Ethernet IP Interface User Guide



Caution

This option module is specifically designed to be used with the Synergy range of soft-start products and is intended for professional incorporation into complete equipment or systems. If installed incorrectly it may present a safety hazard. Before commencing installation and commissioning, the user should ensure they are fully familiar with the Synergy unit, and in particular have read the important safety information and warnings contained in the Synergy User Guide.

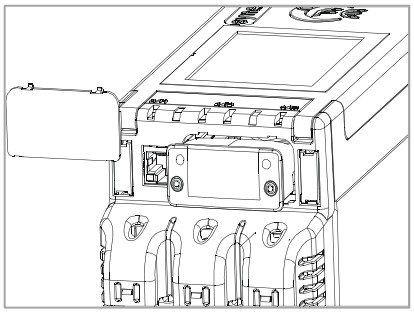
Overview

The Ethernet IP Interface is intended to be installed in the Synergy option slot, and allows the Synergy to be connected to an Ethernet IP network. The interface offers the following functionality:-

- CIP Parameter Object Support
- 4 Input Words from the network master to Synergy
- 4 Output Words from Synergy to the network master

Installation

- Ensure all power is removed from the Synergy unit prior to installing the option module
- Remove the blanking plate from the option module slot
- Carefully slide the option module into the slot, ensuring that the location tabs are correctly aligned. DO NOT USE EXCESSIVE FORCE
- Tighten the two screws on the option module to secure



Synergy configuration

- Synergy will automatically configure when the option module is installed

EDS File

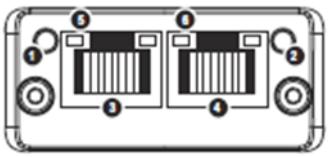
- An EDS file for the interface is available from www.fairford.com

IP Address Configuration

- Use the IP address configuration tool. Available from www.fairford.com

Front panel

	Item
1	Network Status LED
2	Module Status LED
3	Ethernet Interface, Port 1
4	Ethernet Interface, Port 2
5	Link/Activity Port 1
6	Link/Activity Port 2



Network status LED

LED State	Description
Off	No power or no IP address
Green	Online, connections active
Green, flashing	Online, no connections active
Red	Duplicate IP, fatal error
Red, flashing	Connection timeout

Module status LED

LED State	Description
Off	No power
Green	Controlled, Run state
Green, flashing	Not configured or idle state
Red	Major fault
Red, flashing	Recoverable error(s)

Ethernet interface LED

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

Ethernet I/P Control

The drive profile used by the interface is currently that provided by the Anybus CC Module and is dictated by the EDS file provided by HMS Industrial Networks.

The EDS describes parameters that can be accessed explicitly in an Acyclic manner. Not all of these parameters are implemented in Synergy. See Table 1

PNU	Description	Read Only	Implemented
1	Run Forward	N	Y
2	Run Reverse	N	N
3	Fault Rest	N	Y
4	Net Control	N	Y
5	Net Reference	N	N
6	Speed Reference	N	N
7	Torque Reference	N	N
8	Faulted	Y	Y
9	Warning	Y	Y
10	Running Forward	Y	Y
11	Running Reverse	Y	N
12	Ready	Y	Y
13	Ctrl From Net	Y	Y
14	Ref From Net	Y	N
15	At Reference	Y	N
16	Drive State	Y	Y

Table 1: Supported parameters

CIP paths from these parameters are described in the EDS.

The EDS also describes the 25 Implicit Cyclic connections, each of which will set and/or get a combination of the above parameters. The following examples are for connection 6 (Extended Control)

O=>T Packet (Control)

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0	-	-	PNU 4	-	-	PNU 3	-	PNU 1
Byte 1	-	-	-	-	-	-	-	-

T=>O Packet (Status)

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0	-	-	PNU 13	PNU 12	-	PNU 10	PNU 9	PNU 8
Byte 1	PNU 16							

CIP Packet functionality – Extended Control

Note: When a cyclic connection is established and Bit4 (Net Control) is set, the network has control of the Synergy unit and any other control, from the unit front panel, switches or Modbus interface, will be overridden.