

Interface Option Cards

*Interface for the 882D Belt Scale Integrator
and the 882IS/882IS Plus Indicators*

Installation and Programming Manual



EtherNet/IP™



PROFINET



PROFIBUS DP



Modbus® TCP



DeviceNet®



EtherCAT®

COMPATABILITY NOTICE:

*If card no longer communicates correct data,
change SWAP parameter in the indicator.*

See [Section 6.0 on page 24](#) for details.

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1.0 Introduction

This manual provides information on the installation and use of the following interface option cards.

- EtherNet/IP™
- PROFINET
- PROFIBUS DP
- Modbus® TCP
- DeviceNet®
- EtherCAT®

The EtherNet/IP, PROFINET, PROFIBUS DP and Modbus TCP interface option cards can be used to read and write data to the 882D and 882IS using a PLC or another primary controller.

The DeviceNet interface option card allows the 882D and 882IS to communicate with a primary controller on a DeviceNet network, while the EtherCAT interface option card allows the 882D and 882IS to communicate with an EtherCAT network.



Some procedures described in this manual require work inside the enclosure. These procedures are to be performed by qualified service personnel only.

All of the interface option cards are installed inside the enclosure and installation in NEMA Type 4X stainless steel enclosures permits use in washdown environments.

See the 882D or 882IS technical manual for additional installation information and detailed descriptions of the available functions.



Manuals and additional resources are available on the Rice Lake Weighing Systems website at www.ricelake.com

Warranty information can be found on the website at www.ricelake.com/warranties



882D and 882IS configuration and calibration cannot be performed through an interface option card.

1.1 Overview

The primary controller communicates by sending commands through the PROFINET, PROFIBUS DP and Modbus TCP interface option cards to an 882D or 882IS. The 882D or 882IS responds to the primary controller with data and status depending on the command sent. These actions are referred to as a polled response.

The EtherNet/IP and DeviceNet interface option card returns weight and status information from an 882D or 882IS to the network and provides limited control of the 882D or 882IS functions to the programmer.



Configuration must utilize the file specific to the interface protocol being used. Configuration files can be found in the Configuration Files drop down on the product page at www.ricelake.com. Specific files and file locations are listed in [Section 4.0 on page 15](#).

1.1.1 EtherNet/IP

EtherNet/IP (Ethernet Industrial Protocol) is an open industrial networking standard allowing control applications to make use of Ethernet communications components and physical media.

EtherNet/IP is based on the IEEE 802.3 Ethernet standard, the TCP/IP protocol suite and CIP™ (Common Industrial Protocol), the real-time I/O and information protocol used by both DeviceNet™ and ControlNet™ networks.

1.1.2 DeviceNet

The installation functions as a communications adapter device on a DeviceNet network. It acts as a group-two-only server on the network. Supports one polled I/O connection.

The primary controller sends commands to the 882D or 882IS through the DeviceNet interface by writing the commands in the output command format. The installation returns the weight and status data in the input command format. These actions are referred to as polled I/O.

1.1.3 EtherCAT

The EtherCAT communication module provides instant EtherCAT conformance tested connectivity via the Anybus-CompactCom host interface. Any device supporting this standard can take advantage of the features provided by the module, allowing seamless network integration regardless of network type.

IMPORTANT

The EtherCAT card should not be used to communicate between buildings. The Ethernet port is not suitable for connection to circuits used outside the building and is subject to lightning or power faults.

2.0 Installation

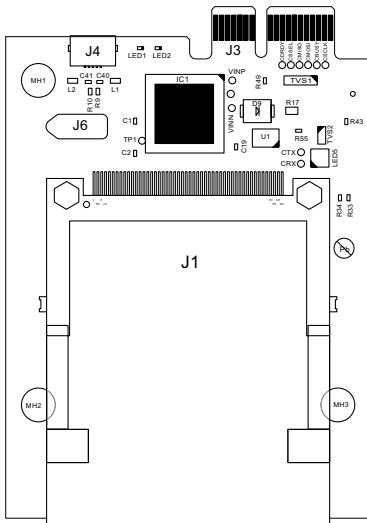
Interface option card specific functions are provided by the option card module.

IMPORTANT

See the corresponding manual for additional instructions.

- 882D Technical Manual – PN 184260
- 882IS Technical Manual – PN 183532
- 882IS I/O Module Installation Manual – PN 194139

2.1 Carrier Board Diagram



Carrier Board
PN 164756

Kit Numbers

- PN 190530 – EtherNet/IP
- PN 190531 – DeviceNet
- PN 190532 – PROFINET
- PN 190533 – Modbus TCP
- PN 190534 – PROFIBUS DP
- PN 190535 – EtherCAT

Figure 2-1. Interface Option Card Board

Environmental Specifications

Temperature: 14° to 104° F (-10° to +40° C)

Conformance



The EtherNet/IP and EtherCAT interfaces have been found in accordance with EMC directive 89/336/EEC for European standards EN 50081-2 and EN 61000-6-2.

2.2 Installing the Interface Option Card

All of the interface option cards connect the same way. The option card carrier board provides power and access from the 882D or 882IS bus to the interface option card module.

882D – interface option cards only work in option card slot 1 (J8 connector) of the 882D CPU board (other available options work in either slot 1 or slot 2).

882IS – interface option cards work in the option card slot (J8 connector) of the 882IS I/O Module board (I/O Module board only has one option card slot).



Always disconnect power before removing the 882D enclosure and 882IS I/O Module backplates.



A grounding wrist strap must be worn to protect components from electrostatic discharge (ESD) when working inside the 882D enclosure and 882IS I/O Module.

