EtherNet/IP™ Interface

Installation and Programming Manual

Contents

About This Manual

This manual provides information needed to install and use the Rice Lake Weighing Systems *EtherNet/IP*[1] *Interface*. The *EtherNet/IP Interface* allows the indicator to communicate with an *EtherNet/IP* network.

See the indicator installation manual for additional installation information and detailed descriptions of indicator functions.

The *EtherNet/IP Interface* is installed inside the indicator enclosure. Installation in NEMA 4X stainless steel enclosures permits use in washdown environments.

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

The Ethernet 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.

Authorized distributors and their employees can view or download this manual from the Rice Lake Weighing Systems distributor site at **www.rlws.com**.

1.0   Introduction

EtherNet/IP ("Ethernet Industrial Protocol") is an open industrial networking standard that allows control applications to make use of widely-available 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[2] and ControlNet[3] networks.

The *EtherNet/IP Interface* returns weight and status information from an indicator to the network and provides limited control of indicator functions to the programmer. Indicator configuration and calibration cannot be performed through the *EtherNet/IP Interface*.

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1. EtherNet/IP™ is a trademark of Open DeviceNet Vendor Association
2. CIP™ and DeviceNet™ are trademarks of the Open DeviceNet Vendor Association.
3. ControlNet™ is a trademark of ControlNet International, Ltd.

2.0   Installation

EtherNet/IP-specific functions are provided by an *EtherNet/IP* module. The module plugs into an open option card slot on the CPU board and provides power and access from the indicator bus to the *EtherNet/IP Interface* module.

(!) **Important**   *See the Indicator Technical Manual for installation instructions.*

Manuals can be viewed and downloaded from the Rice Lake Weighing Systems website at www.ricelake.com/manuals.

2.1   EtherNet/IP Interface
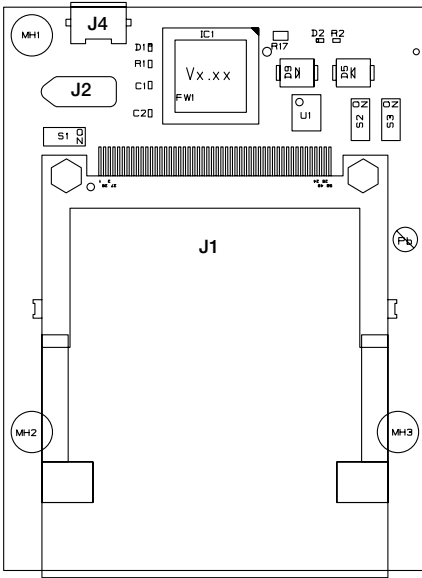
PN 152357 Module, Ethernet/IP

Also included in kit:
PN 14825 Screw, 4-40NC x 1/4″ Qty 4

Note   *A new backplate may be required for this option, depending on the indicator it is being installed in. See the indicator manual for installation instructions.*

PN 153093 Option Card

Figure 2-1. EtherNet/IP Interface Kit

⚠ **WARNING**   *Disconnect power before removing indicator backplate.*

⚠ **CAUTION**   *Use a wrist strap to ground yourself and protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.*

The indicator 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.

2.2   EtherNet/IP Network Connections

Note *To configure an IP Address, refer to Section 3.1 on page 6.*

2.3   LED Status Indicators

Figure 2-2. EtherNet IP Module

Network Status LED (Item 1)

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, FATAL error
Red, flashing	One or more connections timed out (CIP Class 1 or 3)

Table 2-1. Network Status LED

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

Module Status LED (Item 2)

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 2-2. Module Status LED

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

Link/Activity LED (Item 3)

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

Table 2-3. Link/Activity LED

Ethernet Interface (Item 4)

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

3.0   Configuring the Network Settings

Configuring the network setting can be done using a web browser or the Anybus IP configuration utility.

If the IP address of the device is known, open a browser and type the IP address of the card. If the IP address is unknown you may want to use the Anybus configuration tool found on the CD.

