2 | Read | |
| 255 | OpeningTorqueAt69Pct | Unsigned int | 2 | Read | |
| 256 | OpeningTorqueAt70Pct | Unsigned int | 2 | Read | |
| 257 | OpeningTorqueAt71Pct | Unsigned int | 2 | Read | |
| 258 | OpeningTorqueAt72Pct | Unsigned int | 2 | Read | |
| 259 | OpeningTorqueAt73Pct | Unsigned int | 2 | Read | |
| 260 | OpeningTorqueAt74Pct | Unsigned int | 2 | Read | |
| 261 | OpeningTorqueAt75Pct | Unsigned int | 2 | Read | |
| 262 | OpeningTorqueAt76Pct | Unsigned int | 2 | Read | |
| 263 | OpeningTorqueAt77Pct | Unsigned int | 2 | Read | |
| 264 | OpeningTorqueAt78Pct | Unsigned int | 2 | Read | |
| 265 | OpeningTorqueAt79Pct | Unsigned int | 2 | Read | |
| 266 | OpeningTorqueAt80Pct | Unsigned int | 2 | Read | |
| 267 | OpeningTorqueAt81Pct | Unsigned int | 2 | Read | |
| 268 | OpeningTorqueAt82Pct | Unsigned int | 2 | Read | |
| 269 | OpeningTorqueAt83Pct | Unsigned int | 2 | Read | |
| 270 | OpeningTorqueAt84Pct | Unsigned int | 2 | Read | |
| 271 | OpeningTorqueAt85Pct | Unsigned int | 2 | Read | |
| 272 | OpeningTorqueAt86Pct | Unsigned int | 2 | Read | |
| 273 | OpeningTorqueAt87Pct | Unsigned int | 2 | Read | |

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| Index | Data Name | Data Type | Data Size (octets) | Data Access | Description |
|-------|-------------------------------------|--------------|--------------------|--------------|--|
| 274 | OpeningTorqueAt88Pct | Unsigned int | 2 | Read | OpeningTorqueAt0Pct to OpeningTorqueAt100Pct: Instantaneous Torque log – opening. Indicates the average value of the opening torque at each percentage position. Range 0 (0%) to 120 (120%). |
| 275 | OpeningTorqueAt89Pct | Unsigned int | 2 | Read | |
| 276 | OpeningTorqueAt90Pct | Unsigned int | 2 | Read | |
| 277 | OpeningTorqueAt91Pct | Unsigned int | 2 | Read | |
| 278 | OpeningTorqueAt92Pct | Unsigned int | 2 | Read | |
| 279 | OpeningTorqueAt93Pct | Unsigned int | 2 | Read | |
| 280 | OpeningTorqueAt94Pct | Unsigned int | 2 | Read | |
| 281 | OpeningTorqueAt95Pct | Unsigned int | 2 | Read | |
| 282 | OpeningTorqueAt96Pct | Unsigned int | 2 | Read | |
| 283 | OpeningTorqueAt97Pct | Unsigned int | 2 | Read | |
| 284 | OpeningTorqueAt98Pct | Unsigned int | 2 | Read | |
| 285 | OpeningTorqueAt99Pct | Unsigned int | 2 | Read | |
| 286 | OpeningTorqueAt100Pct | Unsigned int | 2 | Read | |
| 287 | ActuatorTag | Char | 32 | Read / Write | ActuatorTag: The customers Valve Tag can be entered in here for reference. |
| 288 | ActuatorType | Enumeration | 1 | Read / Write | Actuator Type: Value 26 – IQ3Pro, value 27 – IQ3TPro. |
| 289 | ActuatorSerialNumber | Char | 16 | Read / Write | ActuatorSerialNumber: Manufacturer data. Actuator serial number. |
| 290 | ControllerSerialNumber | Char | 24 | Read / Write | ControllerSerialNumber: Manufacturer data. Serial number for actuator main controller board. |
| 291 | UISerialNumber | Char | 24 | Read / Write | UISerialNumber: Manufacturer data. Serial Number for user interface board/local controls. |
| 292 | PositionSensorSerialNumber | Char | 24 | Read / Write | PositionSensorSerialNumber: Manufacturer data. Serial number for the position sensor. |
| 293 | DCPowerModuleSerialNumber | Char | 24 | Read / Write | DCPowerModuleSerialNumber: Manufacturer data. Serial number for the DC power board. |
| 294 | PowerModuleSerialNumber | Char | 24 | Read / Write | PowerModuleSerialNumber: Manufacturer data. Serial number for the power module board. |
| 295 | SolidStateStarterModuleSerialNumber | Char | 24 | Read / Write | SolidStateStarterModuleSerialNumber: Manufacturer data. Serial Number for the solid-state starter module board. |
| 296 | Option1SerialNumber | Char | 24 | Read / Write | Option1SerialNumber to Option4SerialNumber: Manufacturer data. Serial Number for options 1 to 4 - if fitted. |
| 297 | Option2SerialNumber | Char | 24 | Read / Write | |
| 298 | Option3SerialNumber | Char | 24 | Read / Write | |
| 299 | Option4SerialNumber | Char | 24 | Read / Write | |
| 300 | AssetIDList1 | Unsigned int | 2 | Read | AssetIDList1 to AssetIDList10: Lists the asset IDs in the system. This data is used internally. |
| 301 | AssetIDList2 | Unsigned int | 2 | Read | |
| 302 | AssetIDList3 | Unsigned int | 2 | Read | |
| 303 | AssetIDList4 | Unsigned int | 2 | Read | |
| 304 | AssetIDList5 | Unsigned int | 2 | Read | |
| 305 | AssetIDList6 | Unsigned int | 2 | Read | |
| 306 | AssetIDList7 | Unsigned int | 2 | Read | |
| 307 | AssetIDList8 | Unsigned int | 2 | Read | |
| 308 | AssetIDList9 | Unsigned int | 2 | Read | |
| 309 | AssetIDList10 | Unsigned int | 2 | Read | |
