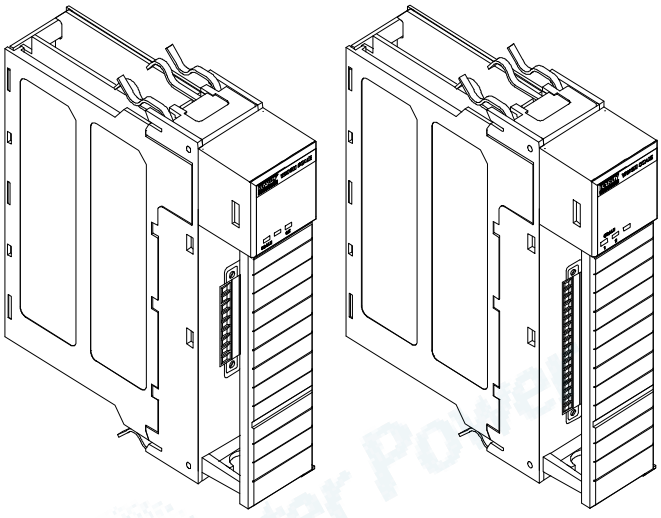
HI 1756-WS & HI 1756-2WS
WEIGH SCALE MODULE
Series A

OPERATION AND INSTALLATION MANUAL



Apter Power

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CHAPTER 1 - OVERVIEW

A BRIEF DESCRIPTION OF CHAPTER 1

This manual is designed for use by installers, operators, and service personnel. It provides specifications and procedures for linking, configuring, operating, maintaining, and troubleshooting the Hardy HI 1756-WS and HI 1756-2WS ControlLogix® I/O Weigh Scale Modules.

NOTE: *Control/Logix® is a registered trademark of the Rock-well Corporation.*

Both modules come with WAVERSAVER®, C2® button-triggered calibration, INTEGRATED TECHNICIAN (***IT***®) diagnostics, and ladder logic configurability.

NOTE: *WAVERSAVER®, C2®, INTEGRATED TECHNICIAN® are registered trademarks of Hardy Process Solutions.*

Before using the product, be sure you understand all cautions, warnings, and safety procedures stated or referenced in this manual. And, to get the best service from this product, follow the practices recommended in this manual.

Hardy Process Solutions appreciates your business. We welcome all corrections or suggestions for improve-ment of this manual. Should you not understand any information in this manual or experience any prob-lems with the product, please contact our Customer Support Department at:

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About This Manual

Chapter 1 - Introduces the instruments and provides an overview of the their capabilities

Chapter 2 - Provides a list of specifications

Chapter 3 - Contains instructions needed to install the HI 1756-WS and HI 1756-2WS (both standard and optional equipment) and the Remote Termination Assembly (-RTA)

HI 1756-WS WEIGH SCALE MODULE

Chapter 4 - Provides hardware configuration instructions, including dip switch and jumper settings.

Chapter 5 - Provides firmware/software setup procedures needed to operate and calibrate the instrument.

Chapter 6 - Provides calibration instructions.

Chapter 7 - Provides operating procedures.

Chapter 8 - Provides troubleshooting procedures.

Description

Both the HI 1756-WS and HI 1756-2WS Weigh Scale Modules are self-contained, microprocessor-based ControlLogix I/O modules with control inputs and outputs that plug into the backplane of an Allen-Bradley ControLogix® programmable controller and/or Remote Rack. The remote rack module connects to the local chassis via a ControlNet link.

NOTE: *The Allen-Bradley Control/Logix®manuals contain useful information about their products that is not provided in this manual. This manual assumes that users have a basic understanding of process control and can interpret ladder logic instructions as needed to generate the electronic signals that control their application(s).*

The HI 1756-WS Weigh Scale Module Series A is configured for single-channel operation while the HI 1756-2WS Weigh Scale Module Series A is configured for dual-channel operation. Both modules can be used for a wide variety of process weighing applications such as batching, blending, filling/dispensing, check weighing, force measurement, level by weight and weight rate monitoring.

The analog-to-digital converter in the weigh module controller updates fifty times per second and is capable of 8,388,608 counts of display resolution. This is enough to provide accurate weight measurement and control and to tolerate large “dead” loads or over sizing of load cells/sensors. To calibrate the module you can simply push “The Button” to effect a C2 electronic calibration. C2, Hard (Traditional calibration with weights) is also available for those not using Hardy C2 certified load sensors.

CHAPTER 2 - SPECIFICATIONS

A Brief Description of Chapter 2

Chapter 2 lists the specifications for the HI 1756-WS and HI 1756-2WS Weigh Scale Modules. Specifications are listed for the standard instrument and for optional equipment. The specifications listed are designed to assist in the installation, operation and troubleshooting of the instrument. All service personnel should be familiar with this section before attempting an installation or repair of this instrument.

Specifications for a Standard HI 1756-WS (-2WS) Weigh Scale Module

Channels

2 Channels

- Single Channel HI 1756-WS
- Dual Channel HI 1756-2WS

Conversion Rate

50 updates per second

Averages

1-255 User Selectable in single increments

Resolution

Internal: 1:8,388,608

Input

Up to eight (8) 350 ohm Full Wheatstone Bridge, Strain Gauge Load Sensors/Cells (5 volt excitation) on one vessel.

Non-Linearity

0.0015% of Full Scale

WAVERSAVER®

User Selectable

- 7.50 Hz
- 3.50 Hz
- 1.00 Hz (Default)
- 0.50 Hz
- 0.25 Hz

Excitation Monitor

Current less than +/- 10% expected

Common-Mode Rejection

110dB at or below 60 Hz

HI 1756-WS WEIGH SCALE MODULE

Common-Mode Voltage Range	2.5VDC maximum (with respect to earth ground)
Backplane Input Voltage	5 VDC and 24 VDC
Backplane Current Load	<1 Amp at 5 VDC 0.0125 Amps at 24 VDC (with 4-350 Ohm Load Cells
Backplane Power Load	< 5W at 5 VDC < .3W at 24 VDC with 4-350 Ohm Load Cells
C2 Calibration Input	Isolation from digital section 1000 VDC minimum.
Cable lengths	1000 feet maximum of C2 authorized cable 250 feet maximum of C2 authorized cable (Maximum of 4 load sensors) with IT Junction box.
Load Cell Excitation	5 VDC +/- 1.15 W maximum. Isolation from digital section 1000 VDC minimum
C2 Calibration Output	Isolation from digital section 1000 VDC minimum

Environmental Requirements

Temperature Coefficient	Less than 0.005% of full scale per degree C for Cal-LO and Cal-HI reference points
Operating Temperature Range	0^o C to 60^o C (32^o F to 140^o F)
Storage Temperature Range	-40^o C to 85^o C (-40^o F to 185^o F)
Humidity Range	0-90% (non-condensing)
Approvals	CE Approval UL, CUL (pending)
Digital Voltmeter	Accuracy +/- 2% of full scale Resolution