Anybus-CC EtherNet/IP
► Network interface   ► Parameter data

Anybus-CC EtherNet/IP
Network interface

Serial#:	0xA0150A66
MAC ID:	00:30:11:05:F8:3A
Firmware version:	2.05 Build 3
Uptime:	0 days, 0h 7m 27s
CPU load:	5%

► Main   ► Network configuration
► Network statistics

Anybus-CC EtherNet/IP
Network configuration

IP Configuration

IP address:	10.2.58.126
Subnet mask:	255.255.255.0
Gateway:	0.0.0.0
Host name:	
Domain name:	
DNS1:	0.0.0.0
DNS2:	0.0.0.0
DHCP:	☑

Store settings

SMTP Settings

SMTP Server:	
SMTP User:	
SMTP Pswd:	

Store settings

Ethernet Configuration

Comm Settings:	Auto

Store settings

► Main   ► Network interface

Figure 3-1. EtherNet/IP Configuration Screen Using your Web Browser

⚠ **Important**   **The DHCP is set to on in the factory and there is not have a default IP address.**

To set the network settings using the Anybus IP Configuration program.

1. Open the Configuration program found on the CD.
2. Click on the Scan button if the device does not appear in the window.
3. Once the device is found double click on the device found in the window.
4. A window will be displayed with the current network settings.
5. Change any or all setting and click on the Set button.

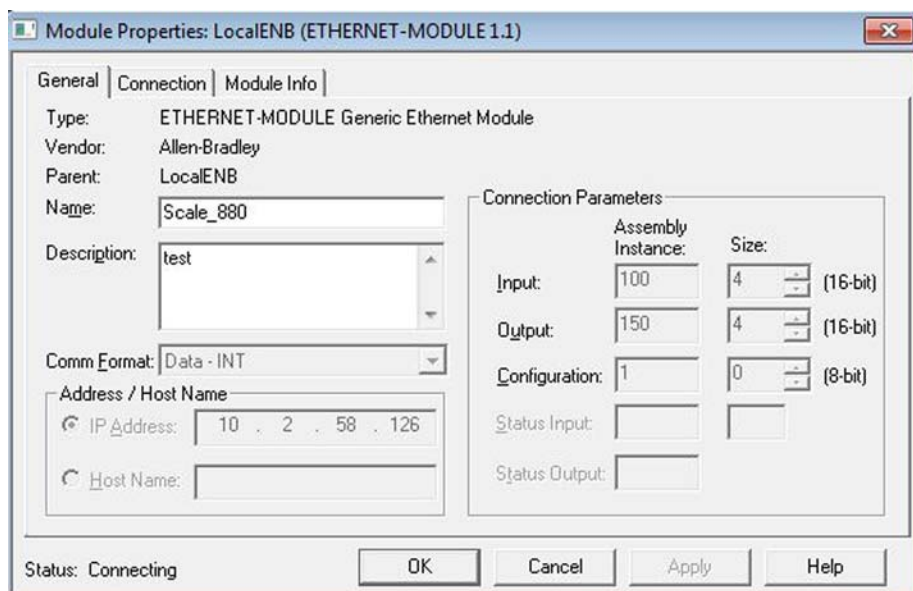## 3.1 Configuring a Generic Ethernet Module in a CompactLogix or ControlLogix PLC.

Figure 3-2. Generic EtherNet Module Screen

Sample for BYTE swapping in a PLC when setting or reading a floating point value.

Use the following rungs when sending or reading floating point data.

Figure 3-3. Ladder Logic for EtherNet/IP Page 1

Sample BYTE swapping for all other commands

```
5                                                    ┌─SWPB─────────────────┐
                                                     │ Swap Byte            │
                                                     │ Source   EthIP_output[1]│
                                                     │                      1│
                                                     │ Order Mode  HIGH/LOW │
                                                     │ Dest     RLWS:O.Data[1]│
                                                     │                    256│
                                                     └──────────────────────┘

        This one needs to be swapped with 2 in order to make float commands work. So the correct value is sent.

6                                                    ┌─SWPB─────────────────┐
                                                     │ Swap Byte            │
                                                     │ Source   EthIP_output[2]│
                                                     │                      0│
                                                     │ Order Mode  HIGH/LOW │
                                                     │ Dest     RLWS:O.Data[3]│
                                                     │                      0│
                                                     └──────────────────────┘

        This one needs to be swapped with 2 in order to make float commands work. So the correct value is sent.

7                                                    ┌─SWPB─────────────────┐
                                                     │ Swap Byte            │
                                                     │ Source   EthIP_output[3]│
                                                     │                      0│
                                                     │ Order Mode  HIGH/LOW │
                                                     │ Dest     RLWS:O.Data[2]│
                                                     │                      0│
                                                     └──────────────────────┘

        Use the copy command to convert the two integers from the array to a float.  This is used to read the scale weight if a float
                                            command is used like command # 288

8                                                    ┌─COP──────────────────┐
                                                     │ Copy File            │
                                                     │ Source   EthIP_input[2]│
                                                     │ Dest         Real[3] │
                                                     │ Length             1 │
                                                     └──────────────────────┘

        Wnen you need to send a value to the indicator use the copy command to convert a float value to the two integers that are
                                                        sent.

9                                                    ┌─COP──────────────────┐
                                                     │ Copy File            │
                                                     │ Source        Real[4]│
                                                     │ Dest  EthIP_output[2]│
                                                     │ Length             2 │
                                                     └──────────────────────┘

(End)

                                                                      RSLogix 5000
```

