

Fieldbus Option Addendum

The iQUBE³ can be connected to SCT-2200 fieldbus options to allow the iQUBE³ to communicate with a PLC with the necessary network protocol. The following sections provide details on fieldbus communications and describe the procedures required to configure the network protocols.

The following SCT-2200 fieldbus options can be paired with the iQUBE³ junction box. See catalog or iQUBE³ web page for correct part numbers:

- Fieldbus, SCT-2200 EtherNet/IP[™] Module
- Fieldbus, SCT-2200 PROFINET[®] Module
- Fieldbus, SCT-2200 PROFIBUS[®] Module
- Fieldbus, SCT-2200 DeviceNet[®] Module
- Fieldbus, SCT-2200 CANopen[®] Module
- Fieldbus, SCT-2200 EtherCAT[®] Module
- Fieldbus, SCT-2200 Modbus TCP[®] Module



NOTE: For the system to communicate successfully, firmware must be updated to the following versions:

- The SCT-2200 fieldbus — V1.25 or higher.
- The 1280 indicator — V2.09.00 or higher.
- The iQUBE³ junction box — V1.01.00 or higher.

1.0 FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la partie 15 du règlement de la FCC. Son utilisation est soumise aux deux conditions suivantes : (1) cet appareil ne doit pas provoquer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.

2.0 Fieldbus Wiring

1. Remove the cover of the iQUBE³.
2. Wire an RJ45 to blunt-end cable (not provided) to the J14 connector on the iQUBE³ CPU board.



NOTE: Maximum RJ45 cable length is 4,000 ft.

iQUBE ³ J14 Pins	SCT-2200 Fieldbus Module RJ45 Pins	Wire Color	Wire Diagram
-	6-8 (Not Used)	—	—
Y (5)	5 (B-)	White/Blue	
Z (4)	4 (A+)	Blue	
1-3 (Not Used)	1-3 (Not Used)	—	—

Table 1. Pin Assignments

3. Connect the other end of the cable to one of the RS-485 RJ45 ports on the SCT-2200 fieldbus module.
4. Connect the SCT-2200 fieldbus module to power.

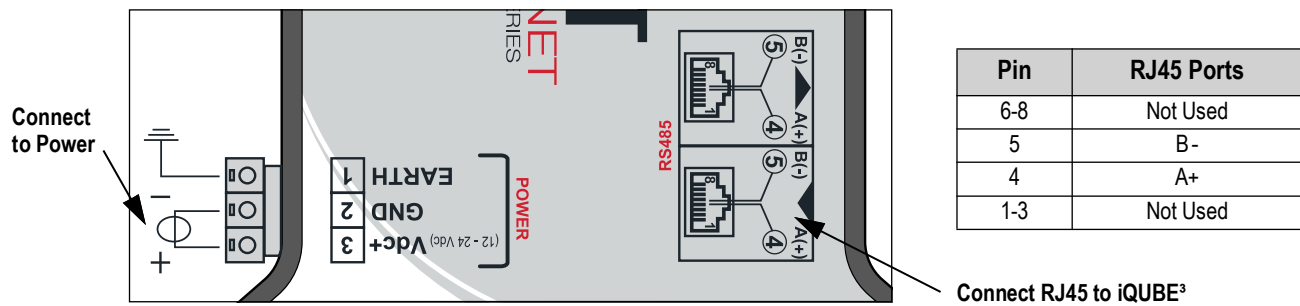


Figure 1. SCT-2200 Fieldbus Module Wiring

3.0 iQUBE³ Configuration

Move the **SW1 SETUP** switch on the iQUBE³ CPU board to **ON** and power cycle the iQUBE³ before attempting to configure. Use the diagram mounted on the lid of the iQUBE³ to locate the switch.

3.1 Connect iQUBE³ to Revolution

1. Wire a computer to the iQUBE³ using a RS232 serial connection, the USB-C Virtual Comm Port, or the TCP Server over Ethernet.
2. Open Revolution Version 3.58 or higher and select **New** in the File menu.
3. Scroll down to select **iQUBE³ 1.x** from the indicator list and select **OK**. iQUBE³ indicator information displays.
4. Select **Options...** from the Tools menu.