Installation Procedure

1. Disconnect power from the unit.
2. Remove the backplate from the 882D enclosure or the 882IS I/O Module.
3. Connect interface option card to J8 connector on the 882D CPU board or the 882IS I/O Module board.

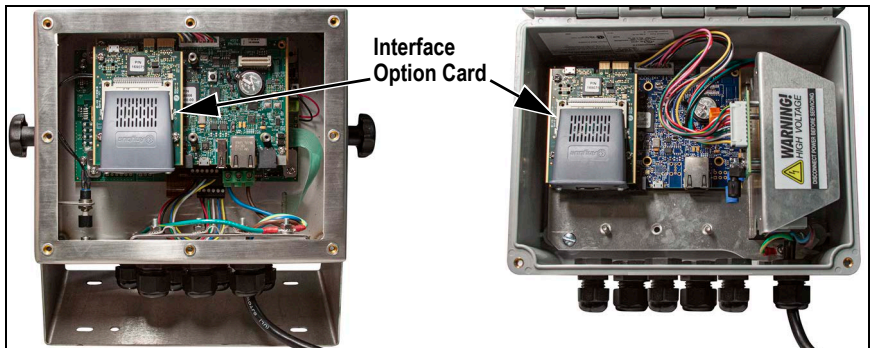


Figure 2-2. Interface Option Card Board Placement

4. Use three provided screws from the option kit to secure the interface option card board.
5. Connect and properly run cables and then reinstall the backplate.
6. Reconnect power to the unit.



Note

The 882D and 882IS automatically recognizes all installed option cards when the unit is powered on. No hardware-specific configuration is required to identify the newly-installed card to the system.

3.0 Status LEDs and Connectors

**WARNING**

Always disconnect power before removing the 882D and 882IS enclosure backplates.

**CAUTION**

A grounding wrist strap must be worn to protect components from electrostatic discharge (ESD) when working inside the 882D and 882IS enclosures.

3.1 EtherNet/IP

**Note**

To configure an IP Address, refer to [Section 7.1 on page 28](#).

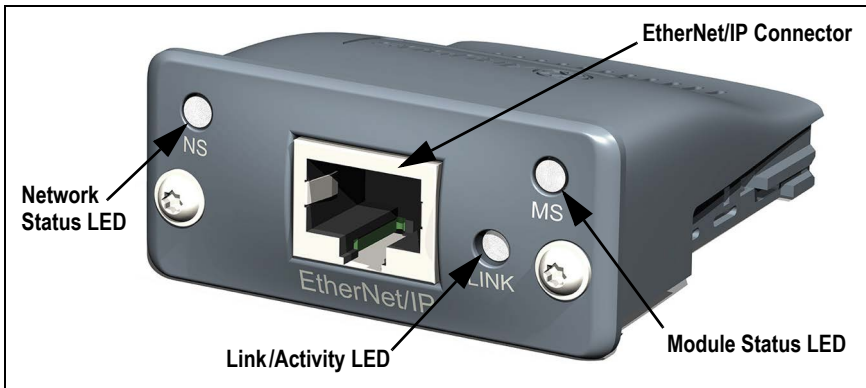


Figure 3-1. EtherNet/IP Module

3.1.1 Network Status LED

LED State	Description
Off	No power or no IP address
Green	On-line, one or more connections established (CIP Class 1 or 3)
Green, flashing	On-line, no connections established
Red	Duplicate IP address, <i>FATAL</i> error
Red, flashing	One or more connections timed out (CIP Class 1 or 3)

Table 3-1. Network Status LED Descriptions

**Note**

A test sequence is performed on this LED during startup.

3.1.2 Module Status LED

LED State	Description
Off	No power
Green	Controlled by a scanner in run state
Green, flashing	Not configured, or scanner in idle state
Red	Major fault (EXCEPTION state, FATAL error etc.)
Red, flashing	Recoverable fault(s)

Table 3-2. Module Status LED Descriptions



Note A test sequence is performed on this LED during startup.

3.1.3 Link/Activity LED

LED State	Description
Off	No link, no activity
Green	Link established
Green, flickering	Activity

Table 3-3. Link/Activity LED Descriptions

3.1.4 EtherNet/IP Connector

The Ethernet interface supports 10/100 Mbps, full or half duplex operation.

3.2 PROFINET

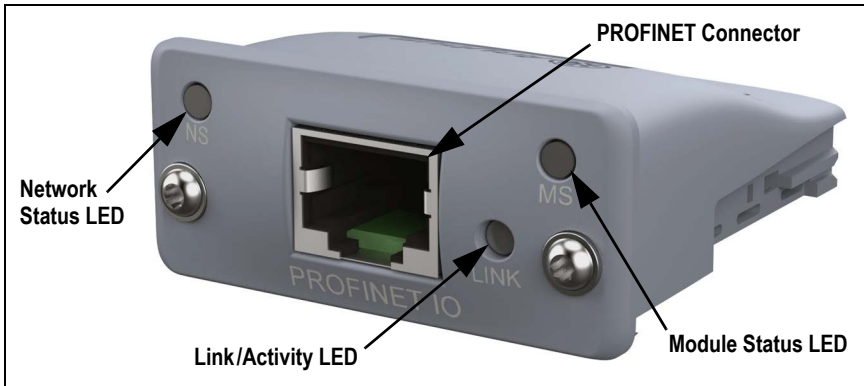


Figure 3-2. PROFINET Module

3.2.1 Network Status LED

LED State	Description
Off	No power or connection with IP controller
Green, flashing	Connection with IP controller established I/O controller in STOP state

Table 3-4. Network Status LED Descriptions



Note A test sequence is performed on this LED during startup.