Figure 3-4. Ladder Logic for EtherNet/IP Page 2

4.0   Commands

Commands are used by the master device to send and receive data from the interface as integer or floating-point data. The master sends eight bytes in the output format (used to write commands to the indicator) and reads eight bytes in the input format (used to read data from the indicator).

Decimal Point Handling

Integer commands return no decimal point information to the master. For example, a value of 750.1 displayed on the indicator is returned to the master as 7501. Floating point commands support decimal point information with no special handling.

4.1 Output Data Format

To perform a command, the master uses the output command format to send four 16-bit words to the interface. These four words contain the command and any parameters necessary to execute it. The output command format is shown in Table 4-1.

Word	Description
Word 1	Command number
Word 2	Parameter
Word 3	Value (MSW)
Word 4	Value (LSW)

Table 4-1. Output Data Format

Note *See Section 4.1.1 for BYTE swapping parameters.*

The contents of each output command format word are described below.

Command number

The number representing the indicator command is sent in the first word. Table 4-2 lists the commands that can be specified for indicators. Some commands may not be available on all indicators.

Note *A lockout feature that looks for any change in the output format data is incorporated into the indicator receive mechanism to prevent inundation by the same command (affected commands noted in Table 4-1). Repeated commands must be separated by any other valid command/ parameter/value combination.*

Decimal	Hex	Command
0	0x000	Return Status and Weight (integer)
1	0x001	Display Channel
2	0x002	Display Gross Weight
3	0x003	Display Net Weight
9	0x009	Gross/Net key press (toggle)
10	0x00A	Zero (see note)
11	0x00B	Display Tare (see note)
12	0x00C	Enter Tare (see note)
13	0x00D	Acquire Tare (see note)
14	0x00E	Clear Tare (see note)

Table 4-2. Remote Commands

Decimal	Hex	Command
16	0x010	Primary Units
17	0x011	Secondary Units
18	0x012	Tertiary Units
19	0x013	Units key press (toggle units)
20	0x014	Print Request
21	0x015	Display Accumulator
22	0x016	Clear Accumulator
23	0x017	Push Weight to Accumulator
32	0x020	Return Gross (integer)
33	0x021	Return Net (integer)
34	0x022	Return Tare (integer)
37	0x025	Return Current Display (integer)
38	0x026	Return Accumulator (integer)
95	0x05F	Set Batching State
96	0x060	Batch Start
97	0x061	Batch Pause
98	0x062	Batch Reset
99	0x063	Batch Status
112	0x070	Lock Indicator Front Panel
113	0x071	Unlock Indicator Front Panel
114	0x072	Set Digital Output ON
115	0x073	Set Digital Output OFF
116	0x074	Read Digital I/O Status
128	0x80	Enable Bus Command Handler
253	0x0FD	No operation
254	0x0FE	Reset Indicator
256	0x100	Return Status and Weight (float)
268	0x10C	Enter Tare (float)
288	0x120	Read Gross (float)
289	0x121	Read Net (float)
290	0x122	Read Tare (float)
293	0x125	Read Current Display (float)
294	0x126	Read Accumulator (float)
304	0x130	Set Setpoint Value (float)
305	0x131	Set Setpoint Hysteresis (float)
306	0x132	Set Setpoint Bandwidth (float)
307	0x133	Set Setpoint Preact (float)
320	0x140	Read Setpoint Value (float)
321	0x141	Read Setpoint Hysteresis (float)
322	0x142	Read Setpoint Bandwidth (float)
323	0x143	Read Setpoint Preact (float)

Table 4-2. Remote Commands (Continued)

Parameter value

To allow communication with a multi-scale indicator, the scale number is sent in the second word of the output command format. Zero (0) represents the current scale. Certain commands require a parameter other than a scale number, such as a slot number, setpoint number, or other selection parameter. See the command descriptions in Section 4.3 on page 14 for specific command requirements.

