WEIGHSTATION

Gravimetric Fluid Handling Platform

Installation, Operating & Maintenance Instructions

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Contents

Precautions

READ this manual BEFORE operating or servicing this equipment.
FOLLOW these instructions carefully.
SAVE this manual for future reference.
DO NOT allow untrained personnel to operate, clean, inspect, service or tamper with this equipment.
ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.
Contact Parker for parts, information and service.

	**⚠ WARNING** DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.
	**⚠ CAUTION** OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.
	**⚠ WARNING** ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TEST AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.
	**⚠ WARNING** FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD, CONNECT TO PROPERLY GROUNDED OUTLET ONLY. DO NOT REMOVE THE GROUND PRONG.

Précautions

LISEZ ce manual AVANT de faire fonctionner ou d'entretenir cet équipment.
SUIVEZ attentivement ces instructions.
CONSERVEZ ce manuel pour future référence.
NE LAISSEZ PAS du personnel non qualifié utiliser, nettoyer, inspecter, entretenir, réparer ou manipuler cet équipement.
DÉBRANCHEZ TOUJOURS cet équipement de la source de courant avant de nettoyer ou d'exécuter l'entretien.
APPELEZ PARKER pour pièces détachées, renseignements et entretien.

	**⚠ ATTENTION**
	DÉBRANCHEZ TOUT COURANT DE CETTE UNITÉ AVANT DE FAIRE L'INSTALLATION, D'EFFECTUER L'ENTRETIEN, LE NETTOYAGE OU AVANT DE RETIRER LE FUSIBLE. NE PAS OBSERVER CES PRÉCAUTIONS RISQUERAIT DE CAUSER DES BLESSURES CORPORELLES OU/ET D'ENDOMMAGER L'ÉQUIPEMENT.
	**⚠ PRUDENCE**
	SOYEZ PRUDENT LORSQUE VOUS MANIPULEZ DES APPAREILS SENSIBLES À L'ÉLECTROSTATIQUE.
	**⚠ ATTENTION**
	AUTORISEZ SEULEMENT LE PERSONNEL QUALIFIÉ À ENTRETENIR CET ÉQUIPEMENT. SOYEZ PRUDENT LORSQUE DES VÉRIFICATIONS, TESTS ET AJUSTEMENTS DOIVENT ÊTRE EFFECTUÉS SOUS TENSION. NE PAS OBSERVER CES PRÉCAUTIONS RISQUERAIT DE CAUSER DES BLESSURES CORPORELEES.
	**⚠ ATTENTION**
	POUR ASSURER UNE PROTECTION CONTINUE CONTRE UNE DÉCHARGE ÉLECTRIQUE, BRANCHEZ UNIQUEMENT SUR UNE PRISE CORRECTEMENT RELIÉE Á LA TERRE. NE RETIREZ PAS LA FICHE DE TERRE.

Introduction

The WeighStation is a cost-effective platform for use in a wide variety of application where live weighing of a bag of fluid is desirable. The WeighStation has the capability of allowing the owner to interface with an of Parker's other laboratory and processing systems.

⚠ Please read the following instructions carefully!

Inspections: Refer to the separate unpacking document and remove the WeighStation and accessories carefully from the shipping container. Check the contents against the purchase order to verify that all parts are included and undamaged.

Please do the inspection now, even if the WeighStation is not used immediately. Many carriers must receive damage claims within seven days of deliver. Please regain all packing material so the unit may be shipped safely if necessary.

Customer Service: If assistance is required, please contact us at:

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Parker customer service personnel will be able to serve you more efficiently if you have the following information:

- Serial number and model name of the equipment
- Installation procedure being used
- Concise list of symptoms
- List of operating procedures and conditions in use when problem arose

Warranty

Country specific information can be found at: www.parker.com/termsandconditions

Standards

- EN 61326-1:2006, Class B
- EN 6100-3-2:2006
- EN 6100-3-3:1995 +A1:2001 +A2:2006
- EN 61010-1 Issued: 2001/03/01
- Conforms to UL 61010-1 Issued: 2004/07/12 Ed.2
- And is certified to: CAN/CSA-C22.2 No 61010-1 Ed.2

Installation & Start Up

Installation of the WeighStation must be carried out only by trained personnel in accordance with the relevant regulations and this operations manual.

Make sure that the technical specifications and input ratings of the WeighStation platform are observed. See “WeighStation Specifications”.

The WeighStation must be connected to a properly grounded power supply receptacle.

The WeighStation location must not block access to the power disconnect point for the power supply.

The protection provided by this equipment may be impaired if the WeighStation is used in a manner inconsistent with this manual or for purposes not specified by the manufacturer.

Start-up of the WeighStation must be carried out only by trained personnel in accordance with the relevant regulations and this operations manual.