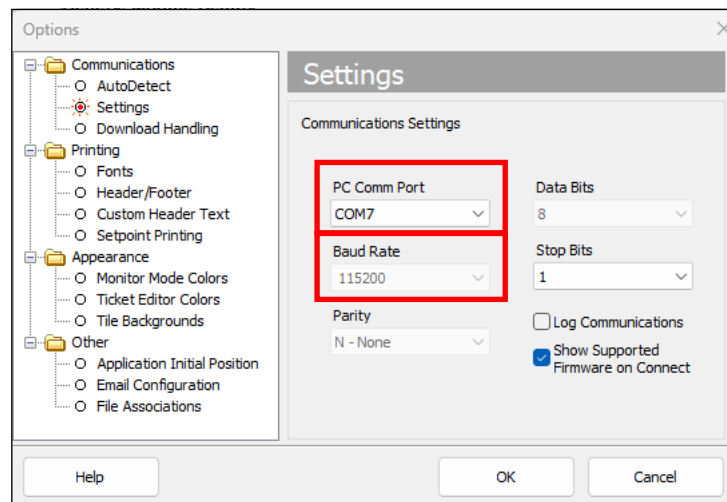


Figure 2. Serial Comm Port Menu

5. Select **Settings** in the left column.
6. Set the PC Comm port to correlate with the port that is connected to the iQUBE³.
7. Set the Baud Rate to 115200.
8. Select the **Connect** toolbar button or select **Connect** in the Communications menu. Revolution initiates connection.
9. If connection is unsuccessful, confirm the wiring and communication settings are correct.

3.2 Configure iQUBE³ to Communicate with the Fieldbus

The following procedure describes how to configure the iQUBE³ for communication with an SCT-2200 fieldbus option with firmware version 1.25 or higher.

1. Open the **Base Configuration** menu in the left column.
2. Select **Comm Ports**. Available serial ports display in the center column.

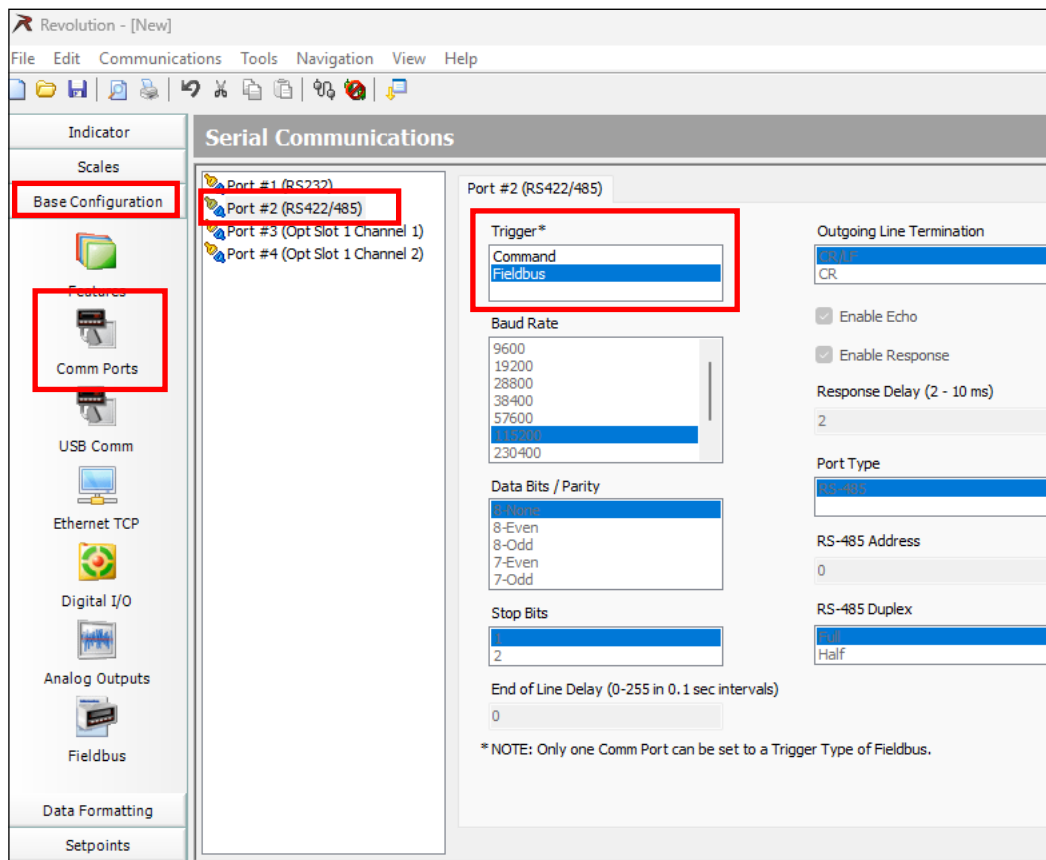


Figure 3. Serial Comm Port Menu

3. Select the port number of the iQUBE³ that is wired to the SCT-2200 fieldbus (Port #2 to J14).
4. Select **Fieldbus** from the list of available triggers.



IMPORTANT: Fieldbus must be wired to RS485 serial connection. Fieldbus can not be connected to Port #1 which communicates in RS232 only.

