

AUTOMATION PRODUCTS

Operator's Manual

MPN - 650 & 660 Series

Industrial Monitors

Rev. 1c, 4/04



**Scientific Technologies Inc.
Automation Products Group**

STI...Providing tailored solutions for measurement applications

Tel: 1/888/525-7300 • Fax: 1/435/753-7490 • www.automationsensors.com • E-mail: sales@automationsensors.com

AUTOMATION PRODUCTS

***STI...Providing tailored solutions
for measurement applications***



Scientific Technologies, Inc.

Automation Products Group

Tel: 1/888/525-7300

1/435/753-7300

Fax: 1/435/753-7490

24 hour fax back system: 1/916/431-6544

e-mail: sales@automationproducts.com

www.automationproducts.com

STI Automation Sensors Division

1025 West 1700 North

Logan, UT 84321

STI PSI-Tronix Technologies Division

3950 South K Street

Tulare, CA 93274-7155

STI Headquarters

6550 Dumbarton Circle

Fremont, CA 94555-3605

NASDAQ listing: STIZ

TABLE of CONTENTS

Description 2

Technical Specifications 2

Installation 3

Electrical Connection 4

Input Adjustments and Programming 5-6

Output Explanations 7

1. Description

The MPN-650 and 660 are industrial monitors. Both models have a programmable 4-digit display for use with a 4-20mA control signal. The MPN-660 also incorporates an alarm beacon and horn warning system. The MPN's alarm system can accept inputs from either discrete devices, such as a float switch or relay, or from an NPN transistor. This makes the MPN-660 an ideal monitor/alarm for use with STI's IRU-2125 ultrasonic sensor.

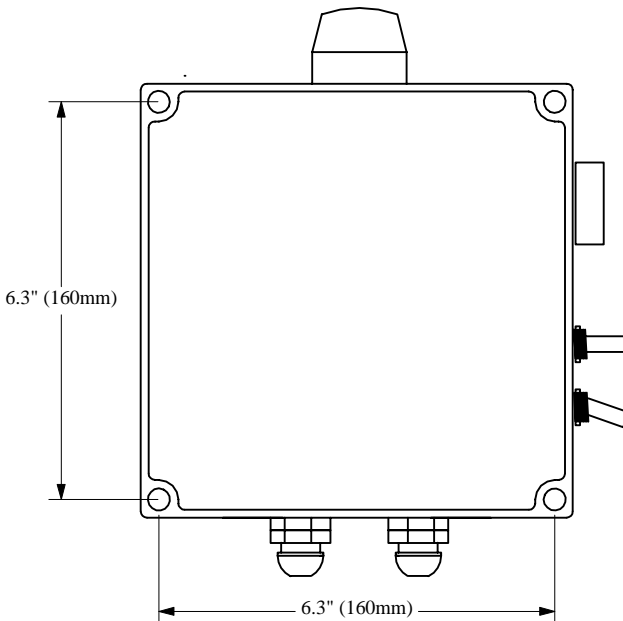
2. Technical Specifications

Voltage:	120 VAC, 50/60 Hz, 7 watts max.
Enclosure:	7" x 7" x 3" Polycarbonate MPN-660: NEMA 3R MPN-650: NEMA 4X
Alarm Horn:	103 db at 3 feet. (660 model only)
Display:	4-digit 7-segment LED
Inputs:	1 - 4-20mA (for use with display only) 2 - Discrete/NPN (660 model only)
Outputs:	Alarm Beacon and Horn (660 model only)

3. Installation

The MPN-650 & 660 are easy install. The enclosure is mounted using the four 3/16" (4.75mm) mounting holes located directly under the cover attachment points. The mounting holes are spaced 6.3" (160mm) on center.

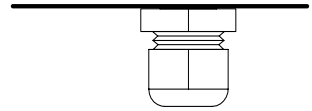
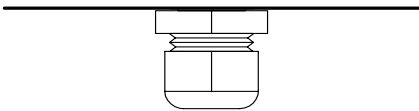
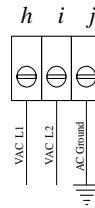
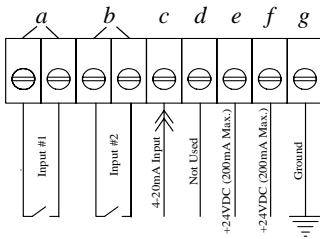
The MPN-660 should be mounted in an area where the alarm beacon is clearly visible and where the horn will be easy to hear.



4. Electrical Connection

All electrical connections on the MPN-650 are made using the terminal strips CN1 and CN2. All wires should enter the MPN through the strain reliefs. After the wiring has been properly connected, the strain reliefs should be tightened to help secure the wiring and seal the unit.

See the wiring diagrams below for terminal wiring and information.