| 310 | Asset1SoftwareVersion | Char | 12 | Read | Asset1SoftwareVersion to Asset10SoftwareVersion: Software versions for the assets (main actuator board, user interface board, option card, etc) in the actuator. Each software version is max 12 characters long, which is the version number followed by build number. For example, "v102(3145)". |
| 311 | Asset2SoftwareVersion | Char | 12 | Read | |
| 312 | Asset3SoftwareVersion | Char | 12 | Read | |
| 313 | Asset4SoftwareVersion | Char | 12 | Read | |
| 314 | Asset5SoftwareVersion | Char | 12 | Read | |
| 315 | Asset6SoftwareVersion | Char | 12 | Read | |
| 316 | Asset7SoftwareVersion | Char | 12 | Read | |
| 317 | Asset8SoftwareVersion | Char | 12 | Read | |
| 318 | Asset9SoftwareVersion | Char | 12 | Read | |
| 319 | Asset10SoftwareVersion | Char | 12 | Read | |
| 320 | FirmwareUpgradeoverNetworkEnable | Enumeration | 1 | Read / Write | FirmwareUpgradeoverNetworkEnable: Used to initiate the firmware upgrade of the network module. Firmware file is required to be loaded first via FTP. Writing 1 initiates upgrade. |
| 321 | FileLoadStatus | Enumeration | 1 | Read / Write | FileLoadStatus: Status parameter for data log and config file compilation. 0 - Idle, or Done (ready for download from the option card webpages). 1 - Set to 1 to start data log/config file compilation. Or if reading, 1 indicates compilation in progress. 2 - Error during compilation. The option card must first get the data log from the actuator user interface board, initiated by setting this parameter to 1, once compiled and 'Done' is indicated, then it's ready for download from the webpages. Used by option card webpages ONLY. |
| 322 | FileLoadProgress | Unsigned int | 2 | Read | FileLoadProgress: Progress parameter for data log and config file compilation. Range 0 to 100, indicating % complete. Used by option card webpages ONLY. |
| 323 | DataLogTimestamp | Char | 16 | Read / Write | DataLogTimestamp: Data log and configuration date and time. Used by option card webpages ONLY. |

6 Parameters

6.2 Bitfields

| Index | Data Name | Bit Name | Bit Mask | Description |
|------------------------|-------------|--|----------|---|
| 1 | StatusData1 | Byte0_DI1 | 0x0001 | Digital Input 1: Reports the status of the contact connected to the actuator hard-wired Open terminal. The input can be used to control the actuator or simply to report the status of a plant feedback signal. The function is set in the Auxiliary Input Mask parameter which determines whether the bit is reported as true (1) for a closed contact or an open contact and whether the input controls the actuator or not. Note that the input is always reported even when it is also controlling the actuator. For details on the Auxiliary Input mask, please refer to the description in PUB002-040 . |
| | | Byte0_DI2 | 0x0002 | Digital Input 2: Reports the status of the contact connected to the actuator hard-wired Close terminal. The input can be used to control the actuator or simply to report the status of a plant feedback signal. The function is set in the Auxiliary Input Mask parameter which determines whether the bit is reported as true (1) for a closed contact or an open contact and whether the input controls the actuator or not. Note that the input is always reported even when it is also controlling the actuator. For details on the Auxiliary Input mask, please refer to the description in PUB002-040 . |
| | | Byte0_DI3 | 0x0004 | Digital Input 3: Reports the status of the contact connected to the actuator hard-wired Stop / Maintain terminal. The input can be used to control the actuator or simply to report the status of a plant feedback signal. The function is set in the Auxiliary Input Mask parameter which determines whether the bit is reported as true (1) for a closed contact or an open contact and whether the input controls the actuator or not. Note that the input is always reported even when it is also controlling the actuator. For details on the Auxiliary Input mask, please refer to the description in PUB002-040 . |
| | | Byte0_DI4 | 0x0008 | Digital Input 4: Reports the status of the contact connected to the actuator hard-wired ESD terminal. The input can be used to control the actuator or simply to report the status of a plant feedback signal. The function is set in the Auxiliary Input Mask parameter which determines whether the bit is reported as true (1) for a closed contact or an open contact and whether the input controls the actuator or not. Note that the input is always reported even when it is also controlling the actuator. For details on the Auxiliary Input mask, please refer to the description in PUB002-040 . |