5. Select Fieldbus in the left column. Optional Fieldbus menu displays.

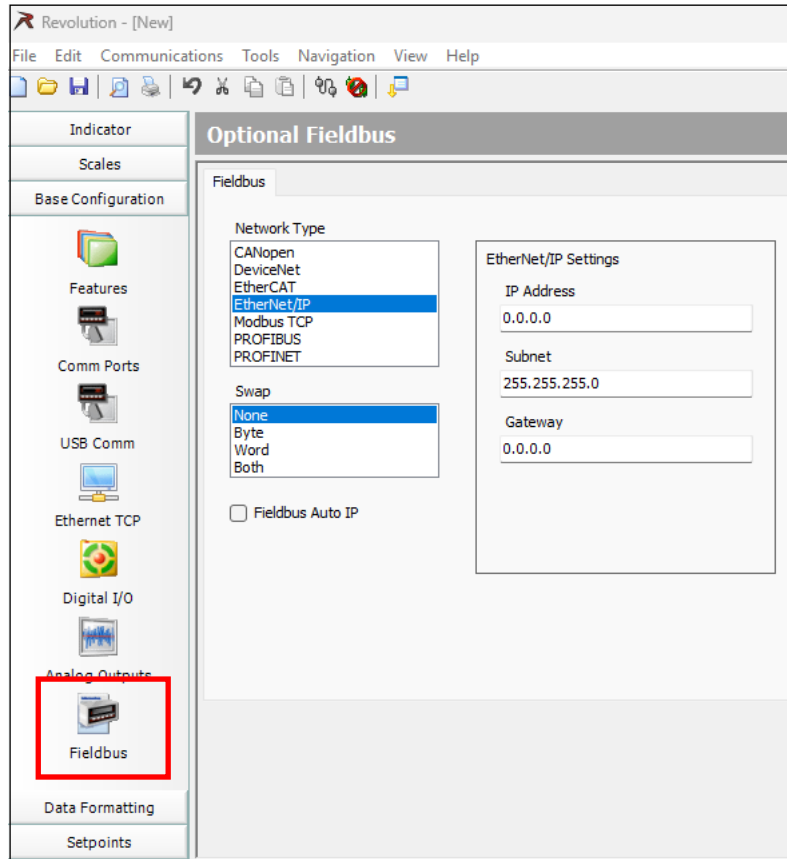


Figure 4. Serial Comm Port Menu



NOTE: If Fieldbus has not been selected as the trigger in the Comm Port menu, fieldbus options are disabled.

6. Select Network Type and configure fieldbus settings to communicate with the PLC.



NOTE: Swap assumes that a word is 2 bytes in length.

Swap Setting	Original	Swapped	Description
NONE	AB CD	AB CD	No Swapping
BYTE	AB CD	BA DC	Swap only bytes
BOTH	AB CD	DC BA	Swap both bytes and words
WORD	AB CD	DC AB	Swap only words

Table 2. Unit Values

3.3 Configure iQUBE³ Scales

1. Select **Scales** and **System Configuration** in the left column. Board Assignments menu displays.

Indicator

Scales

System Configuration

Load Cell Settings

Load Cell Assignments

General Scale Settings

Indiv. Scale Settings

Base Configuration

Data Formatting

Setpoints

System Configuration - Board Assignments

Board Assignments

A System consists of one CPU Board and up to five 4-Channel Load Cell boards. Use this section to assign the Optional 4-Channel Load Cell Boards to the system.

- Proper board assignment is required before configuration of scales.
- A blank entry represents a non-existent board.
- ID's are the 10-Character Board Serial Number found on a sticker on the board.
- You may manually enter the ID's, or use an assignment method below.
- WARNING - Proper configuration is critical for proper operation!

4-Channel Load Cell Board #1 (Cells 5 - 8): 655D7C8DF5001904

4-Channel Load Cell Board #2 (Cells 9 - 12):

4-Channel Load Cell Board #3 (Cells 13 - 16):

4-Channel Load Cell Board #4 (Cells 17 - 20):

4-Channel Load Cell Board #5 (Cells 21 - 24):

Auto Assign assigns the boards in a random order. If you have more than one optional 4-Channel Load Cell board, it is better to use the Manual Assign process below.

Auto Assign

For Manual Assignment, click Start Manual Assign below, then press the SW1 (Boot) switch on each 4-Channel Load Cell board in the order you want to assign them.

Start Manual Assign

Clear Assignments

Figure 5. Board Assignments Menu

2. If the system has one board, select **Auto Assign**. If the system has more than one board select **Manual Assign**.
3. Follow the directions in the dialog box. The serial numbers of the assigned boards display if detected.
4. Select **Load Cell Settings** in the left column. Individual Load Cell Settings menu displays.

Indicator

Scales

System Configuration

Load Cell Settings

Load Cell Assignments

General Scale Settings

Indiv. Scale Settings

Base Configuration

Data Formatting

Setpoints

Individual Load Cell Settings

Load Cell #1

Capacity (0 - 1000000): 75000

Factory Sensitivity (0.1 - 10.0 mV/V): 3

Name (0 - 16 char): LC1

Normalization Value: 1

Serial Number (0 - 16 char): S/N#1

Apply Cell 1 Capacity And Sensitivity To All Cells

Figure 6. Individual Load Cell Settings Menu

5. Set load cell parameters and select **Apply Cell 1 Capacity and Sensitivity to all Cells**. Assignment Complete displays.