Value

The third and fourth words of the output format are used to pass value data on certain commands. Values entered in these words are treated as unsigned long integers or floating-point values, depending on the command.

4.1.1   BYTE Swapping

Note *See the Ports Menu in the 880 Technical/Service manual (PN 158387)*

The 880 indicator sends out and receives data in integer format.

The standard format would be as follows for all input and output values:

High BYTE – Low BYTE

If the Parameter in the 880 FLDBUS/SWAP parameter is set to YES then the BYTE order changes to:

Low BYTE – High BYTE

Example:

If the weight on the scale reads 10 lbs and a value of 2560 is displayed in your PLC, either swap the BYTES in your PLC or change the SWAP parameter to YES.

4.2 Input Data Format

In response to a command, the interface returns data and status information to the master as four 16-bit words. This information is returned in the input command format shown in Table 4-3.

The value type can be set for those commands that do not specify integer or floating point data by sending a command 0x000 to specify integer data or command 0x100 for floating-point data. The value type is returned in the status word (bit 14) of the input format.

Word	Description
Word 1	Command number
Word 2	Status
Word 3	Value (MSW)
Word 4	Value (LSW)

Table 4-3. Input Data Format

Note *See Section 4.1.1 for BYTE swapping parameters.*

4.2.1   Command number

The first word echoes the command number. If the command fails or is not recognized, the negative of the command number is returned to signal the error.

4.2.2   Status Data

Indicator status data is returned in the second word (see Table 4-4). Batch commands return batch status in place of the low byte (see Table 4-5). Setpoint commands return batch status in the low byte of the status word and the setpoint number in the high byte.

Word 2 Bit	Indicator Status Data	
	Value=0	Value=1
00	Error ** (see See "Bit-0 Errors" on page 12.)	No error
01	Tare not entered	Tare entered
02	Not center of zero	Center of zero
03	Weight invalid	Weight OK
04	Standstill	In motion
05	Primary units	Other units
06	Tare not acquired	Tare acquired
07	Gross weight	Net weight
08	Channel number	
09		
10	*Note Least significant bit first.*	
11		
12		
13	*Not used*	
14	Integer data	Floating point data
15	Positive weight	Negative weight
** This error condition does not necessarily mean the weight being reported is invalid. Refer to the "Weight invalid" bit.		

Table 4-4. Indicator Status Data Format

Bit-0 Errors
- PLC command failed to execute.
- No configuration has taken place.
- Scale parameter is out of range.
- Print error has occurred.
- Load error has occurred.
- Memory error has occurred.
- Analog to digital converter error.
- Tare error.
- Scale over range error.
- Scale under range error.
- Non-recoverable configuration store error.
- Indicator in configuration mode.

Word 2 Bit	Batch Function Status Data	
	Value=0	Value=1
00	Digital input 4 OFF	Digital input 4 ON
01	Digital input 3 OFF	Digital input 3 ON
02	Digital input 2 OFF	Digital input 2 ON
03	Digital input 1 OFF	Digital input 1 ON
04	Batch not paused	Batch paused
05	Batch not running	Batch running
06	Batch not stopped	Batch stopped
07	Alarm OFF	Alarm ON
08	Setpoint number	
09		
10		
11		
12		
13	*Not used*	
14	Integer data	Floating point data
15	Positive weight	Negative weight

Table 4-5. Batch Function Status Data Format

4.2.3   Value

Weight data is returned to the master in the third and fourth words of the input command format, depending on the command and the value type. The weight data returned is the displayed weight after the command is executed, unless the command specifies otherwise.

4.2.4   Setting a Float Value:

Setting a float value in a setpoint requires the value to be sent in two separate integer values. Most PLCs have a mechanism to take a float value and separate it into to integer values.

The following is what is needed in the output words to set the value of Setpoint #1 to 10000.

    Command word = 304
    Parameter word = 1
    MSW = 17948
    LSW = 16384

4.2.5   Reading a Float Value:

When a float value is read it will be retuned in two integers that will represent the float value.

The PLC will need to combine MSW and LSW integer values back into a float value.

The following is what is will be returned in the input words if the weight on the scale is 800.5.