| | | Byte0_DI5 | 0x0010 | Digital Input 5 to Digital Input 8: These bits report the status of the contact connected to the optional actuator hard-wired Digital Inputs 5 to 8. These are ignored if the optional digital input card for contacts S5 to S8 is not fitted. |
| | | Byte0_DI6 | 0x0020 | |
| | | Byte0_DI7 | 0x0040 | |
| | | Byte0_DI8 | 0x0080 | |
| | | Byte1_R9 | 0x0100 | Relay 9 Status to Relay 12 Status: These bits report the status of relays 9 to 12 (S contacts 9 to 12). These are ignored if the optional digital input card for relays S9 to 12 is not fitted. |
| | | Byte1_R10 | 0x0200 | |
| | | Byte1_R11 | 0x0400 | |
| | | Byte1_R12 | 0x0800 | |
| | | Byte1_DI9 | 0x1000 | Digital Input 9 to Digital Input 12: These bits report the status of the signal connected to the optional actuator hard-wired Digital Inputs 9 to 12 (if fitted). |
| | | Byte1_DI10 | 0x2000 | |
| | | Byte1_DI11 | 0x4000 | |
| | | Byte1_DI12 | 0x8000 | |
| 2 | StatusData2 | Byte2_S1 | 0x0001 | Relay 1 Status to Relay 8 Status: These bits report the status of relays 1 to 8 (S contacts 1 to 8). |
| | | Byte2_S2 | 0x0002 | |
| | | Byte2_S3 | 0x0004 | |
| | | Byte2_S4 | 0x0008 | |
| | | Byte2_S5 | 0x0010 | |
| | | Byte2_S6 | 0x0020 | |
| | | Byte2_S7 | 0x0040 | |
| | | Byte2_S8 | 0x0080 | |
| | | Byte3_MRUN | 0x0100 | Motor Running: True (1) when the actuator is attempting to run the motor. |
| | | Byte3_MOP | 0x0200 | Moving Open: True (1) when the actuator is moving to the open position. |
| | | Byte3_MCL | 0x0400 | Moving Close: True (1) when the actuator is moving to the closed position. |
| | | Byte3_CLT | 0x0800 | Close Limit Reached: True (1) when the actuator is at the closed limit. |
| | | Byte3_OLT | 0x1000 | Open Limit Reached: True (1) when the actuator is at the open limit. |
| | | Byte3_COLMOV | 0x2000 | Column Moving: True (1) when actuator the centre column is rotating. |
| Byte3_RSEL | 0x4000 | Remote Selected: True (1) when the actuator three position remote / local stop / local selector is in the Remote position. The selector must be in this position for control using the option card to be permitted. | | |
| Byte3_LOCAL | 0x8000 | Local Selected: True (1) when the actuator three position remote / local stop / local selector is in the Local position. Remote control of the actuator is not possible when the selector is in this position. | | |
| 3 | StatusData3 | Byte4_LSTOP | 0x0001 | Local Stop Selected: The actuator three position selector passes from Local to Remote or Remote to Local through the Local Stop position. The switch can also be placed in Local Stop. When the switch is in the Local Stop position this bit will be true (1). Remote control of the actuator is not possible when the selector is in this position. |
| | | Byte4_LTEST | 0x0002 | Reserved. |
| | | Byte4_TTC | 0x0004 | Torque Trip Open Active: True (1) when the actuator has torqued off in the open direction. |
| | | Byte4_TTA | 0x0008 | Torque Trip Close Active: True (1) when the actuator has torqued off in the close direction. |
| | | Byte4_SM | 0x0010 | Reserved. |
| | | Byte4_ITA | 0x0020 | Interrupter Timer Active: True (1) when the interrupter timer is active. The Interrupter Timer in the can be used over part or the entire actuator stroke to slow down the effective speed of valve travel. |
| | | Byte4_MIT | 0x0040 | Motion Inhibit timer Active: True (1) when the Motion Inhibit timer is active. The Motion Inhibit Timer is used in position control to prevent the actuator from exceeding its prescribed number of starts per hour, or to reduce the effects of hunting during closed loop control. |
| | | Byte4_SMT | 0x0080 | Stopped Mid Travel: True (1) when the actuator has stopped in mid travel (i.e. not at the closed or open limit). |
| | | Byte5_ESD | 0x0100 | ESD Active: True (1) when an ESD is active. |
| | | Byte5_PSA | 0x0200 | Partial Stroke in Progress: True (1) when a partial stroke test is active. |
| | | Byte5_PHSEQ | 0x0400 | Phase Sequence is True (1) when the phase sequence is positive. |
| | | Byte5_LocalRun | 0x0800 | Reserved. |
| | | Byte5_SpareStatus4 | 0x1000 | Reserved. |
| | | Byte5_PSP | 0x2000 | Partial Stroke Passed: True (1) when a partial stroke test completed successfully. |
| Byte5_PowerMode | 0x4000 | Reserved. | | |
| Byte5_PositionerActive | 0x8000 | Positioner Active: True (1) when the actuator moving due to a position command. | | |

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| Index | Data Name | Bit Name | Bit Mask | Description |
|-------------|-------------|----------------------|------------|---|