6. Select **OK**.
7. Select **Load Cell Assignments** in the left column. **Load Cell Assignments** menu displays.

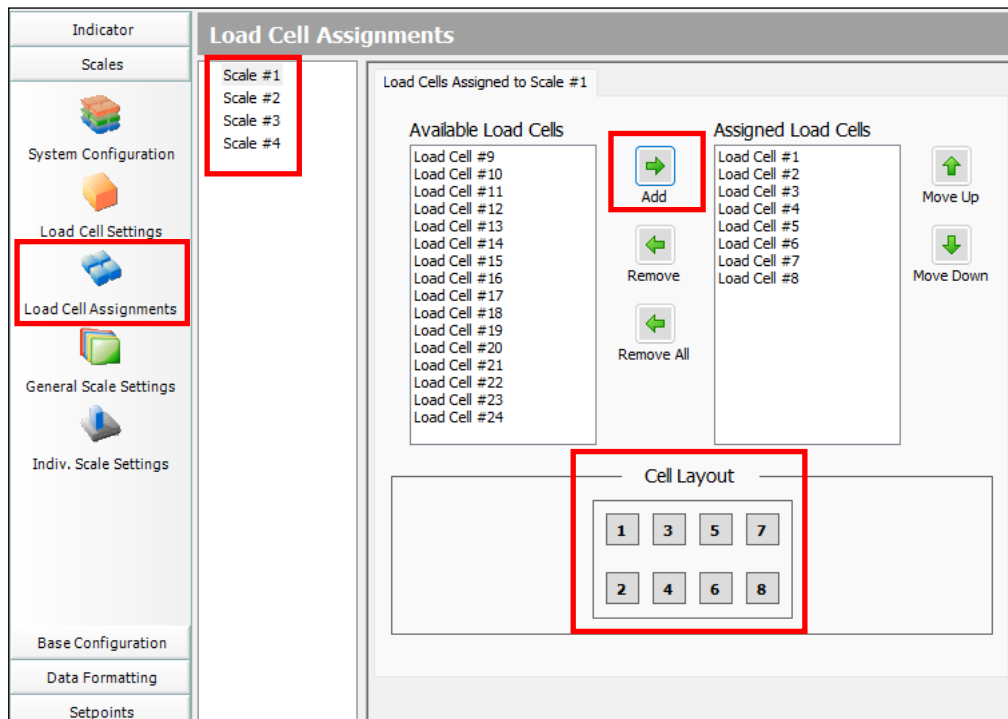


Figure 7. Load Cell Assignment Menu

8. Select scale number in the center column.
9. Select each available load cell to highlight it and select **Add** to assign it to the scale. Cell Layout displays at the bottom of the screen as load cells are added.
10. Repeat Steps 8 and 9 for each scale.
11. Select **General Scale Settings** in the left column. General Scale Settings menu displays.

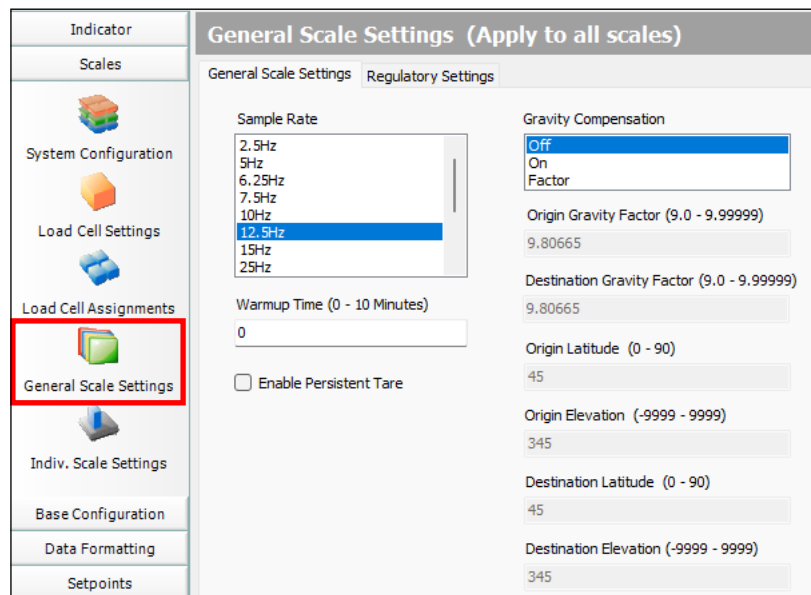


Figure 8. General Scale Settings Menu

12. Adjust parameters as needed.

13. Select **Individual Scale Settings** in the left column. Individual Scale Settings menu displays.

Figure 9. Individual Scale Settings Menu

14. Select scale number to be configured in the center column and select **Launch Scale # Wizard**. Scale Wizard displays.
 15. Follow prompts in the Scale Wizard.
 16. Repeat Steps 14 and 15 for each scale.