3.2.2 Module Status LED

LED State	Description
Off	Not initialized – no power or module in SETUP or NW_INIT state
Green	Normal operation – module has shifted from the NW_INIT state
Green, 1 flash	Diagnostic event(s) present
Green, 2 flashes	Blink used by engineering tools to identify the node on the network
Red	Exception error – module in EXCEPTION state
Red, 1 flash	Configuration error – expected identification differs from real identification
Red, 2 flashes	IP address error – IP address not set
Red, 3 flashes	Station name error – station name not set
Red, 4 flashes	Internal error – module has encountered a major internal error

Table 3-5. Module Status LED Descriptions



Note A test sequence is performed on this LED during startup.

3.2.3 Link/Activity LED

LED State	Description
Off	No link, no activity
Green	Link established
Green, flickering	Activity

Table 3-6. Link/Activity LED Descriptions

3.2.4 PROFINET Connector

The PROFINET interface supports 10/100 Mbps, full or half duplex operation. Update rate is dependent on the configured baud rate and the number of network nodes.

3.3 PROFIBUS DP

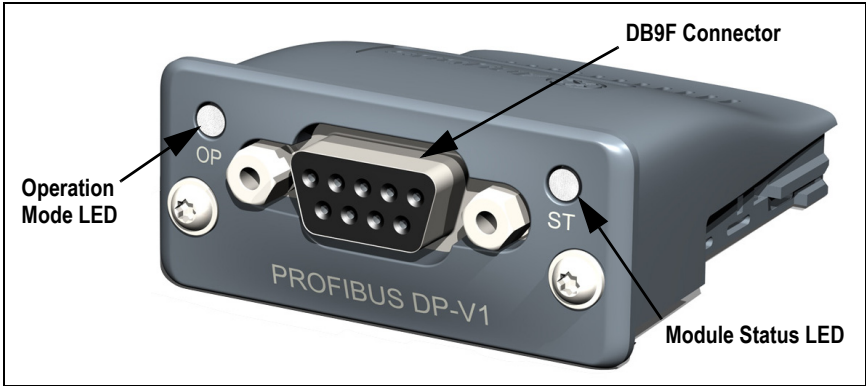


Figure 3-3. PROFIBUS Module

3.3.1 Operation Mode LED

Status	Description
Off	No powered or not online
Steady Green	Data exchange
Flashing Green	Clear
Flashing Red (1-flash)	Parametrization error
Flashing Red (2-flash)	PROFIBUS configuration error

Table 3-7. Operation Mode LED Descriptions

3.3.2 Module Status LED

Status	Description	Comments
Off	Not initialized	Anybus state = SETUP or NW_INIT
Steady Green	Initialized	Anybus module has left the NW_INIT state
Flashing Green	Initialized, diagnostic event(s) present	Extended diagnostic bit is set
Steady Red	Exception error	Anybus state = EXCEPTION

Table 3-8. Module Status LED Descriptions

3.3.3 DB9F Connector

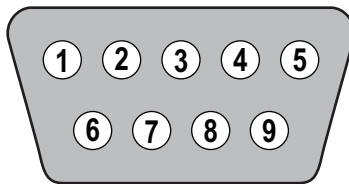


Figure 3-4. DB9F Pinout Orientation

Pin	Signal	Description
1	-	
2	-	
3	B Line	Positive RxD/TxD, RS485 level
4	RTS	Request to send
5	GND Bus	Ground (isolated)
6	+5 V Bus Output	+5 V termination power (isolated, short-circuit protected)
7	-	
8	A Line	Negative RxD/TxD, RS485 level
9	-	
Housing	Cable Shield	Internally connected to the Anybus protective ground via cable shield filters according to the PROFIBUS standard.

Table 3-9. PROFIBUS Connector Pinout Descriptions

3.4 Modbus TCP

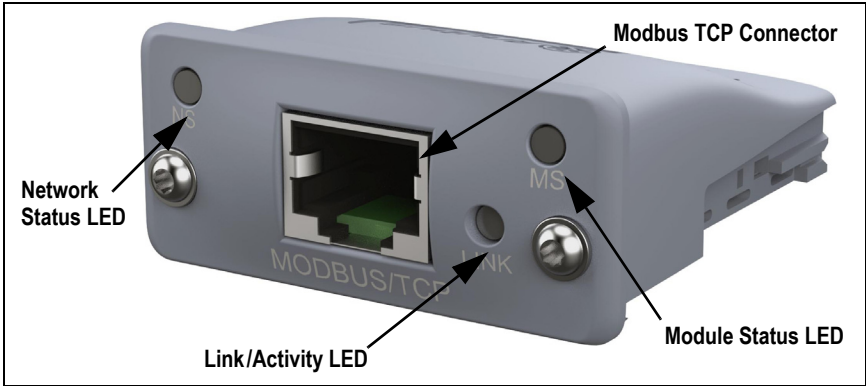


Figure 3-5. Modbus TCP Module

3.4.1 Network Status LED

LED State	Description
Off	No power or no IP address
Green	Module is in process active or idle state
Green, flashing	Waiting for connections
Red	Duplicate IP address, <i>FATAL</i> event
Red, flashing	Process active timeout

Table 3-10. Network Status LED Descriptions



Note A test sequence is performed on this LED during startup.

3.4.2 Module Status LED

LED State	Description
Off	No power
Green	Normal operation
Red	Major fault; module is in EXCEPTION state (or <i>FATAL</i> event)
Red, flashing	Minor fault in diagnostic object; IP conflict

Table 3-11. Module Status LED Descriptions



Note A test sequence is performed on this LED during startup.

3.4.3 Link/Activity LED

LED State	Description
Off	No link, no activity
Green	Link established
Green, flickering	Activity

Table 3-12. Link/Activity LED Descriptions

3.4.4 Modbus TCP Connector

The Modbus interface supports 10/100 Mbps, full or half duplex operation.