    Command Word = 288
    Status word = Scale status
    MSW= 17480
    LSW = 8192

4.3   Command Descriptions

Return Status and Current Weight as Integer
Command: 0, 0x000
Parameter: Scale number

Command 0 returns the status and gross or net scale weight (per scale configuration) of the specified scale in integer format, without changing the display. This command also causes the format-independent commands to return a value in the integer format.

Display Channel
Command: 1, 0x001
Parameter: Scale number

Command 1 causes the weight of the specified scale to be displayed and returned in its current mode and format.

Display Gross Weight
Command: 2, 0x002
Parameter: Scale number

Command 2 causes the gross weight of the specified scale to be displayed and returned.

Display Net Weight
Command: 3, 0x003
Parameter: Scale number

Command 3 causes the net weight of the specified scale to be displayed and returned.

Gross/Net Key Press (toggle mode)
Command: 9, 0x009
Parameter: Scale number

Command 9 toggles between gross and net mode (and count mode, if enabled). If a scale number other than 0 is specified, the action will not be seen until the specified scale is displayed.

Zero
Command: 10, 0x00A

Command 10 performs a ZERO operation on the current scale.

Display Tare
Command: 11, 0x00B
Parameter: Scale number

Command 11 causes the tare weight on the specified scale to be displayed. If a scale number other than 0 is specified, the indicator first causes the specified scale to be displayed. Display returns to the prior mode after checking the indicator.

Enter Tare (integer)
Command: 12, 0x00C
Parameter: Scale number
Value: Tare weight

Command 12 enters a tare for the scale selected. Tare data must be in integer format. The indicator continues to return weight data in the current mode for the specified scale.

Acquire Tare (simulate TARE key press)
Command: 13, 0x00D
Parameter: Scale number

Command 13 acquires a tare based on the weight currently on the specified scale. The indicator continues to return weight data in the current mode for the specified scale.

Clear Tare

Command: 14, 0x00E

Parameter: Scale number

Command 14 clears the tare for the specified scale. The indicator continues to return weight data in the current mode for the specified scale.

Primary Units

Command: 16, 0x010

Parameter: Scale number

Command 16 switches the current format of the specified scale to the primary units configured for that scale.

Secondary Units

Command: 17, 0x011

Parameter: Scale number

Command 17 switches the current format of the specified scale to the secondary units configured for that scale.

Tertiary Units

Command: 18, 0x012

Parameter: Scale number

Command 18 switches the current format of the specified scale to the tertiary units configured for that scale, if available.

Units Key Press (toggle units)

Command: 19, 0x013

Parameter: Scale number

Command 19 toggles between primary and secondary units of the specified scale.

Print Request

Command: 20, 0x014

Parameter: Scale number

Command 20 causes the indicator to execute a print command for the current scale.

Display Accumulator

Command: 21, 0x015

Parameter: Scale number

Command 21 causes the value of the accumulator for the specified scale to be displayed and returned. This command is only valid if the accumulator for the specified scale is enabled.

Clear Accumulator

Command: 22, 0x016

Parameter: Scale number

Command 22 clears the value of the accumulator for the specified scale. This command is only valid if the accumulator for the specified scale is enabled.

Push Weight to Accumulator

Command: 23, 0x017

Parameter: Scale number

Command 23 adds the net weight on the specified scale to the value of the accumulator for the specified scale. The scale must return to net zero between accumulations. The indicator returns the accumulated weight data for the specified scale. This command is only valid if the accumulator for the specified scale is enabled.

Return Gross as Integer
Command: 32, 0x020
Parameter: Scale number

Command 32 returns the gross weight value for the specified scale as an integer.

Return Net as Integer
Command: 33, 0x021
Parameter: Scale number

Command 33 returns the net weight value for the specified scale as an integer.

Return Tare as Integer
Command: 34, 0x022
Parameter: Scale number

Command 34 returns the tare weight value for the specified scale as an integer.

Return Current Display as Integer
Command: 37, 0x025
Parameter: Scale number

Command 37 returns the weight value for the specified scale as currently displayed. This may include gross, net, tare, or accumulator values, as enabled.

Return Accumulator as Integer
Command: 38, 0x026
Parameter: Scale number

Command 38 returns the accumulator value for the specified scale. This command is only valid if the accumulator for the specified scale is enabled.

Set Batching State
Command: 95, 0x05F
Parameter: State (0 = off; 1 = auto; 2 = manual)

Command 95 sets the batching (BATCHNG) parameter. Indicator status is returned with the current weight for the last scale specified.