3.4 Send Configuration to Device



NOTE: Any time that configuration parameters are changed, they must be sent to the iQUBE³.

1. Select **Send Configuration to Device** from the Communications menu. Download Configuration displays.

Figure 10. Send Configuration to Device Control

2. Select the configuration settings to send.
 3. Select **Begin**. Revolution sends scale parameters and displays Download Complete.
 4. Select **Close** to exit.

4.0 Fieldbus Troubleshooting

After configuring the iQUBE³ parameters, cycle power to the module if it is wired to the iQUBE³.

The EtherNet/IP, Modbus TCP, PROFINET, DeviceNet, and CANopen modules have three status LEDs:

LED Color	Original	Description
Green	Power On	LED illuminates when there is power to the module.
Yellow	Status	LED indicates state of RS-485 communication to the iQUBE ³ . • LED blinks rapidly for 15 seconds then turns off for 1 second if the module is not communicating. • LED blinks rapidly and does not turn off after 15 seconds if module is communicating with the iQUBE³.
Red	Error	LED blinks until PLC is connected and communicating with the module, then turns off.

Table 3. Three Status LEDs

The PROFIBUS module has four status LEDs that function differently than the above modules' LEDs:

LED Color	Label	Description
Red	Power	Illuminates when there is power to the module.
Yellow	PROFIBUS	LED indicates state of RS-485 communication to the iQUBE ³ . • When connected to the PLC, Yellow PROFIBUS LED illuminates solid. • If the module is not connected to the iQUBE³, the Yellow PROFIBUS LED blinks rapidly for 15 seconds, then the Green RX LED blinks 3 times, followed by the Yellow TX LED blinking 3 times. This cycle repeats until module connects.
Green	RX	Green RX LED and Yellow TX LED blink alternately when module is communicating with the iQUBE ³
Yellow	TX	

Table 4. PROFIBUS Four Status LEDs



IMPORTANT: If the fieldbus option is not communicating the correct data, adjust the Byte/Word Swap parameter in the iQUBE³. See [Figure 4 on page 4](#) for the fieldbus menu.

4.1 EtherNet/IP Fieldbus Configuration



NOTE: The iQUBE³ must be configured for Fieldbus and EtherNet/IP:

Electronic Data Sheet (EDS) File Setup

This procedure describes the preferred method for setting up the EtherNet/IP with an EDS file. Use RXLogix to import EDS files.

1. Select the **Module Type Vendor Filter**.
2. Select **Hilscher GmbH**.
3. Select the catalog number **NIC 52-RE/EIS** and select **Change**.
4. Select **Exclusive Owner** from the drop down list and select **OK**.

Generic Module Setup

Use the following settings to setup a generic module.

- **Comm Format:** Data - DINT
- **Input:** Assembly Instance: 101 | Size: 33
- **Output:** Assembly Instance: 100 | Size: 32
- **Configuration:** Assembly Instance: 8 | Size: 0

4.2 PROFINET Fieldbus Configuration



NOTE: The iQUBE³ must be configured for Fieldbus and PROFINET:

Download GSDML files from the Rice Lake Weighing Systems website and configure PROFINET based on [Figure 11](#).

Device overview					
Module	Rack	Slot	I address	Q address	
▼ dini_1	0	0			...
▶ PN-IO	0	0 X1			...
64 Bytes Output_1	0	1		64...127	...
64 Bytes Output_2	0	2		128...191	...
	0	3			
	0	4			
64 Bytes Input_1	0	5	68...131		...
64 Bytes Input_2	0	6	132...195		...
	0	7			
	0	8			

Figure 11. PROFINET Device Overview

4.3 PROFIBUS Fieldbus Configuration



NOTE: The iQUBE³ must be configured for Fieldbus and PROFIBUS:

Configure PROFIBUS based on [Figure 12](#).

Device overview			Options	
Module	Rack		Catalog	
IQube PROFIBUS	0	0	Search	
IN/OUT: 128 Byte (64 word)_1	0	1	☒ Filter	
	0	2	☐ IN/OUT: 16 Byte (8 word)	
	0	3	☐ IN/OUT: 32 Byte (16 word)	
	0	4	☐ INPUT: 1 Byte	
	0	5	☐ INPUT: 2 Byte (1 word)	
	0	6	☐ INPUT: 4 Byte (2 word)	
	0	7	☐ INPUT: 8 Byte (4 word)	
	0	8	☐ INPUT: 16 Byte (8 word)	
	0	9	☐ INPUT: 32 Byte (16 word)	
	0	...	☐ OUTPUT: 1 Byte	
	0	...	☐ OUTPUT: 2 Byte (1 word)	
	0	...	☐ OUTPUT: 4 Byte (2 word)	
	0	...	☐ OUTPUT: 8 Byte (4 word)	
	0	...	☐ OUTPUT: 16 Byte (8 word)	
	0	...	☐ OUTPUT: 32 Byte (16 word)	
	0	...	☐ IN/OUT: 128 Byte (64 word)	