The Modbus TCP connection uses holding registers to transfer data between the 882D or 882IS and the PLC or primary device. See [Section 5.0 on page 16](#) for 882D output and input data structure and [Section 6.0 on page 24](#) for 882IS output and input data structure.

3.5 DeviceNet

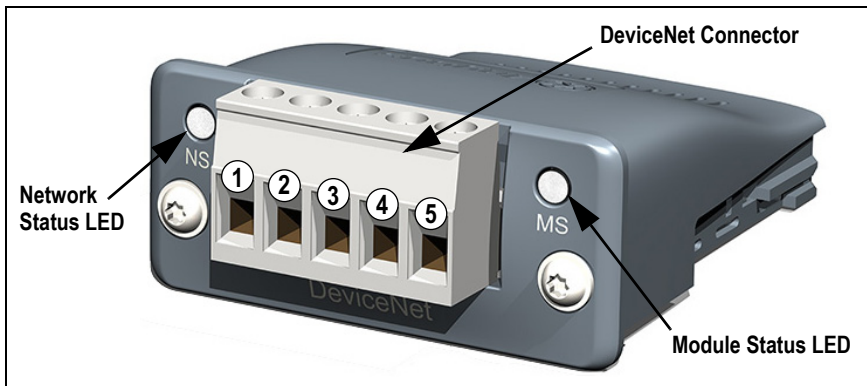


Figure 3-6. DeviceNet Module

3.5.1 Network Status LED

LED Status	Description
Off	Not powered or not online
Steady Green	Online, connected
Flashing Green	Online, not connected
Steady Red	Critical link failure
Flashing Red	Connection time-out

Table 3-13. Network Status LED Descriptions

3.5.2 Module Status LED

LED Status	Description
Off	No power to module
Steady Green	Module operational
Flashing Green	Missing or incomplete configuration, device needs commissioning
Steady Red	Unrecoverable fault
Flashing Red	Recoverable fault

Table 3-14. Module Status LED Descriptions

3.5.3 DeviceNet Connector

See [Figure 3-6 on page 11](#) for connector pinout orientation.

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

Table 3-15. DeviceNet Connector Pinout

3.6 EtherCAT

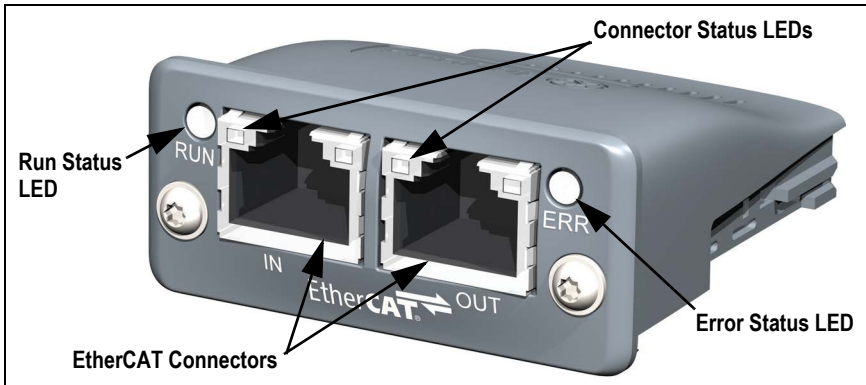


Figure 3-7. EtherCAT Module

3.6.1 Run Status LED

Status	Description
Off	CoE device in <i>INIT</i> state or has no power
Steady green	CoE device in operational state
Flashing green	CoE device in pre-operational state
Green, single flash	CoE device in safe-operational state
Red	Fatal event, forcing the bus interface to a physically passive state; contact technical support.

Table 3-16. Run Status LED Descriptions

3.6.2 Error Status LED

Status	Description
Off	No error (or no power)
Red, blinking	Invalid configuration, state change received from primary is not possible due to invalid register or object settings
Red, double flash	Application (sync manager) watchdog timeout
Red	Fatal event, forcing the bus interface to a physically passive state; contact technical support.

Table 3-17. Error Status LED Descriptions

3.6.3 Port Status LEDs

Status	Description
Off	Link not sensed (or no power)
Green	Link sensed, no activity
Green, flickering	Link sensed, activity detected

Table 3-18. Port Status LED Descriptions

3.6.4 EtherCAT Connectors

The EtherCAT interface supports 10/100 Mbps, full or half duplex operation. Port 1 is for incoming communications and Port 2 is for outgoing communications.

4.0 Configuration

Configuration must utilize the file specific to the interface protocol being used.

4.1 882D Configuration Files

882D configuration files can be found in the Fieldbus Configuration Files drop down on the 882D Belt Scale Integrator product page at www.ricelake.com/882D.

Protocol	File Name
DeviceNet	882D DeviceNet Configuration Files
Profibus	882D Profibus Configuration Files
Profinet	882D Profinet Configuration Files
Ethernet/IP	882D Ethernet/IP Configuration Files

Table 4-1. 882D Configuration Files

4.2 882IS Configuration Files

882IS configuration files can be found in the Fieldbus Configuration Files drop down on the 882IS Intrinsicly Safe Digital Weight Indicator product page at www.ricelake.com/882IS.

Protocol	File Name
DeviceNet	882IS DeviceNet Configuration Files
Profibus	882IS Profibus Configuration Files
Profinet	882IS Profinet Configuration Files
EtherNet/IP	882IS Ethernet/IP Configuration Files

Table 4-2. 882IS Configuration Files

5.0 882D Belt Scale Data Structure

The data structure describes the output and input format that is used by the PLC or primary device to communicate with the 882D.