| 4 | StatusData4 | Byte6_SlowModeActive | 0x0001 | Slow Mode Active: True (1) when slow mode is active. Applicable to IQT actuators only. In positioning mode, when the IQT actuator approaches its setpoint the motor automatically switches to 'slow mode' and the actuator runs at a lower speed. This allows any developed inertia to be dissipated and a better positional accuracy to be achieved without overshoot. Please refer to PUB002-040 for further details. |
| | | Byte6_SpareStatus1 | 0x0002 | Reserved. |
| | | Byte6_SpareStatus2 | 0x0004 | |
| | | Byte6_SpareStatus3 | 0x0008 | |
| | | Byte6_SpareStatus4 | 0x0010 | |
| | | Byte6_SpareStatus5 | 0x0020 | |
| | | Byte6_SpareStatus6 | 0x0040 | |
| | | Byte6_SpareStatus7 | 0x0080 | |
| 5 | AlarmData1 | Byte0_EEPROM | 0x0001 | EEPROM checksum error: True (1) when there is a configuration error. |
| | | Byte0_THERM | 0x0002 | Thermostat Tripped: If the temperature of the motor windings rises above the thermostat trip value, the thermostat contact will open, and this signal will be present (1). There are no adjustments for the temperature at which the thermostat trip operates. The motor will be stopped if the thermostat trips. Only once the motor has cooled down and the thermostat has reset itself can a new Remote, Network Host or Local command to move the actuator be carried out. |
| | | Byte0_VOBS | 0x0004 | Valve Obstructed: True (1) if the actuator stops in mid travel when not expected to do so after receiving a command to move. The bit will remain true (1) until the actuator position changes by 2% or more. |
| | | Byte0_VJAM | 0x0008 | Valve Jammed: True (1) if the actuator is stationary at the end of travel and fails to move away from the seat of the valve when expected to do so. The bit will remain true (1) until the actuator position changes by 2% or more. |
| | | Byte0_MAN | 0x0010 | Manual Movement: True (1) when the actuator is moved by the handwheel away from the last position. |
| | | Byte0_MCLG | 0x0020 | Manual Movement in close direction: True (1) when the actuator is moved by the handwheel away from the last position in the close direction. |
| | | Byte0_MOPG | 0x0040 | Manual Movement in open direction: True (1) when the actuator is moved by the handwheel away from the last position in the open direction. |
| | | Byte0_MCL | 0x0080 | Manual movement moved valve to close position: True (1) when the actuator is moved by the handwheel to the closed limit. |
| | | Byte1_MOP | 0x0100 | Manual movement moved valve to open position: True (1) when the actuator is moved by the handwheel to the open limit. |
| | | Byte1_EOT | 0x0200 | End of travel movement: True (1) when movement after the actuator has reached its limit occurs. |
| | | Byte1_STALL | 0x0400 | Actuator has stalled: True (1) when the actuator is trying to operate, but there is no centre column motion. |
| | | Byte1_MR | 0x0800 | Monitor Relay: True (1) when actuator remote control is not available. The actuator Monitor Relay status is a composite signal for several alarms. See PUB002-040 for details. |
| | | Byte1_WD | 0x1000 | Reserved. |
| | | Byte1_BL | 0x2000 | Battery Low: The status of the internal battery is monitored, and should it fall below a critical level this signal will become true (1). The battery is used to power the circuits used to keep track of the valve position when the actuator mains power is switched off. This battery is used only when the actuator has no power feed, and the valve is moved. |
| | | Byte1_BF | 0x4000 | Battery flat: The status of the internal battery is monitored, and should it fall below a critical level this signal will become true (1). The battery is used to power the circuits used to keep track of the valve position when the actuator mains power is switched off. This battery is used only when the actuator has no power feed, and the valve is moved. |
| | | 6 | AlarmData2 | Byte1_EEU |
| Byte2_DU | 0x0001 | | | Datalogger Updated: True (1) when the datalogger in the actuator has been updated. |
| Byte2_GA | 0x0002 | | | General Alarm: True (1) when any alarm is detected, including battery low or flat, valve alarm, actuator alarm, control alarm, valve obstructed or jammed (torque tripped) or monitor relay (not available for remote control). |
| Byte2_VA | 0x0004 | | | Valve Alarm: True (1) when the actuator has tripped on torque in any direction in mid travel or on the limit (when not set to torque off on limit) or when the actuator has stalled. |
| Byte2_AA | 0x0008 | | | Actuator Alarm: True (1) when any of the actuator alarm are set, these include: Phase loss, thermostat tripped, local controls fail, position sensor fail, torque sensor fail, power loss inhibit enabled and active, EEPROM Error, local signal in remote, position loss fail. |