Batch Start
Command: 96, 0x060
Parameter: Scale number

Command 96 starts a batch program from the current step after a stop, pause, or reset. Batch status is returned with the current weight for the specified scale.

Batch Pause
Command: 97, 0x061
Parameter: Scale number

Command 97 pauses a batch program at the current step. Batch status is returned with the current weight for the specified scale.

Batch Reset
Command: 98, 0x062
Parameter: Scale number

Command 98 stops a batch program and resets it to the first batch step. Batch status is returned with the current weight for the specified scale.

Batch Status
Command: 99, 0x063
Parameter: Scale number

Command 99 returns the status of a batch. Batch status is returned with the current weight for the specified scale.

Lock Front Panel of Indicator
Command: 112, 0x070
Parameter: Scale number

Command 112 disables all the keys on the front panel of the indicator. Indicator status is returned with the current weight for the specified scale.

Unlock Front Panel of Indicator
Command: 113, 0x071
Parameter: Scale number

Command 113 re-enables all the keys on the front panel of the indicator. Indicator status is returned with the current weight for the specified scale.

Set Digital Output ON
Command: 114, 0x072
Parameter: Slot number
Value: Bit number

Command 114 sets the specified digital output ON (active). Use slot number 0 for onboard digital outputs. Indicator status is returned with the current weight for the last scale specified.

Set Digital Output OFF
Command: 115, 0x073
Parameter: Slot number
Value: Bit number

Command 115 sets the specified digital output OFF (inactive). Use slot number 0 for onboard digital outputs. Indicator status is returned with the current weight for the last scale specified.

Read Digital I/O
Command: 116, 0x074
Parameter: Slot number

Command 116 returns the status for all digital I/O in the specified slot in words 3and 4. Use slot number 0 for onboard digital I/O. Indicator status is returned in the status area for the last scale specified.

Enable Bus Command Handler
Command: 128, 0x80
Parameter: None

Command 128 enables the bus command handler in a user program. While this handler is enabled, all other PLC commands are disabled.

No Operation
Command: 253, 0x0FD
Parameter: Scale number

Command 253 provides a command to use between operations, as necessary, without causing the indicator to perform any action. Indicator status and weight for the specified scale is returned.

Reset Indicator
Command: 254, 0x0FE
Parameter: None

Command 254 provides a command to remotely reset the indicator. No data is returned.

Return Status and Current Weight as Float

Command: 256, 0x100
Parameter: Scale number

Command 256 returns the status and weight of the specified scale in floating-point format, without changing the display. This command also causes the format-independent commands to return a value in the floating-point format. Returns current weight at a floating-point format.

Enter Tare as Float

Command: 268, 0x10C
Parameter: Scale number
Value: Tare weight

Command 268 enters a tare for the scale selected in floating-point format. The indicator returns the tare weight as taken, or 0 for no tare.

Read Gross Weight as Float

Command: 288, 0x120
Parameter: Scale number

Command 288 returns the gross weight value for the specified scale in floating-point format.

Read Net Weight as Float

Command: 289, 0x121
Parameter: Scale number

Command 289 returns the net weight value for the specified scale in floating-point format.

Read Tare as Float

Command: 290, 0x122
Parameter: Scale number

Command 290 returns the tare weight value for the specified scale in floating-point format.

Read Current Display as Float

Command: 293, 0x125
Parameter: Scale number

Command 293 returns the weight value for the specified scale as currently displayed in floating-point format. This may include gross, net, tare, or accumulator values, as enabled. The weight value is returned in the mode used to display a scale widget.

Read Accumulator as Float

Command: 294, 0x126
Parameter: Scale number

Command 294 returns the accumulator value for the specified scale in floating-point format. Batch status is returned in place of the indicator status.

Set Setpoint Value as Float

Command: 304, 0x130
Parameter: Setpoint number
Value: Setpoint value

Command 320 sets the setpoint value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a setpoint value. Batch status is returned in place of the indicator status.

Set Setpoint Hysteresis as Float
Command: 305, 0x131
Parameter: Setpoint number
Value: Hysteresis value

Command 305 sets the hysteresis value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a hysteresis value. Batch status is returned in place of the indicator status.

Set Setpoint Bandwidth as Float
Command: 306, 0x132
Parameter: Setpoint number
Value: Bandwidth value

Command 306 sets the bandwidth value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a bandwidth value. Batch status is returned in place of the indicator status.