Decimal Point Handling

Integer commands return no decimal point information to the primary. All values are 32-bit with an assumed decimal place. Floating point commands support decimal point information with no special handling.

Example: A value of 750.1 displayed on unit is returned to the primary as 7501.

5.1 882D Output

The output data is what is sent to the PLC or other primary device. All of the data is sent continuously where other data is dependent on what input data is sent from the PLC. All data words 1 - 12 are 32 bits

Modbus Address	Word	Description
40257	0	Error status; Section 5.1.3 on page 19
40259	1	882D status; Section 5.1.1 on page 17
40261	2	Load
40263	3	Rate
40265	4	Speed
40267	5	Totalizer 1
40269	6	Totalizer 2
40271	7	Master totalizer
40273	8	Digital I/O slot 0 status; Section 5.1.2 on page 18 NOTE: This output is unavailable while using a PROFINET option card.
40275	9	Digital I/O slot 1 status; Section 5.1.2 on page 18 NOTE: This output is unavailable while using a PROFINET option card.
40277	10	Digital I/O slot 2 status; Section 5.1.2 on page 18 NOTE: This output is unavailable while using a PROFINET option card.
40279	11	Get setpoint value from the 882D; input word 8; Section 5.2 on page 20 NOTE: This output is unavailable while using a PROFINET option card.
40281	12	Get the setpoint number that is returned in 882D output #12 NOTE: This output is unavailable while using a PROFINET option card.

Table 5-1. 882D Output

5.1.1 882D Status Bits

Word Bit	882D Status Data	
	Value = 0	Value = 1
00	In weigh mode	In setup mode
01	Belt not running	Belt running
02	Not in zero band	In zero band
03	Zero not in progress	Zero in progress
04	Not in warmup	In warmup
05	Heartbeat low	Heartbeat high
06	Batch not paused	Batch paused
07	Batch not running	Batch running
08	Batch not stopped	Batch stopped
09	Load positive value	Load negative value
10	Speed positive value	Speed negative value
11	Rate positive value	Rate negative value
12	Setpoint read positive value	Setpoint read negative value
13	Setpoint write positive value	Setpoint write negative value
14	Unused	Unused
15	Unused	Unused
16	Unused	Unused
17	Unused	Unused
18	Unused	Unused
19	Unused	Unused
20	Unused	Unused
21	Unused	Unused
22	Unused	Unused
23	Unused	Unused
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused
32	Unused	Unused

Table 5-2. 882D Status Bits

5.1.2 882D Digital I/O Status Bits

Word Bit	Digital I/O Status Data	
	Value = 0	Value = 1
00	Digital I/O 1 Off	Digital I/O 1 On
01	Digital I/O 2 Off	Digital I/O 2 On
02	Digital I/O 3 Off	Digital I/O 3 On
03	Digital I/O 4 Off	Digital I/O 4 On
04	Digital I/O 5 Off	Digital I/O 5 On
05	Digital I/O 6 Off	Digital I/O 6 On
06	Digital I/O 7 Off	Digital I/O 7 On
07	Digital I/O 8 Off	Digital I/O 8 On
08	Digital I/O 9 Off	Digital I/O 9 On
09	Digital I/O 10 Off	Digital I/O 10 On
10	Digital I/O 11 Off	Digital I/O 11 On
11	Digital I/O 12 Off	Digital I/O 12 On
12	Digital I/O 13 Off	Digital I/O 13 On
13	Digital I/O 14 Off	Digital I/O 14 On
14	Digital I/O 15 Off	Digital I/O 15 On
15	Digital I/O 16 Off	Digital I/O 16 On
16	Digital I/O 17 Off	Digital I/O 17 On
17	Digital I/O 18 Off	Digital I/O 18 On
18	Digital I/O 19 Off	Digital I/O 19 On
19	Digital I/O 20 Off	Digital I/O 20 On
20	Digital I/O 21 Off	Digital I/O 21 On
21	Digital I/O 22 Off	Digital I/O 22 On
22	Digital I/O 23 Off	Digital I/O 23 On
23	Digital I/O 24 Off	Digital I/O 24 On
24	I/O not installed in slot	I/O installed in slot
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused

Table 5-3. 882D Digital I/O Status Bits

5.1.3 882D Error Status Bits

Word Bit	882D Error Status Data	
	Value = 0	Value = 1
00	No error	Configuration corrupt
01	No error	Configuration checksum error
02	No error	Loadcell data checksum error
03	No error	Print format checksum error
04	Unused	Unused
05	Unused	Unused
06	No error	Low battery backup voltage
07	No error	TCP initialization error
08	No error	User program load error
09	No error	Battery backed memory corrupt
10	Unused	Unused
11	Unused	Unused
12	Unused	Unused
13	Unused	Unused
14	Unused	Unused
15	Unused	Unused
16	No error	A/D physical error
17	Unused	Unused
18	Unused	Unused
19	No error	User program string space exhausted
20	Unused	Unused
21	No error	Real time clock error
22	Unused	Unused
23	Unused	Unused
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused
32	Unused	Unused

Table 5-4. 882D Error Status Bits

5.2 882D Input

The input data is information received from the PLC or primary device that is used to perform different actions depending on the data received. All data words 1 - 9 are 32 bits

Modbus Address	Word	Description
40001	0	882D command bits; Section 5.2.1
40003	1	Set Digital I/O slot 0 control bits; Section 5.2.2 on page 21
40005	2	Set Digital I/O slot 0 state; Section 5.2.3 on page 23
40007	3	Set Digital I/O slot 1 control bits; Section 5.2.2 on page 21
40009	4	Set Digital I/O slot 1 state; Section 5.2.3 on page 23
40011	5	Set Digital I/O slot 2 control bits; Section 5.2.2 on page 21
40013	6	Set Digital I/O slot 2 state; Section 5.2.3 on page 23
40015	7	Set read setpoint value from setpoint number 1 - 20
40017	8	Set write setpoint value for setpoint number 1 - 20; Word 10 contains the setpoint value NOTE: This input is unavailable while using a PROFINET option card.
40019	9	Set setpoint value to be written with decimal assumed; Example: 10001 = 1000.1 NOTE: This input is unavailable while using a PROFINET option card.