| Byte2_NWKF | 0x0010 | | | Network Card Fault: True (1) when a fault is being indicated by the option card. It is caused by one or more of the following conditions: <ul style="list-style-type: none"> • Network card configuration error • Remote Hand Station error • Battery charger communications error |
| Byte2_PSE | 0x0020 | | | Partial Stroke Error: True (1) when an error occurs when requesting or operating a partial stroke test. For example, the partial stroke cannot complete as the unit is at the wrong limit. |
| Byte2_COCT | 0x0040 | | | Control Contention: True (1) when there is contention in control, if more than one actuator control bit is active. |
| Byte2_MF | 0x0080 | | | Mains Fail: True (1) when there is a power supply failure. |
| Byte3_COMMS | 0x0100 | | | Comms Loss: True (1) if communication is lost between the option card and actuator, or if one or more CIP Class 1 or Class 3 connections have been lost. |
| Byte3_LOP | 0x0200 | | | Loss of Phase: True (1) if a phase is lost in a three-phase actuator. |
| Byte3_24VDC | 0x0400 | | | 24VDC Customer fault: True (1) if the 24V supply from the actuator (customer supply) has a fault. |
| Byte3_CA | 0x0800 | | | Control Alarm: True (1) if an ESD is active or an Interlock active and inhibiting the actuator. |
| Byte3_PSF | 0x1000 | | | Position Sensor Fault: True (1) if the position sensor (encoder) is in alarm. |
| Byte3_TSF | 0x2000 | | | Torque Sensor Fault: True (1) if the torque sensor is in alarm. |
| 7 | AlarmData3 | | | Byte3_TTM |
| | | Byte3_LSH | 0x8000 | Local control signal held active when in remote: True (1) if the local control knob is held in the open of close position for an extended period, when in remote. |
| | | Byte4_FS | 0x0001 | Reserved. |
| | | Byte4_TPL | 0x0002 | Reserved. |
| | | Byte4_TPH | 0x0004 | Reserved. |
| | | Byte4_MA | 0x0008 | Maintenance Alert: True (1) when maintenance action is required. |

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| Index | Data Name | Bit Name | Bit Mask | Description |
|----------------------------------|---|--|------------|---|
| 7 | AlarmData3 | Byte4_CriticalFault | 0x0010 | Critical Fault: True (1) if a product-specific critical fault has been detected. Conditions include: <ul style="list-style-type: none"> • Thermostat active • Phase lost • RHS Local selected • Position sensor fault • Position loss inhibit active • UIB comms error |
| | | Byte4_NonCriticalFault | 0x0020 | Non-critical fault: True (1) if a product specific non-critical fault has been detected. Conditions include: <ul style="list-style-type: none"> • Valve obstructed • Valve jammed • Motor stalled • Option detection error • ESD active • Close or open interlock active • Battery flat • Battery low • Partial stroke fail • Customer supply fail |
| | | Byte4_TestFailed | 0x0040 | Reserved. |
| | | Byte4_OpenIntlkActive | 0x0080 | Open Interlock Active: True (1) if an Open Interlock is active and is inhibiting the actuator. |
| | | Byte5_CloseIntlkActive | 0x0100 | Close Interlock Active: True (1) if a Close Interlock is active and is inhibiting the actuator. |
| | | Byte5_Vibration | 0x0200 | Vibration service alarm: True (1) if the configurable vibration service alarm is active. |
| | | Byte5_VVT | 0x0400 | Valve Travel Time Exceeded: True (1) if the configurable Valve Travel Time alarm is active. |
| | | Byte5_AUXOR | 0x0800 | Auxiliary Override Alarm: True (1) if the configurable auxiliary inputs mask value results in an auxiliary input overriding control. |
| | | Byte5_NamurMaintenance | 0x1000 | Namur Maintenance: True (1) if the Maintenance level Namur alarm has tripped. More details can be found in publication PUB002-040 . |
| | | Byte5_NamurOutOfSpec | 0x2000 | Namur Out of Specification: True (1) if the Out of Specification level Namur alarm has tripped. More details can be found in publication PUB002-040 . |
| | | Byte5_NamurFunctionCheck | 0x4000 | Namur Function Check: True (1) if the Function Check level Namur alarm has tripped. More details can be found in publication PUB002-040 . |
| Byte5_NamurFailure | 0x8000 | Namur Failure: True (1) if the Failure level Namur alarm has tripped. More details can be found in publication PUB002-040 . | | |
| 8 | AlarmData4 | Byte6_NetDisableActive | 0x0001 | Network Disable Active: True (1) if control via the option card is being disabled by the Network disable feature. |
| | | Byte6_CLCFaultAlarm | 0x0002 | Closed Loop Control fault: True (1) if there is a fault in the Closed Loop Control function. Reserved. |