Set Setpoint Preact as Float
Command: 307, 0x133
Parameter: Setpoint number
Value: Preact value

Command 307 sets the preact value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a preact value. Batch status is returned in place of the indicator status.

Read Setpoint Value as Float
Command: 320, 0x140
Parameter: Setpoint number

Command 320 returns the target value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a target value. Batch status is returned in place of the indicator status.

Read Setpoint Hysteresis as Float
Command: 321, 0x141
Parameter: Setpoint number

Command 321 returns the hysteresis value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a hysteresis value. Batch status is returned in place of the indicator status.

Read Setpoint Bandwidth as Float
Command: 322, 0x142
Parameter: Setpoint number

Command 322 returns the bandwidth value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a bandwidth value. Batch status is returned in place of the indicator status.

Read Setpoint Preact as Float
Command: 323, 0x143
Parameter: Setpoint number

Command 323 returns the preact value for the specified setpoint in floating-point format. This command is only valid if the setpoint is configured and requires a preact value. Batch status is returned in place of the indicator status.

5.0   EtherNet/IP Interface Specifications

Power Requirements

Bus Adapter Card with EtherNet/IP Module, DC Power:

Supply voltage	6 VDC
Typical current draw	270 mA
Power consumption	1.62 W
Maximum Current Draw	500 mA
Maximum Power	3 W

Communications Specifications

EtherNet/IP Network Communications:
Twisted-pair cabling at 10 or 100Mbps

Environmental Specifications

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

Conformance

EtherNet√IP™
conformance tested

The EtherNet/IP Interface has been tested by ODVA's independent test lab and found to comply with the ODVA composite conformance test, revision 3.

CE

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

EtherNet/IP Interface Limited Warranty

Rice Lake Weighing Systems (RLWS) warrants that all RLWS equipment and systems properly installed by a Distributor or Original Equipment Manufacturer (OEM) will operate per written specifications as confirmed by the Distributor/OEM and accepted by RLWS. All systems and components are warranted against defects in materials and workmanship for one year.

RLWS warrants that the equipment sold hereunder will conform to the current written specifications authorized by RLWS. RLWS warrants the equipment against faulty workmanship and defective materials. If any equipment fails to conform to these warranties, RLWS will, at its option, repair or replace such goods returned within the warranty period subject to the following conditions:

- Upon discovery by Buyer of such nonconformity, RLWS will be given prompt written notice with a detailed explanation of the alleged deficiencies.
- Individual electronic components returned to RLWS for warranty purposes must be packaged to prevent electrostatic discharge (ESD) damage in shipment. Packaging requirements are listed in a publication, "Protecting Your Components From Static Damage in Shipment," available from RLWS Equipment Return Department.
- Examination of such equipment by RLWS confirms that the nonconformity actually exists, and was not caused by accident, misuse, neglect, alteration, improper installation, improper repair or improper testing; RLWS shall be the sole judge of all alleged non-conformities.
- Such equipment has not been modified, altered, or changed by any person other than RLWS or its duly authorized repair agents.
- RLWS will have a reasonable time to repair or replace the defective equipment. Buyer is responsible for shipping charges both ways.
- In no event will RLWS be responsible for travel time or on-location repairs, including assembly or disassembly of equipment, nor will RLWS be liable for the cost of any repairs made by others.

THESE WARRANTIES EXCLUDE ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEITHER RLWS NOR DISTRIBUTOR WILL, IN ANY EVENT, BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

RLWS AND BUYER AGREE THAT RLWS' SOLE AND EXCLUSIVE LIABILITY HEREUNDER IS LIMITED TO REPAIR OR REPLACEMENT OF SUCH GOODS. IN ACCEPTING THIS WARRANTY, THE BUYER WAIVES ANY AND ALL OTHER CLAIMS TO WARRANTY.

SHOULD THE SELLER BE OTHER THAN RLWS, THE BUYER AGREES TO LOOK ONLY TO THE SELLER FOR WARRANTY CLAIMS.

NO TERMS, CONDITIONS, UNDERSTANDING, OR AGREEMENTS PURPORTING TO MODIFY THE TERMS OF THIS WARRANTY SHALL HAVE ANY LEGAL EFFECT UNLESS MADE IN WRITING AND SIGNED BY A CORPORATE OFFICER OF RLWS AND THE BUYER.

RICE LAKE WEIGHING SYSTEMS • 230 WEST COLEMAN STREET
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Notes

RICE LAKE®
WEIGHING SYSTEMS

To be the best by every measure®