Table 5-5. 882D Input

5.2.1 882D Command Bits

Word Bit	882D Command Data	
	Value = 0	Value = 1
00	No operation	Update digital I/O slot 0
01	No operation	Update digital I/O slot 1
02	No operation	Update digital I/O slot 2
03	No operation	Perform zero scale operation
04	No operation	Clear totalizer 1
05	No operation	Clear totalizer 2
06	No operation	Clear master totalizer NOTE: The master totalizer will only be cleared if it is not password protected in the 882D.
07	No operation	Batch start
08	No operation	Batch pause
09	No operation	Batch reset
10	Return values as integer	Return values as float
11	Unused	Unused

Table 5-6. 882D Command Bits

Word Bit	882D Command Data	
	Value = 0	Value = 1
12	Unused	Unused
13	Unused	Unused
14	Unused	Unused
15	Unused	Unused
16	Unused	Unused
17	Unused	Unused
18	Unused	Unused
19	Unused	Unused
20	Unused	Unused
21	Unused	Unused
22	Unused	Unused
23	Unused	Unused
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused

Table 5-6. 882D Command Bits (Continued)

5.2.2 882D Digital I/O Control Bits

The digital I/O control bits allow the PLC to select which digital I/O on the 882D that it can control. This works in conjunction with the digital I/O command bits as listed in [Section 5.2.3 on page 23](#).

For digital I/O that supports less than 24 points (the onboard I/O or the 4-channel relay card), the out-of-range bits are ignored by the 882D.

Word Bit	Digital I/O Control Data	
	Value = 0	Value = 1
00	Do not allow control of digital I/O 1	Allow control of digital I/O 1
01	Do not allow control of digital I/O 2	Allow control of digital I/O 2
02	Do not allow control of digital I/O 3	Allow control of digital I/O 3
03	Do not allow control of digital I/O 4	Allow control of digital I/O 4
04	Do not allow control of digital I/O 5	Allow control of digital I/O 5
05	Do not allow control of digital I/O 6	Allow control of digital I/O 6

Table 5-7. 882D Digital I/O Control Bits

Word Bit	Digital I/O Control Data	
	Value = 0	Value = 1
06	Do not allow control of digital I/O 7	Allow control of digital I/O 7
07	Do not allow control of digital I/O 8	Allow control of digital I/O 8
08	Do not allow control of digital I/O 9	Allow control of digital I/O 9
09	Do not allow control of digital I/O 10	Allow control of digital I/O 10
10	Do not allow control of digital I/O 11	Allow control of digital I/O 11
11	Do not allow control of digital I/O 12	Allow control of digital I/O 12
12	Do not allow control of digital I/O 13	Allow control of digital I/O 13
13	Do not allow control of digital I/O 14	Allow control of digital I/O 14
14	Do not allow control of digital I/O 15	Allow control of digital I/O 15
15	Do not allow control of digital I/O 16	Allow control of digital I/O 16
16	Do not allow control of digital I/O 17	Allow control of digital I/O 17
17	Do not allow control of digital I/O 18	Allow control of digital I/O 18
18	Do not allow control of digital I/O 19	Allow control of digital I/O 19
19	Do not allow control of digital I/O 20	Allow control of digital I/O 20
20	Do not allow control of digital I/O 21	Allow control of digital I/O 21
21	Do not allow control of digital I/O 22	Allow control of digital I/O 22
22	Do not allow control of digital I/O 23	Allow control of digital I/O 23
23	Do not allow control of digital I/O 24	Allow control of digital I/O 24
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused

Table 5-7. 882D Digital I/O Control Bits (Continued)

5.2.3 882D Digital I/O Command Bits

The digital I/O command bits allow the PLC to set the state of digital I/O on the 882D. This works in conjunction with the digital I/O control bits as listed in [Section 5.2.2 on page 21](#).

For digital I/O that supports less than 24 points (the onboard I/O or the 4-channel relay card), the out-of-range bits are ignored by the 882D.

Word Bit	Digital I/O Command Data	
	Value = 0	Value = 1
00	Digital I/O 1 off	Digital I/O 1 on
01	Digital I/O 2 off	Digital I/O 2 on
02	Digital I/O 3 off	Digital I/O 3 on
03	Digital I/O 4 off	Digital I/O 4 on
04	Digital I/O 5 off	Digital I/O 5 on
05	Digital I/O 6 off	Digital I/O 6 on
06	Digital I/O 7 off	Digital I/O 7 on
07	Digital I/O 8 off	Digital I/O 8 on
08	Digital I/O 9 off	Digital I/O 9 on
09	Digital I/O 10 off	Digital I/O 10 on
10	Digital I/O 11 off	Digital I/O 11 on
11	Digital I/O 12 off	Digital I/O 12 on
12	Digital I/O 13 off	Digital I/O 13 on
13	Digital I/O 14 off	Digital I/O 14 on
14	Digital I/O 15 off	Digital I/O 15 on
15	Digital I/O 16 off	Digital I/O 16 on
16	Digital I/O 17 off	Digital I/O 17 on
17	Digital I/O 18 off	Digital I/O 18 on
18	Digital I/O 19 off	Digital I/O 19 on
19	Digital I/O 20 off	Digital I/O 20 on
20	Digital I/O 21 off	Digital I/O 21 on
21	Digital I/O 22 off	Digital I/O 22 on
22	Digital I/O 23 off	Digital I/O 23 on
23	Digital I/O 24 off	Digital I/O 24 on
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused

Table 5-8. 882D Digital I/O Command Bits

6.0 882IS Indicator Data Structure

The data structure describes the output and input format that is used by the PLC or primary device to communicate with the 882IS.