Before start-up, a parameter setting procedure and/or a parameter review must be performed by supervisory personnel.

Safety Information

Before connecting the WeighStation to mains, make sure that the mains voltage corresponds to the voltage rating shown on the rear of the control console.

Opening the WeighStation electronics enclosure cover exposes live parts. Therefore, the cover must not be removed. If repair is required, return the WeighStation electronic enclosure to the factory.

If opening of the WeighStation electronics enclosure is inevitable, the system must first be disconnected from all voltage sources.

Make sure that the mains plug has been pulled out.

Repair or adjustment of an opened WeighStation electronic enclosure under voltage must be carried out only by a skilled person who is aware of the hazard involved.

Whenever it is likely that the protection has been impaired, the WeighStation must be made inoperative and secured against any unintended operation. The protection is likely to be impaired if, for example:

- The WeighStation shows visible damage
- The WeighStation fails to perform as intended
- The WeighStation has been in prolonged storage above 70ºC
- The WeighStation has undergone severe transport stresses

Before re-commissioning the WeighStation, a professional routine test according to the WeighStation IQ/OQ protocols must be performed.

WeighStation Specifications

General Specifications

Dimensions	Overall length: 29in (74 cm); Overall width: 29 in (74 cm); Overall height: 68.5 in (175 cm). Platform height: 7 in (18 cm) including 3.5 in OD locking casters. Max interior width: 25 in (63 cm); Bag holder from base: 45 in (114 cm)
Weight	250 lb (114 kg)
Power	110/120 VAC or 208/240 VAC, 50-60 Hz as wired.
Operating Range	4 - 40 ºC 100% humidity

System Component Specifications

Terminal	Mettler Toledo IND360 Harsh Terminal with LED display, IP66.
Load Cells	MTB Series 100 kg load cells, IP68
Capacity / Resolution	2 x 100 kg x 0.010 kg
Typical Max Media Bag Size	50 kg*
Communication	A) Analog 4-20 mA with discrete Tare via momentary contact closure. The cable has 4 conductors; black and red are used for the 4-20 mA output, and the green and white for the discrete Tare via momentary contact closure. B) Profibus C) RS-485 with DB9 connector SICS Level 0 command set. This is configured and ready to use with all Parker Bioscience Laboratory Systems: LabTec, ChemTec, PureTec, FilterTec, etc

*Do not fill above the vent filter to prevent filter from clogging

Application Overview

The WeighStation can be used for any Parker Bioscience system for dispensing, metering or filtration - both normal flow filtration (NFF) and tangential flow filtration (TFF). Simply hang the bioprocess container from the scale, connect the communication cable and the plumbing and it's ready to go.

Terminal Set Up

When purchased, the terminal will be fully configured, verified and tested by Parker. The calibration, as with all scales after they have been shipped, will need to be updated by the customer's meteorology department or other certified scale service firm.

The following is provided to return the system to Parker configuration should the settings change due to preventative maintenance, repair or other cause.

Settings

Procedure:

1) Power up the terminal.

2) Make only the changes listed. Leave all other values at their defaults.

3) After the self-test is complete, press and hold the PRINT key for 3 seconds to access the Configuration menu.

4) Navigate to the Setup Menu using the TARE and CLEAR keys as "up" and "down", the ZERO key as "move left" or "return" and the PRINT key as "enter"

5) Press PRINT

6) Starting with SCALE
   a) Under Type
      i) Set Approval to None

   b) Under Capacity and Increment
      i) Set Units to KG or G depending upon use
      ii) Set Capacity to 60 kg
      iii) Set Increment to 0.020 kg
      iv) Blank overcapacity to 99

   c) Return to Calibration later

   d) Under Zero
      i) Set Auto Zero to Off
         (1) Auto zero range(d) 0.5
         (2) Under zero blanking (d) 99
      ii) Range
         (1) Power up zero – use cal zero
         (2) Push button zero – enabled
         (3) Zero range (+) – 2
         (4) Zero range (-) 2

e) Under Tare
   i) Set Push Button Tare to Enabled
   ii) Preset tare - Enabled
   iii) Power Up tare - Enabled

f) Under Filter
   i) Weighing mode – Dynamic
   ii) Environment – standard
   iii) Limit frequency – 5
   iv) Notch Filter – Disabled

g) Under Stability
   i) Motion range – 0.5
   ii) Non-motion interval – 0.3s
   iii) Timeout – 3 seconds

7) APPLICATION
   a) Alibi memory
      i) Alibi memory – disabled
   b) Capacitor
      i) Capacitor 1
         (1) Source – None
         (2) Description
            (a) Blank
      ii) Capacitor 2
         (1) Source – None
         (2) Description
            (a) Blank
      iii) Capacitor 3
         (1) Source – None
         (2) Description
            (a) Blank
      iv) Capacitor 4
         (1) Source – None
         (2) Description
            (a) Blank
   c) Reset
      i) Reset
         (1) Start