Figure 12. PROFIBUS Device Overview

5.0 Data From the PLC to the iQUBE³

Modbus Register No.	Register No.	Data Registers	Byte Order	Byte No.
40001	0	Command Register	3	0
			2	1
40002	1		1	2
			0	3
40003	2	Parameter 1	3	4
			2	5
40004	3		1	6
			0	7
40005	4	Parameter 2	3	8
			2	9
40006	5		1	10
			0	11
40007	6	Parameter 3	3	12
			2	13
40008	7		1	14
			0	15
40009	8	Calibration Type	0	16
			1	17
40010	9		2	18
			3	19
40011	10	Capacity	3	20
			2	21
40012	11		1	22
			0	23
40013	12	Units Table 8 on page 12	3	24
			2	25
40014	13		1	26
			0	27
40015	14	Format Table 9 on page 12	3	28
			2	29
40016	15		1	30
			0	31
40017	16	Calibration Point	3	32
			2	33
40018	17		1	34
			0	35
40019	18	Calibration Weight	3	36
			2	37
40020	19		1	38
			0	39

Table 5. PLC to Junction Box Data



NOTE: Limit number of bytes for M30 PROFIBUS and PROFINET modules to 16. Set number of bytes for M40 PROFIBUS and PROFINET to full amount.

Commands

Command	Decimal	Description
No Command	0	No action
Zero Scale	1	Zero the scale Parameter 1 = scale number (1-5)
Tare Scale	2	Tare the scale - Parameter 1 = scale number (1-5) - Tare current weight if Parameter 2 = 0; otherwise tare the value that is in parameter 2
Clear Tare	3	Clear a tare if one exists Parameter 1 = scale number (1-5)
Net Mode	4	Switch the scale from Gross mode to Net mode Parameter 1 = scale number (1-5)
Gross Mode	5	Switch the scale from Net mode to Gross mode Parameter 1 = scale number (1-5)
Write Setpoint	10	Parameter 1 = setpoint # Parameter 2 = write value (floating point)
Read Setpoint	11	- Parameter 1 = setpoint # - MultiValue 1 = returned setpoint value (floating point)
Read I/O Points	12	- Parameter 1 = I/O slot number - MultiValue 1 = returned I/O status
Set Output On	24	- Parameter 1 = slot - Parameter 2 = bit
Set Output Off	25	- Parameter 1 = slot - Parameter 2 = bit
Write Setup	27	Write calibration setting Parameter 1 = scale number (1-4)
Restart Instrument	34	Restarts the junction box
Perform Zero Calibration	35	Performs a zero calibration Parameter 1 = scale number (1-4)
Perform Span Calibration	36	Parameter 1 = scale number (1-4)
Point Calibration	37	Parameter 1 = scale number (1-4)
Save Calibration	38	Save the calibration and exit calibration mode. Parameter 1 = scale number (1-4)
Abort Calibration	39	Aborts a calibration and clears any errors
Read Accumulator	41	- Parameter 1 = scale number (1-5) - MultiValue 1 = returned accumulator value (floating point) - MultiValue 2 = scale accumulator number returned (integer)
Acknowledge Diagnostic Flag	50	Parameter 1 = bitfield indicating which flag(s) are to be acknowledged
Read Load Cell mV Value	51	- Parameter 1 = load cell number (1-24) - MultiValue 1 = returned mV value (floating point) - MultiValue 2 = cell number being returned.
Calibrate Zero for Section/Corner Match	52	Parameter 1 = scale number (1-4)
Calibrate Step for Section/Corner Match	53	Parameter 1 = scale
Normalize Scale	54	Parameter 1 = scale

Table 6. Command Values



NOTE: Values that are sent or return as a floating point value do not display with decimal point formatting. Decimal point formatting is set in Register 14 and 15 in [Table 5 on page 10](#) with values defined in [Table 9 on page 12](#). If Decimal point formatting is set to 88888.81, floating point value returns at 8888881.

Calibration Type Values

Value	Description
0	Standard
1	Section Match
2	Corner Match

Table 7. Calibration Type Value

Calibration Unit Values

Value	Unit
0	Use configured unit
1	lb
2	kg
3	oz
4	tn
5	t
6	g
7	None

Table 8. Unit Values

Calibration Decimal Point Format Setting

Value	Decimal Point
0	Use configured decimal point
1	88.88881
2	88.88882
3	88.88885
4	888.8881
5	888.8882
6	888.8885
7	8888.881
8	8888.882
9	8888.885
10	88888.81
11	88888.82
12	88888.85
13	888888.1
14	888888.2
15	888888.5
16	8888881
17	8888882
18	8888885
19	8888810
20	8888820
21	8888850
22	8888100
23	8888200
24	8888500

Table 9. Decimal Point Values

6.0 Data From the iQUBE³ to the PLC



NOTE: For EtherNet/IP options only. If a generic module is setup, Header information occupies the first four bytes of data and pushes other data registers down.