IMPORTANT

If card no longer communicates correct data, change the SWAP parameter in the indicator as follows:

Protocol	New SWAP value
Ethernet/IP	BYTE
ProfiNet	Word
Profibus	Word
DeviceNet	BYTE
EtherCAT	BYTE

Table 6-1. Required SWAP values

Decimal Point Handling

Integer commands return no decimal point information to the primary. All values are 32-bit with an assumed decimal place. Floating point commands support decimal point information with no special handling.

Example: A value of 750.1 displayed on unit is returned to the primary as 7501.

6.1 882IS Output

The output data is what is sent to the PLC or other primary device. All of the data is sent continuously where other data is dependent on what input data is sent from the PLC. All data words 0 - 6 are 32 bits.

Modbus Address	Word	Description
40257	0	Error status; Section 6.1.2 on page 26
40259	1	882IS status; Section 6.1.1 on page 25
40261	2	Gross weight
40263	3	Tare weight
40265	4	Net weight
40267	5	Accumulator value
40269	6	Current mode 0 = primary, 1 = secondary

Table 6-2. 882IS Output

6.1.1 882IS Status Bits

Word Bit	882IS Status Data	
	Value = 0	Value = 1
00	In weigh mode	In setup mode
01	Weight OK	Weight over/Under range
02	Not in zero band	In zero band
03	Not used	Not used
04	Not in warmup	In warmup
05	Heartbeat low	Heartbeat high
06	Not used	Not used
07	Not used	Not used
08	Not used	Not used
09	Gross positive value	Gross negative value
10	Tare positive value	Tare negative value
11	Net positive value	Net negative value
12	No motion	Scale in motion
13	Tare not acquired	Tare acquired
14	Tare not entered	Tare entered
15	Unused	Unused
16	Unused	Unused
17	Unused	Unused
18	Unused	Unused
19	Unused	Unused
20	Unused	Unused
21	Unused	Unused
22	Unused	Unused
23	Unused	Unused
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused
32	Unused	Unused

Table 6-3. 882IS Status Bits

6.1.2 882IS Error Status Bits

Word Bit	882IS Error Status Data	
	Value = 0	Value = 1
00	No error	Configuration corrupt
01	No error	Configuration checksum error
02	No error	Load cell data checksum error
03	No error	Print format checksum error
04	Unused	Unused
05	Unused	Unused
06	No error	Low battery backup voltage
07	Unused	Unused
08	Unused	Unused
09	Unused	Unused
10	Unused	Unused
11	Unused	Unused
12	Unused	Unused
13	Unused	Unused
14	Unused	Unused
15	Unused	Unused
16	No error	A/D physical error
17	Unused	Unused
18	Unused	Unused
19	Unused	Unused
20	Unused	Unused
21	Unused	Unused
22	Unused	Unused
23	Unused	Unused
24	Unused	Unused
25	Unused	Unused
26	Unused	Unused
27	Unused	Unused
28	Unused	Unused
29	Unused	Unused
30	Unused	Unused
31	Unused	Unused
32	Unused	Unused

Table 6-4. 882IS Error Status Bits

6.2 882IS Input

The input data is information received from the PLC or primary device that is used to perform different actions depending on the data received. All data words 0 - 6 are 32 bits.

Modbus Address	Word	Description
40001	0	Enter tare value. If set to 0, the full gross weight will be used when the acquire tare command is set to 1.
40003	1	Indicator command bits
40005	2	Set scale mode. 0 = primary, 1 = secondary
40007	3	Unused
40009	4	Unused
40011	5	Unused
40013	6	Unused

Table 6-5. 882IS Input

6.2.1 882IS Command Bits

Word Bit	882IS Command Data	
	Value = 0	Value = 1
00	Return values as integers	Return values a float
01	No operation	Perform zero scale operation
02	No operation	Acquire tare
03	No operation	Clear tare
04	No operation	Clear accumulator
05	No operation	Print request
06	No operation	Lock major keys
07	No operation	Unlock major keys
08	Unused	Unused
09	Unused	Unused
10	Unused	Unused
11	Unused	Unused
12	Unused	Unused
13	Unused	Unused
14	Unused	Unused

Table 6-6. 882IS Command Bits

7.0 Network Settings

7.1 Configuring the Network settings

Configuring the network setting is done using a web browser or the Anybus® IP configuration utility.



Note

The card comes configured with the DHCP set to on, so it does not have a default IP address.

Set network settings using a web browser.

The following figures are examples only, actual displays vary.