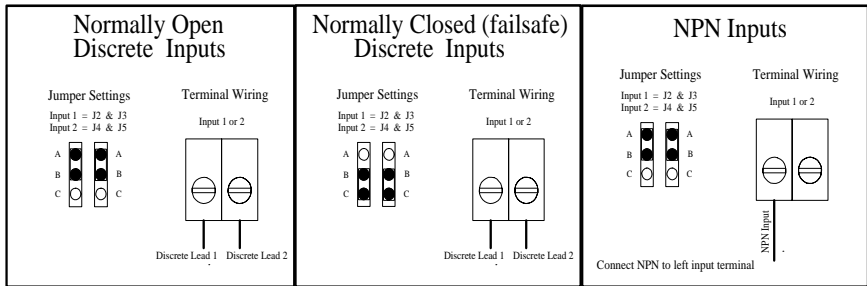
- a-b. Discrete/NPN Alarm Inputs 1 & 2. MPN-660 only. See Input Adjustments and Programming section for details.
- c. 4-20mA Input. The 4-20mA Input is used for display control only.
Note: The 4-20mA device must share a common ground with the MPN unit.
- d. No Connection
- e-f. +24 Volts DC power. These terminals can be used as voltage source for a 24 volt device. The maximum combined current draw from these terminals must not exceed 200mA.
- g. DC Ground Terminal. Can be used as a ground reference for the inputs.
- h. AC 120 Volt Line
- i. AC 120 Volts Neutral
- j. AC Ground Terminal

5. Input Adjustments and Programming

Discrete/NPN Inputs Setup.

The MPN-660 inputs can be jumpered to accept discrete contacts (such as a float switch) or NPN transistor inputs. Each input can be jumpered for a “normally open” or “normally closed” or “NPN” condition. The factory default jumper settings will be “normally open”. To change the configuration of Input 1 or 2, set the jumpers J2 & J3 or J4 & J5 to the desired setting as shown below and on the circuit board nomenclature.

Note: NPN inputs use terminals 1 and/or terminal 3



4-20mA Input Setup

The MPN accepts a 4-20mA input to control the 4 digit display. **The 4-20mA input does not have alarm control capabilities, and is only used for controlling the display.** To set the value of the 4mA and 20mA endpoints, follow the steps below.

1. The decimal point position will determine the resolution of the display. To set the decimal point position, press the UP and DN buttons simultaneously to cycle the decimal point to the desired position.
2. To assign the 4mA or 20mA endpoint values, press and hold down either the 4mA or 20mA button with either the UP or DN button until the desired value is displayed. Once the endpoint have been set, the MPN will use linear interpolation to determine what value is displayed.

NOTE: The 4mA and 20mA endpoints can be set to negative numbers. This allows the MPN to be used with a device that has an unscalable 4-20mA output. The display will flash when a negative number is displayed.

6. Output Explanations

The MPN-660 uses a warning beacon and horn alarm outputs with the following three conditions:

- If there is an alarm condition on input 1, then the horn and light will activate continuously.
- If there is an alarm condition on input 2, then the horn and light will activate in an on/off manner with 1/2 second intervals (50% duty cycle).
- If there is an alarm condition on input 1 and input 2, then the horn and light will activate in an on/off manner with 1/4 second intervals (50% duty cycle).

To silence the horn after an alarm condition has occurred, the user must momentarily toggle the function switch into the “silence” position. The warning light will stay active until the alarm condition is resolved.

To test the MPN-660’s horn and beacon, toggle the function switch into the “test” position. The horn and light will stay active as long as the switch is held in the test position.



A Single Source for Automation Products

After introducing its first infrared solid-state proximity photoelectric control more than 28 years ago, Scientific Technologies Inc. has grown to be a leading supplier of automation sensors in the United States and is recognized throughout the world for its superior products and services.

STI products help people be more productive and safe in automated factories that produce a variety of complex and important products such as automobiles, computers, electronics, and food and beverages. STI Automation Products include ultrasonic sensors, infrared sensors, capacitance sensors, float switches, pressure transducers and magnetostrictive sensors. In addition to STI's Automation Products, we offer a range of machine safeguarding products including safety light curtains, interlocks, relays and mats.

Our Mission Statement

“Providing tailored solutions for measurement applications.”

STI is Proud to Supply Automation Sensors to Customers Around the Globe. They Include:

Abbott Labs	Goodyear	Pennsylvania Turnpike
Accu Sort Systems	Honda	Commission
Amtech Division of Intermec	Hormel	Sandvik Conveyor
Baxter	Hewlett-Packard	Schlumberger
Beckman	IBM	Seagate
Becton Dickinson	Intel	Texas Instruments
BMW	Kansas Turnpike	3M
Boeing	Kodak	Tokyo Electron
Cincinnati Milicron	LAM Research	Toyota
Dayton Tire	Lockheed Martin IMS	Trane
FedEx	Maine Turnpike	Transcore
Ford	MFS Network Tech	TRW
General Motors	Michelin	UPS
Gillette	Milliken	US Postal Service
Golden Gate Bridge	Motorola	Weyerhaeuser
	Nordson Corporation	Whirlpool

AUTOMATION PRODUCTS

Operator's Manual



**Scientific Technologies Inc.
Automation Products Group**

STI...Providing tailored solutions for measurement applications

Tel: 1/888/525-7300 • Fax: 1/435/753-7490 • www.automationsensors.com • E-mail: sales@automationsensors.com