Modbus Register No.	Register No.	Data Registers	Byte Order	Byte No
40001	0	Gross Weight Scale 1	3	0
			2	1
40002	1		1	2
			0	3
40003	2	Net Weight Scale 1	3	4
			2	5
40004	3		1	6
			0	7
40005	4	Gross Weight Scale 2	3	8
			2	9
40006	5		1	10
			0	11
40007	6	Net Weight Scale 2	3	12
			2	13
40008	7		1	14
			0	15
40009	8	Gross Weight Scale 3	3	16
			2	17
40010	9		1	18
			0	19
40011	10	Net Weight Scale 3	3	20
			2	21
40012	11		1	22
			0	23
40013	12	Gross Weight Scale 4	3	24
			2	25
40014	13		1	26
			0	27
40015	14	Net Weight Scale 4	3	28
			2	29
40016	15		1	30
			0	31
40017	16	Gross Weight Scale 5	3	32
			2	33
40018	17		1	34
			0	35
40019	18	Net Weight Scale 5	3	36
			2	37
40020	19		1	38
			0	39
40021	20	Scale Status Scale 1 Table 11 on page 15	3	40
			2	41
40022	21		1	42
			0	43
40023	22	Scale Status Scale 2 Table 11 on page 15	3	44
			2	45
40024	23		1	46
			0	47
40025	24	Scale Status Scale 3 Table 11 on page 15	3	48
			2	49
40026	25		1	50
			0	51

Table 10. Junction Box to PLC Data

Modbus Register No.	Register No.	Data Registers	Byte Order	Byte No
40027	26	Scale Status Scale 4 Table 11 on page 15	3	52
			2	53
40028	27		1	54
			0	55
40029	28	Scale Status Scale 5 Table 11 on page 15	3	56
			2	57
40030	29		1	58
			0	59
40031	30	Onboard Digital I/O Status Table 12 on page 15	3	60
			2	61
40032	31		1	62
			0	63
40033	32	Diagnostic Flags Table 13 on page 15	3	64
			2	65
40034	33		1	66
			0	67
40035	34	Last Command Processed Table 14 on page 16	3	68
			2	69
40036	35		1	70
			0	71
40037	36	Command Status Table 15 on page 16	3	72
			2	73
40038	37		1	74
			0	75
40039	38	Calibration Status Table 16 on page 16	3	76
			2	77
40040	39		1	78
			0	79
44041	40	Multi-use Value 1	3	80
			2	81
40042	41		1	82
			0	83
40043	42	Multi-use Value 2	3	84
			2	85
40044	43		1	86
			0	87

Table 10. Junction Box to PLC Data (Continued)



NOTE: Limit number of bytes for M30 PROFIBUS and PROFINET modules to 16. Set number of bytes for M40 PROFIBUS and PROFINET to full amount.

Scale Status

Bit	Description	Bit Status	
0	Net Weight Polarity	0 = Positive	1 = Negative
1	Gross Weight Polarity	0 = Positive	1 = Negative
2	Weight Stability	0 = Stable	1 = Motion
3	Underload Condition	0 = OK	1 = Under
4	Overload Condition	0 = OK	1 = Under
5	Entered Tare Condition	0 = NO	1 = YES
6	Manual Tare Condition	0 = NO	1 = YES
7	Gross Center of Zero	0 = Out of Center of Zero	1 = Center of Zero
8	Display Mode	0 = Net	1 = Gross
9	Current Units	0 = Primary	1 = Other
10	Scale Error	0 = Error	1 = OK
11	Accumulator Weight polarity	0 = Positive	1 = Negative
12 - 31	Future Use		

Table 11. Scale Status

Onboard Digital I/O Status

Bit	Description	Bit Status	
0	Digital I/O Bit	0 = Off	1 = On
1			
2			
3			
4-31	Future Use		

Table 12. Onboard Digital I/O Status

Diagnostic Flags

Bit	Description	Bit Status	
0	Power Supply	0 = No Error	1 = Error
1	Four Channel Board Connect	0 = No Error	1 = Error
2	Excitation	0 = No Error	1 = Error
3	Cell Connection	0 = No Error	1 = Error
4	Zero Reference	0 = No Error	1 = Error
5	Cell Overload	0 = No Error	1 = Error
6	Drift	0 = No Error	1 = Error
7	Cell Underload	0 = No Error	1 = Error
8	Noise	0 = No Error	1 = Error
9	Unbalanced	0 = No Error	1 = Error
10-30	Unused		
31	Heartbeat – delay of 500 ms between Off & On	0 = Off	1 = On

Table 13. Diagnostic Flags



NOTE: The scale error bit is always set to 0 unless one of the errors occurs. At that time, the error bit is set to 1 until the error is cleared.