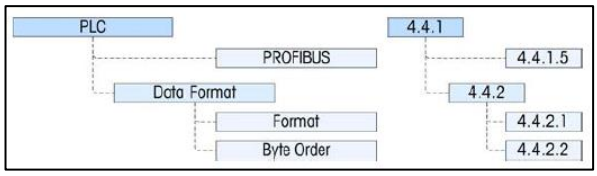
   d) Exit to Setup Menu

8) TERMINAL
   a) Device
      i) Model – IND360 Analog
      ii) Serial Number – *Device Specific*
      iii) Device Name – *Blank*
   b) Display
      i) Screen Save – 5
      ii) Backlight adjustment – 50
      iii) Data & Time – Enabled

c) Region
d) Language
e) Reset

9) COMMUNICATION
   a) Access Security
      i) All enabled
   b) Under Connections
      i) Set Com 1 to SICS
      ii) Set Com 2 to NONE
   c) Under Port
      i) Web server - 80
      ii) PC Application – 1026
      iii) E-print – 1025
   d) Under Industrial Ethernet
      i) Type – Ethernet/IP
      ii) Format – 2 block Format
      iii) Data OK mode – Standard
      iv) Byte Order – automatic
      v) Supervision – Enable
      vi) Mac
      vii) DHCP – Disabled
      viii) IP Address
      ix) Subnet Mask
      x) Gateway Address

The IND360 terminal automatically detects the presence of a PROFIBUS option card if one is installed, and adds the Profibus setup parameters to the PLC options block. To configure the terminal for PROFIBUS, enter Setup and advance to the Communications/PLC/PROFIBUS sub-block (See below).



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In this section, figures given in brackets (e.g. [0]) correspond to the parameter options available when F-codes are displayed by the terminal.

PROFIBUS Setup Sub-Block

The PLC Setup block lets you specify how the PROFIBUS interface is used. Several options are available to correspond with your system setup.

PROFIBUS Setup – F4.4.1

Provides access to the node address for the terminal. Note that the network baud rate is automatically determined by the terminal.

Node Address – F4.4.1.5

Each IND360 Terminal connected to the network represents one physical node. This address is determined by the system designer, then configured in the terminal by entering the appropriate number (1 to 125) in the Node Address menu.

Data Format Setup – F4.4.2

Provides access to the Format and Byte Order parameters.

Format – F4.4.2.1

The Format menu allows a data format to be selected from a list. Options are Division [0], Floating Point [1] and Integer [2] (the default).

Division – displays scale weight in display divisions. The PLC multiplies the display divisions by the increment size to calculate the weight in display units.

Floating Point – displays weight in floating point data format

Integer – display

Byte Order – F4.4.2.2

This parameter selects the order in which the data bytes and words will be presented in the PLC data format. The choices are **Byte Swap [0]** (the default), **Standard [1]**, **Word Swap [2]**, and **Double Word Swap [3].**

- **Word Swap –** Takes the IEE 754 single-precision floating point format and swaps the two words in the 32-bit double word. This format is compatible with RSLogix 5000 processors.
- **Byte Swap –** Makes the floating-point format compatible with S7 PROFIBUS.
- **Double Word Swap –** Makes the data format compatible Modicon Quantum PLC for Modbus TCP networks.
- **Standard –** Makes the data format compatible with PLC5.

Calibration of the Scale

Procedure:

1. Press PRINT for three seconds to enter the configuration menu.

2. Scroll to Calibrate and press PRINT
    a. At Set Zero, press PRINT
        i. Confirm that the scale is empty and press PRINT
        ii. Zero Capture is performed by the system
        iii. At Zero Capture OK, press PRINT

    b. Scroll down to Set Span and press PRINT
        i. Use the up/down/move left keys to input the load value (this does not have to be the max value but must be a minimum of 1000 divisions)
        ii. For the WeighStation use 20.0 kg or 20,000 g
        iii. Hang the load, get it stable and press PRINT. (At this time the 20 kg load is a 5 gal container of water with a loop for hanging attached. Check its weight on a master calibrated scale and adjust to as close to 20,000 g as possible.)
        iv. Capture span calibration is performed by the system
        v. At “Capture Span OK” press PRINT
        vi. Press the ZERO key twice to return to normal operations

    c. The calibration can now be checked using standard masses and repeated if necessary.

FAQ

Q: What is “Error 11” and how do I clear it?

A: Error 11 indicates that the requested command has failed. To clear the error, press the PRINT button. This occurs when TARE is attempted with a gross negative value or when ZERO is attempted outside the configured range.