| | | Byte6_SpareAlarm2 | 0x0004 | |
| | | Byte6_SpareAlarm3 | 0x0008 | |
| | | Byte6_SpareAlarm4 | 0x0010 | |
| | | Byte6_SpareAlarm5 | 0x0020 | |
| | | Byte6_SpareAlarm6 | 0x0040 | |
| 9 | DigitalControlIndication | Open | 0x0001 | Open: True (1) when the actuator is being commanded into the open direction. (indication ONLY). |
| | | Close | 0x0002 | Close: True (1) when the actuator is being commanded into the close direction. (indication ONLY). |
| | | Stop | 0x0004 | Stop: True (1) when the actuator is being commanded to Stop. (indication ONLY). |
| | | ESD | 0x0008 | ESD: True (1) when the actuator is being commanded to perform an ESD. (indication ONLY). |
| | | PartialStroke | 0x0010 | PartialStroke: True (1) when the actuator is being commanded to perform a Partial Stroke. (indication ONLY). |
| | | NoLongerUsed | 0x0020 | Reserved. |
| | | HandAuto | 0x0040 | HandAuto: True (1) when the actuator is being controlled via a secondary control source (e.g. in folomatic case, to allow remote operation). |
| 16 17 18 19 20 21 | NamurAllMaskedAlarmData NamurFailureAlarmData NamurOutOfSpecAlarmData NamurFuncCheckAlarmData NamurMaintenanceAlarmData NamurStatusAlarmData | Byte0_BatteryLowFlat | 0x00000001 | Battery low. |
| | | Byte0_LocalControlFault | 0x00000002 | Local control fault. |
| | | Byte0_PowerFault | 0x00000004 | Mains failure. |
| | | Byte0_Thermostat | 0x00000008 | Thermostat. |
| | | Byte0_ServiceContactor | 0x00000010 | Service contactor. |
| | | Byte0_ServiceDue | 0x00000020 | Service due. |
| | | Byte0_ServiceHiHiTrip | 0x00000040 | Hi Hi torque alarm. |
| | | Byte0_ServiceHiTrip | 0x00000080 | Hi torque alarm. |
| | | Byte1_ServiceMotorStarts | 0x00000100 | Motor starts. |
| | | Byte1_ServiceOutputTurns | 0x00000200 | Total turns. |
| | | Byte1_MonitorRelay | 0x00000400 | Monitor relay. |
| | | Byte1_ControlFail | 0x00000800 | Control failure. |
| | | Byte1_ActuatorFail | 0x00001000 | Actuator failure. |
| | | Byte1_CommsFail | 0x00002000 | Comms loss. |
| | | Byte1_HardwareOptionFail | 0x00004000 | Option not detected. |
| | | Byte1_PartialStrokeError | 0x00008000 | Partial stroke failure. |
| | | Byte2_ValveError | 0x00010000 | Valve obstructed. |
| | | Byte2_ActuatorStalled | 0x00020000 | Motor stalled. |
| | | Byte2_PosLimpHome | 0x00040000 | Position limp home. |
| | | Byte2_EOT | 0x00080000 | End travel move. |
| | | Byte2_NWRKFault | 0x00100000 | Network card fault. |
| Byte2_24VDCustSupplyFail | 0x00200000 | Customer power supply failure. | | |
| Byte2_VVT | 0x00400000 | Valve travel time. | | |
| Byte2_WrongDirectionFail | 0x00800000 | Wrong direction detected. | | |

6 Parameters

| Index | Data Name | Bit Name | Bit Mask | Description |
|------------------------|------------------|--|------------|--|
| 22 | DigitalControl | Open | 0x0001 | Open: Set this bit true (1) to command the actuator into the open direction. |
| | | Close | 0x0002 | Close: Set this bit true (1) to command the actuator into the close direction. |
| | | Stop | 0x0004 | Stop: Set this bit true (1) to command the actuator to Stop. |
| | | ESD | 0x0008 | ESD: Set this bit true (1) to command the actuator to perform an ESD. |
| | | PartialStroke | 0x0010 | PartialStroke: Set this bit true (1) to command the actuator to perform a Partial Stroke. |
| | | NoLongerUsed | 0x0020 | Reserved. |
| | | HandAuto | 0x0040 | HandAuto: Set this bit true (1) to allow the actuator to be controlled by a secondary control source (e.g. in folomatic case, to allow remote operation). |
| | | PositionEnable | 0x8000 | PositionEnable: Set this bit true (1) to enable the actuator to be commanded into an intermediate position using Position control Parameter. |
| 24 | NetworkStatus1 | Byte0_AbccCommsFault | 0x0001 | Byte0_AbccCommsFault: True (1) if the option card is failing to communicate with its internal network module. |
| | | Byte0_EEPROMFault | 0x0002 | Byte0_EEPROMFault: True (1) when a fault is detected in the EEPROM of the option card. |
| | | Byte0_AbccCfgGetErr | 0x0004 | Byte0_AbccCfgGetErr: True (1) when a network related configuration shown on the user interface board or Insight2 is incorrect, for example IP address, subnet mask, hostname, etc. |
| | | Byte0_FtpEnabled | 0x0008 | Byte0_FtpEnabled: Set if FTP is enabled on the option card. |
| | | Byte0_AbccCfgSetErr | 0x0010 | Byte0_AbccCfgSetErr: True (1) if a network config item set via the user interface board or Insight2 is not successfully set. |
| | | Byte0_EthLink10MbpsPort1 | 0x0020 | Byte0_EthLink10MbpsPort1: True (1) when there is a 10 Mbps Ethernet link on port 1. |