Result of Last Command Processed

After a command is sent and processed, the fieldbus returns one of the results below:

Value	Description
0	Command successfully performed.
1	Not a valid command.
2	General error – Trying to Tare or zero while scale is in motion.
3	Setpoint number does not exist – When trying to read or write to a setpoint but the setpoint does not exist.
4	Setpoint Kind is OFF – When trying to read or write to a setpoint but that setpoint is not configured.
5	Setpoint not enabled – When trying to read or write to a setpoint but the setpoint is not Enabled.
6	Invalid I/O – When trying to set an I/O on or off and it is not configured as an output.
7	Not in Setup mode – When trying to use Write Setup, Zero Calibration, Span Calibration, Point Calibration, Save Calibration, or Abort Calibration commands.
8	Wrong command – Non calibration command used during calibration.
9	Invalid units selection.
10	Invalid decimal selection.
11	Invalid format selection.
12	Calibration point out of range. (1 – 5)
13	Invalid capacity value.
14	Calibration not allowed for MRMI or serial scale.
15	Calibration weight out of range.
16	Accumulator error – accumulator is not enabled.
17	Audit trail not enabled, check to see that the audit jumper is in the correct location.
18	Invalid scale.
19	Invalid calibration type.

Table 14. Result of Last Command Processed

Command Status

Bytes	Description
0-3	Current command status result

Table 15. Command Status

Calibration Status

Value	Description
0	Calibration not started
1	Calibration acquisition in process
2	Calibration acquisition OK
3	Calibration error

Table 16. Calibration Status

7.0 Setpoint Process

7.1 Read Setpoint Value

1. Send command 11.
2. Set parameter 1 to setpoint number to be read (Setpoint 1, 2, 3, or 4).
 - System returns the setpoint value in Multi-Use Value 1 on PLC.



NOTE: The Multi-Use Value setpoint is returned as an IEEE-754 Floating Point Value.

7.2 Set a Setpoint Value

1. Send command 10.
2. Set parameter 1 to setpoint number to be set (Setpoint 1, 2, 3, or 4).
3. Set parameter 2 to setpoint value to be written.



NOTE: The parameter setpoint must be sent as an IEEE-754 Floating Point Value.

8.0 Calibration Process



NOTE: Calibration requires access to Setup Mode. Junction box only enters calibration mode with command 27 if Audit Jumper is in the ON position (See iQUBE³ Technical Manual).

Refer to [Table 5 on page 10](#) for parameter data information and [Table 6 on page 11](#) for descriptions of calibration commands. See [Table 16 on page 16](#) and [Table 15](#) and [Table 14 on page 16](#) for possible command responses during the calibration process.

Send Command 39 anytime to exit calibration and not save calibration and settings.

8.1 Standard Span Calibration Process

To complete the Standard Span Calibration process:

1. Set the following parameters:
 - Calibration Type ([Table 7 on page 12](#))
 - Capacity
 - Units ([Table 8 on page 12](#))
 - Format ([Table 9 on page 12](#))
2. Send command 27 to write values.
3. Remove all weight from the scale.
4. Send command 35 to perform a zero calibration.
5. Set the Calibration Weight parameter data value to the needed span weight.
6. Set the Calibration Point parameter data value to 1.
7. Place the specified calibration weight on the scale.
8. Send command 36 to perform a span calibration.
9. Send command 38 to save and exit calibration mode.

8.2 Multi-Point Calibration Process

To complete the Multi-Point Calibration process:

1. Set the following parameters (optional):
 - Calibration Type ([Table 7 on page 12](#))
 - Capacity
 - Units ([Table 8 on page 12](#))
 - Decimal
 - Format ([Table 9 on page 12](#))
 - Calibration Weight.
2. Send command 27 to write values.
3. Remove all weight from the scale.
4. Send command 35 to perform a zero calibration.
5. Set Calibration Point 1.
6. Set the calibration weight value to test weight.
7. Place the calibration weight on the scale.
8. Send command 37 to capture calibration point.
9. Repeat [Step 5](#) – [Step 8](#), changing the Calibration Point number to correspond to the current calibration step.
10. Send command 38 to save and exit calibration mode.

8.3 Section/Corner Match Calibration Process

To complete the Section/Corner Match Calibration Process:

1. Set the following parameters (optional):
 - Calibration Type ([Table 7 on page 12](#))
 - Capacity
 - Units ([Table 8 on page 12](#))
 - Decimal
 - Format ([Table 9 on page 12](#))
 - Calibration Weight
2. Send command 27 to write values.
3. Remove all weight from the scale.
4. Send command 52 to perform a Section/Corner match zero calibration.
5. Set Calibration Point to be calibrated.
6. Place the weight over the section or load cell.
7. Send Command 53 to capture calibration step. Calibration status displays ([Table 16 on page 16](#)).
8. Repeat [Step 5](#) – [Step 7](#), changing the Calibration section/point number to correspond to the current calibration step.
9. Send Command 54 to normalize the scale platform.
10. Send Command 38 to save and exit calibration mode.



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