1. Open a web browser and type the IP address of the card into the address bar.



Figure 7-1. EtherNet/IP Main Display in a Web Browser

2. Click **Network interface**.

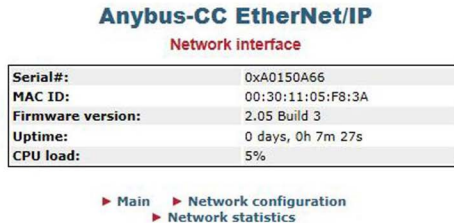


Figure 7-2. EtherNet/IP Network Interface Display in a Web Browser

3. Click **Network configuration**.

Anybus-CC EtherNet/IP
Network configuration

IP Configuration	
IP address:	<input type="text" value="10.2.58.126"/>
Subnet mask:	<input type="text" value="255.255.255.0"/>
Gateway:	<input type="text" value="0.0.0.0"/>
Host name:	<input type="text"/>
Domain name:	<input type="text"/>
DNS1:	<input type="text" value="0.0.0.0"/>
DNS2:	<input type="text" value="0.0.0.0"/>
DHCP:	<input checked="" type="checkbox"/>
<input type="button" value="Store settings"/>	

SMTP Settings	
SMTP Server:	<input type="text"/>
SMTP User:	<input type="text"/>
SMTP Pswd:	<input type="text"/>
<input type="button" value="Store settings"/>	

Ethernet Configuration	
Comm Settings:	<input type="text" value="Auto"/> ▾
<input type="button" value="Store settings"/>	

▶ Main ▶ Network interface

Figure 7-3. EtherNet/IP Network Configuration Display in a Web Browser

4. Change necessary settings.
5. Click **Store settings** to save any changes.

Set network settings using the Anybus IP configuration utility.

1. Install the configuration program found on the CD (IPconfigSetup.exe) or download at www.RiceLake.com.
2. Open the installed configuration program (IPconfig.exe).

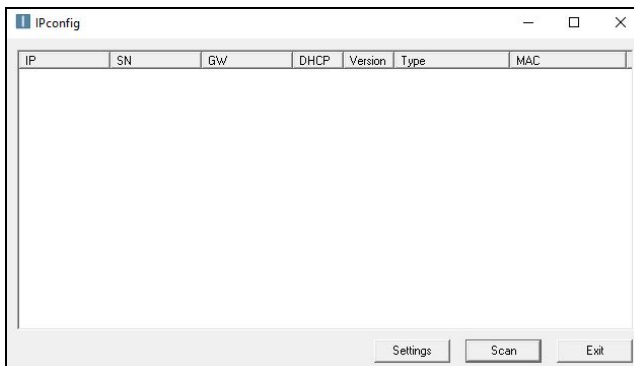


Figure 7-4. IP Configuration Utility – No Device

3. Click **Scan** if the device does not display in the menu.

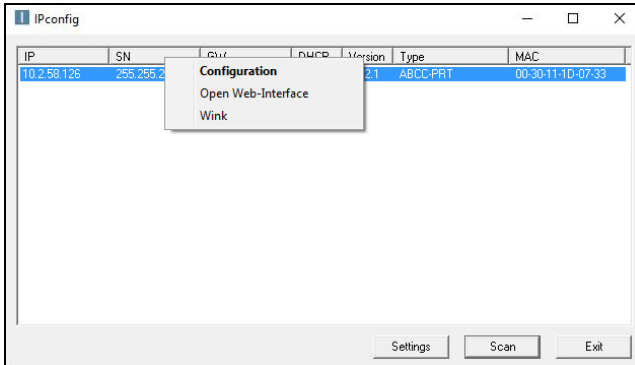


Figure 7-5. IP Configuration Utility – Right-Click Selection

4. Double-click on the device or right-click and select **Configuration**. A menu displays with the current network settings.

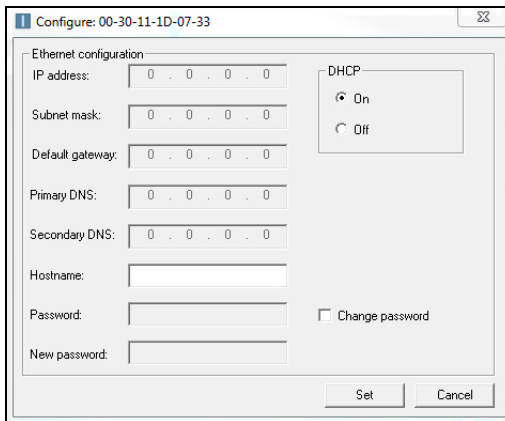


Figure 7-6. Configuration Menu

5. Change necessary settings.
6. Click on the **Set** button.

7.2 Configuring a Generic EtherNet Module (CompactLogix or ControlLogix PLC)

7.2.1 882D Belt Scale EtherNet Module Screen

Module Properties Report: LocalENB (ETHERNET-MODULE 1.1)

General | Connection | Module Info

Type: ETHERNET-MODULE Generic Ethernet Module
 Vendor: Allen-Bradley
 Parent: LocalENB
 Name: BCI_Data
 Description:
 Comm Format: Data - DINT
 Address / Host Name
 IP Address: 10 . 2 . 58 . 126
 Host Name:
 Status: Offline

Connection Parameters

	Assembly Instance:	Size:	
Input:	100	13	(32-bit)
Output:	150	13	(32-bit)
Configuration:	1	0	(8-bit)
Status Input:			
Status Output:			

OK Cancel Apply Help

Figure 7-7. Generic 882D EtherNet Module Screen

7.2.2 882IS Indicator EtherNet Module Screen

Module Properties Report: LocalENB (ETHERNET-MODULE 1.1)

General | Connection | Module Info

Type: ETHERNET-MODULE Generic Ethernet Module
 Vendor: Allen-Bradley
 Parent: LocalENB
 Name: IS_Data
 Description:
 Comm Format: Data - DINT
 Address / Host Name
 IP Address: 10 . 2 . 58 . 126
 Host Name:
 Status: Offline

Connection Parameters

	Assembly Instance:	Size:	
Input:	100	7	(32-bit)
Output:	150	7	(32-bit)
Configuration:	1	0	(8-bit)
Status Input:			
Status Output:			

OK Cancel Apply Help

Figure 7-8. Generic 882IS EtherNet Module Screen



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