3900 SERIES

atc Digitec Division

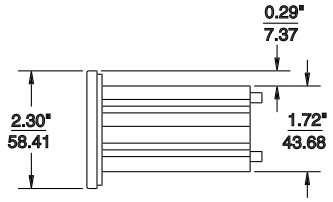
Intelligent High Speed, High Resolution
Four Channel Analog Inputs Panel Meters

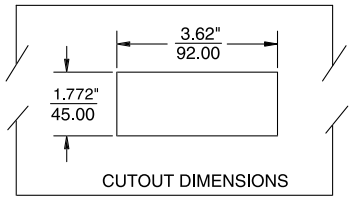


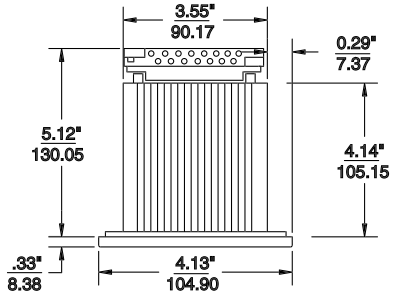
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DIMENSIONS

INCHES
MILLIMETERS







Standard Screw Terminal

STANDARD FEATURES

- **6-Digit .56" Red LED display**
- **4/sec. Update Rate/Channel**
- **Tare gross/net operation**
- **Dual scale setup (English/Metric)**
- **Math channel**
- **1/8 DIN extruded aluminum case**
- **NEMA 4X rated front**
- **No calculation scaling**
- **Calibrated load scaling**
- **User programmable keys and remote inputs**
- **Relay for alarm**
- **Scan Mode (Selectable Scanning)**
- **Up to 4 Relay Outputs**

3924 ADDITIONAL FEATURES

- **Four (4) input channels and fifth math channel**
- **Independent setup and scaling for all 5 channels**

APPLICATIONS

- **Strain Gage, Pressure Transducer, and Transmitter Display**
- **Leak Testing**
- **Peak/Stress Testing**
- **Pump/Compressor Monitor**
- **Bottle Filling/Weighing**
- **Production Test Monitoring**



STANDARD TERMINAL
30-Pin Double Sided
Screw Terminal (X Option)

GENERAL DESCRIPTION

The 3924 series digital panel meters are the most versatile and powerful meters on the market. The meter's 6 digit display, high speed measurement (4/sec.) update rate makes this the perfect choice for those most demanding applications. The 3900 also includes 4 assignable front keys, 2 assignable remote inputs and a variety of menu lockout features.

The 3924 offers four input channels with a fifth channel for mathematical calculations. Standard formula includes SUM and AVG. A complete math pack is in the 3924 firmware. Please contact ATC for implementing your specific equation.

Options include 3 form C relays, 4 analog sample and hold outputs. RS232 bidirectional communication, excitation supplies and screw terminal connectors.

STANDARD FEATURES

3 TYPES OF CALIBRATION

USER - calibration allows the entry of the low and high input values and the corresponding low and high display engineering values.

LOAD - calibration allows setup via known input values. Simply apply the low input and set its corresponding display value, then apply the high input and set its value. The low and high values can be programmed at different times and then enabled.

PROGRAM MENU STEPS LOCKOUT

The user can program the majority of the menu steps to not be accessible. This simplifies the programming of the meter allowing only necessary menus to be displayed in the SETUP mode. The meter can initially be configured to the desired setup, and then the user can lockout all the unnecessary menu steps.

AUTOTARE

This function allows the user to set the selected display/input to zero. It can be performed via a front panel key or remote input. Setup is available to switch the display from net to gross.

NET/GROSS

The net value or the gross value can be displayed via a front panel key or remote input. Alarm limits, analog out or peak values may be assigned to the net or gross values.

MATH CHANNEL

The 3924 series comes with an extra channel that is a non input channel. This can be used to duplicate an input channel for completely new scaling and alarm setups. The 3924 can be used to perform SUM and AVG. MATH functions. (Consult ATC for your special equations)

SECOND SCALE

This function allows the user to set a second scaling to the input. The input will then be displayed in two engineering units (typically for English/Metric displays). Scale2 is setup by entering the input low and high values and corresponding display values.

PEAK 1 AND PEAK 2

Peak 1 and peak 2 are both assignable to capture the maximum or minimum display value. They are assignable to any channel and the net or gross value. It can be reset through a front panel key or remote input.

PROGRAMMABLE LOCKOUT CODE & PASSWORD

A 2 digit access code for set-up is programmable. Setup can also be protected via a remote input. This provides protection against tampering of meter setup.

DEFAULT

The 3924 series allows the meter to be reset to the factory setup. This function allows easy reset to factory setup program.