| | | Byte0_ControlContention | 0x0040 | Byte0_ControlContention: True (1) if the option card detects control contention in the parameter DigitalControl (index 22). If control contention is detected, the option card will not execute the received digital control command. |
| | | Byte0_CANFault | 0x0080 | Byte0_CANFault: True (1) if there is a communication fault between the actuator and option card. |
| | | Byte1_CommsPresent | 0x0100 | Byte1_CommsPresent: True (1) if one or more PROFINET IO connections are established. |
| | | Byte1_WriteError | 0x0200 | Byte1_WriteError: True (1) if the last write command to the DesiredPosition parameter is rejected because the value is out of range. |
| | | Byte1_HWConfigLinkActive | 0x0400 | Byte1_HWConfigLinkActive: True (1) if the default HW configuration link (CF1) on the PCB assembly is inserted when the option card is booted. |
| | | Byte1_DatalogDownloadFail | 0x0800 | Byte1_DatalogDownloadFail: True (1) if the last data log download failed. |
| | | Byte1_EthLink100MbpsPort1 | 0x1000 | Byte1_EthLink100MbpsPort1: True (1) when there is a 100 Mbps Ethernet link on port 1. |
| Byte1_BusFault | 0x2000 | Byte1_BusFault: True (1) if any of the following is true: <ul style="list-style-type: none"> IO device name is not set IO device IP address is not set Expected ID differs from Real ID IO Controller is in STOP state or IO data is BAD No connection with IO controller FATAL event if system fault is also set | | |
| Byte1_SystemFault | 0x4000 | Byte1_SystemFault: True (1) if any of the following is true: <ul style="list-style-type: none"> Diagnostic event(s) is present IO device is in EXCEPTION state FATAL event if bus fault is also set | | |
| Byte1_AbccCfgOutOfSync | 0x8000 | Byte1_AbccCfgOutOfSync: True (1) when a network related configuration shown on the user interface board or Insight2 is potentially incorrect, for example IP address, subnet mask, hostname, etc. This occurs when option card is booting, or a new configuration value is being set. | | |
| 25 | NetworkStatus2 | Byte2_EthLink10MbpsPort2 | 0x0001 | Byte2_EthLink10MbpsPort2: True (1) when there is a 10 Mbps Ethernet link on port 2. |
| | | Byte2_EthLink100MbpsPort2 | 0x0002 | Byte2_EthLink100MbpsPort2: True (1) when there is a 100 Mbps Ethernet link on port 2. |
| | | Byte2_Reserved2 | 0x0004 | Reserved. |
| | | Byte2_Reserved3 | 0x0008 | |
| | | Byte2_Reserved4 | 0x0010 | |
| | | Byte2_Reserved5 | 0x0020 | |
| | | Byte2_Reserved6 | 0x0040 | |
| | | Byte2_Reserved7 | 0x0080 | |
| Byte3_Reserved | 0xFF00 | | | |
| 26 | NetworkStatus3 | Byte4_Reserved | 0x00FF | Reserved. |
| | | Byte5_Reserved | 0xFF00 | |
| 27 | NetworkStatus4 | Byte6_Reserved | 0x00FF | |
| | | Byte7_Reserved | 0xFF00 | |
| 28 | MultiportStatus1 | Byte0_Reserved | 0x00FF | |
| | | Byte1_Reserved | 0xFF00 | |
| 29 | MultiportStatus2 | Byte2_Reserved | 0x00FF | |
| | | Byte3_Reserved | 0xFF00 | |
| 30 | MultiportStatus3 | Byte4_Reserved | 0x00FF | |
| | | Byte5_Reserved | 0xFF00 | |
| 31 | MultiportStatus4 | Byte6_Reserved | 0x00FF | |
| | | Byte7_Reserved | 0xFF00 | |
| 33 | SetResetRelays | Byte0_Set_Relays | 0x000000FF | SetResetRelays: Bit map to show which of Relays 1 to 16 are set or reset. |
| | | Byte1_Set_Relays | 0x0000FF00 | |
| | | Byte2_Reset_Relays | 0x00FF0000 | |
| | | Byte3_Reset_Relays | 0xFF000000 | |

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| Index | Data Name | Bit Name | Bit Mask | Description |
|-------|----------------------------|--------------------------|------------|--|
| | | Byte0_BatteryLowFlat | 0x00000001 | See description for indices 16 to 21 in Bitfields Table. |
| | | Byte0_LocalControlFault | 0x00000002 | |
| | | Byte0_PowerFault | 0x00000004 | |
| | | Byte0_Thermostat | 0x00000008 | |
| | | Byte0_ServiceContactor | 0x00000010 | |
| | | Byte0_ServiceDue | 0x00000020 | |
| | | Byte0_ServiceHiHiTrip | 0x00000040 | |
| | | Byte0_ServiceHiTrip | 0x00000080 | |
| | | Byte2_ServiceMotorStarts | 0x00000100 | |
| | | Byte1_ServiceOutputTurns | 0x00000200 | |
| 34 | NAMURFailureDataMask | Byte1_MonitorRelay | 0x00000400 | |
| 35 | NAMUROutOfSpecDataMask | Byte1_ControlFail | 0x00000800 | |
| 36 | NAMURFunctionCheckDataMask | Byte1_ActuatorFail | 0x00001000 | |
| 37 | NAMURMaintenanceDataMask | Byte1_CommsFail | 0x00002000 | |
| | | Byte1_HardwareOptionFail | 0x00004000 | |
| | | Byte1_PartialStrokeError | 0x00008000 | |
| | | Byte1_ValveError | 0x00010000 | |
| | | Byte2_ActuatorStalled | 0x00020000 | |
| | | Byte2_PosLimpHome | 0x00040000 | |
| | | Byte2_EOT | 0x00080000 | |
| | | Byte2_NWRKFault | 0x00100000 | |
| | | Byte2_24VDCustSupplyFail | 0x00200000 | |
| | | Byte2_VVT | 0x00400000 | |
| | | Byte2_WrongDirectionFail | 0x00800000 | |

6 Parameters

6.3 Enumerations

| Index | Data Name | Enum Name | Enum Value | Description |
|-------|---------------|-------------------------|------------|--|
| | | None | 0 | |
| | | ClosedLimit | 1 | Closed limit position (exact). |
| | | OpenLimit | 2 | Open limit position (exact). |
| | | MotorRunning | 4 | Motor running. |
| | | Closing | 5 | Travelling in the close direction – motor or handwheel. |
| | | Opening | 6 | Travelling in the open direction – motor or handwheel. |
| | | Moving | 7 | Travelling – motor or handwheel. |
| | | MidTravelStall | 8 | Not a limit, motor energised – no output movement detected. |
| | | Stall | 10 | Motor has stalled. |
| | | LocalStop | 14 | Red Control knob set to STOP. |
| | | LocalControlEn | 15 | Red Control knob set to Local. |
| | | RemoteControlEn | 16 | Red Control knob set to Remote. |
| | | ControlAlarm | 17 | ESD signal and/or interlock active. |
| | | ESDActive | 18 | ESD signal applied. |
| | | OpenInterlock | 19 | Open Interlock active. |
| | | ClosedInterlock | 20 | Open Interlock active. |
| | | Interlock | 21 | Open and/or closed interlock active. |
| | | ManOverride | 24 | Handwheel operation. |
| | | MotThermostat | 30 | Motor Thermostat has tripped. |
| | | PStrokePass | 31 | Partial stroke completed. |
| | | PStrokeFail | 32 | Partial stroke not completed. |
| | | Monitor | 33 | Monitor relay de-energised. |
| | | MidTravel | 34 | Not at Closed or Open limits. |
| | | BluetoothConnected | 35 | Bluetooth is connected. |
| | | EndPosition | 36 | Either at Closed or Open limit positions. |
| | | IntermediatePosition | 37 | Not at Closed or Open limits. |
| 41 | FunctionOfS1 | TorqueTripClosing | 38 | Torque trip closing – any position. |
| 42 | FunctionOfS2 | TorqueTripOpening | 39 | Torque trip opening – any position. |
| 43 | FunctionOfS3 | TorqueTrip | 40 | Torque trip closing or opening – any position. |
| 44 | FunctionOfS4 | TorqueTripMidTravel | 41 | Torque trip mid-travel, closing or opening. |
| 45 | FunctionOfS5 | PhaseLoss | 42 | 3-phase only – monitored phase 3 lost. |
| 46 | FunctionOfS6 | Cust24VFail | 43 | Internal 24VDC supply failed (Terminals 4 & 5). |
| 47 | FunctionOfS7 | ActuatorAlarm | 44 | Internal fault detected. |
| 48 | FunctionOfS8 | ValveAlarm | 45 | On torque trip mid-travel or motor stall condition. |
| 49 | FunctionOfS9 | BatteryLow | 46 | Battery low. |
| 50 | FunctionOfS10 | BatteryFlat | 47 | Battery discharged or missing. |
| 51 | FunctionOfS11 | Blinker | 48 | Travelling (make/break at 1 second intervals). |
| 52 | FunctionOfS12 | DigitalOutput | 49 | Network option controlled. |
| | | PStrokeActive | 50 | Partial stroke underway. |
| | | Maintenance | 51 | Scheduled maintenance due. |
| | | HiTorqueAlarm | 52 | Set Hi torque value reached. |
| | | HiHiTorqueAlarm | 53 | Set Hi-Hi torque value reached. |
| | | OddParity | 54 | Set when count of relays set is and odd value. |
| | | Source1NetworkCommsLoss | 55 | Communication failure with option 1 card. |
| | | Source2NetworkCommsLoss | 56 | Communication failure with option 2 card. |
| | | NamurMaintenance | 57 | A NAMUR maintenance condition is active. |
| | | NamurOutOfSpec | 58 | A NAMUR out of specification condition is active. |
| | | NamurFunctionCheck | 59 | A NAMUR function check condition is active. |
| | | NamurFailure | 60 | A NAMUR failure condition is active. |
| | | OverModulation | 66 | Starts per hour has been exceeded. |
| | | MotorInhibit | 67 | Motor is inhibited. |
| | | LossOfHMI | 74 | HMI will not be lit up. |
| | | MaintainFeedback | 75 | Open/Close signals are maintained. |
| | | GeneralAlarm | 80 | Anything which constitutes an alarm from the 'function' list triggers this alarm. |
| | | BatBackupAvailable | 81 | For battery backup only: Checks availability of battery, checks if battery is charged. |
| | | BatBackupControlling | 82 | For battery backup only: battery is in control. |
| | | BatBackupCharging | 93 | For battery backup only: battery is charging. |
| | | ClosedLoopControlFail | 94 | Closed Loop Control failure - due to loss of Setpoint or Feedback signal. |
| | | TorqueOrLimitClose | 95 | The close position is at its torque limit. |
| | | TorqueOrLimitOpen | 96 | The open position is at its torque limit. |
| | | LocalClose | 97 | A local close control has been activated. |
| | | LocalOpen | 98 | A local open control has been activated. |

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