ALARMS

Each meter is standard with 4 programmable alarms that control the front panel LED status and the one standard relay and optional 3 relay outputs.

Each alarm is:

- Assignable to any channel
- Programmable for high or low limit
- Programmable setpoint value
- Programmable hysteresis for complete display range
- Programmable for latching
- Programmable to Flash Display on alarm
- Alarm #1 is programmable for fail safe operation for all the alarms. (Fail safe operation allows the relay to de-energize on loss of power.

NON-VOLATILE MEMORY

All setup data entered by the user is stored in a non-volatile memory. No batteries needed and no need to re-program the meter after power down.

RELAY OUTPUT

1 Form A relay 240 VAC @ 1A, is provided standard for use as an alarm output or shunt cal relay.

DISPLAY

6 Digit .56" Red LED display for readings of -19999 to 999999 with selectable decimal points.

INPUT CARD

Process inputs of plus and minus inputs of 30mV, 100mV, 200mV, 2V and 10V are programmable inputs. The 20mA input is solder selectable on main board.

DISPLAY UPDATE

- Scan Mode - 1 channel per sec.
- Normal Mode - 4 updates per sec.

EXCITATION (OPTIONAL)

Option board: 10VDC @ 280mA, 24VDC @ 150mA.

SETUP MODE KEY FUNCTIONS:



SELECT Key - Moves decimal point location, selects the choice of the functions within the current menu or allows the selection of the digit to be changed.

UP Arrow Key - Increases the current value of the flashing digit by one unit per press.

DOWN Arrow Key - Decreases the current value of the flashing digit by one unit per press.

EXIT Key - Returns you to RUN mode when at main menu or returns you to main menu prompt when in programming menu.

ENTER KEY - Enters selected main program branch. Moves you down in the program menus. Enters selected choice to memory.

The F1-F4 front panel run-time keys can be programmed for any of the following:

- ALARM 1 View and Set
- ALARM 2 View and Set
- ALARM 3 View and Set
- ALARM 4 View and Set
- Channel 1 Tare/Auto zero
- Channel 2 Tare/Auto zero
- Channel 3 Tare/Auto zero
- Channel 1 Display
- Peak 1 display
- Lock out
- Channel 1 display
- Channel 2 display
- Channel 3 display
- Channel 4 display
- Channel 5 display
- Scale 2
- Decimal point selection
- Channel 2 Display
- Channel 3 Display
- Channel 4 Display
- Channel 5 Display
- Reset
- Scale 2 select
- Net / Gross select
- Shunt cal display / calibration
- Peak 2 display
- Peak 1
- Peak 2
- Reset
- Net/gross
- Alarm disable
- Hold

OPTIONS

C 3 each form C (single pole double throw) relays rated at 5 amp @ 240VAC, 5 amps @ 30VDC.

T RS232 Communication @ 9600 baud..

P Excitation output voltage supplies (jumper selectable) 10VDC @ 280mA, 24VDC @150mA.

X Solder terminal connectors

- 1 required if no option board installed, 2 if option C, H, P or Y installed

F Factory scaling calibration (user provides input range and display range.)

H 16 bit 4 channel sample and hold analog outputs
*Includes Option “P” Excitation

SPECIFICATIONS

	4-20 mA +/-	30 mV +/-	100 mV +/-	200 mV +/-	2V +/-	10 V
Accuracy	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Zero Drift	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Span Drift	10 ppm/°C	10 ppm/°C	10 ppm/°C	10 ppm/°C	10 ppm/°C	10 ppm/°C
Input Impedance	50 Ohms	10 Mohm	10 Mohm	10 Mohm	10 Mohm	10 Mohm
4 1/2 Digit Resolution	1 uA	1 uV	10 uV	10uV	100 uV	1 mV
Overrange Capability, minimum	10%	10%	10%	10%	10%	10%
Normal Mode Rejection Ratio	63bB					
Common Mode Rejection Ratio	130 dB					
Response Time	4 / sec					
Analog Output	3 / sec					
Relay Output	3 / sec					
Internal Resolution	22 bits					
Conversion Time	52 ms					
Digital Filter	60 Hz					
Warm Up Time	15 minutes					
Operating Temp Range	-20°C to 60°C					
Storage Temp Range	-20°C to 85°C					
Humidity	to 95%, non-condensing					
AC Supply Voltage	115 VAC / 230 VAC					
Power Consumption	15 Watts maximum					
Isolation						
Signal Input to Earth Ground:	Safety rated to 450 Vrms, 2200 Vp high voltage test					
Option board to Earth Ground:	Safety rated to 450 Vrms, 2200 Vp high voltage test					
Option board to Signal Input:	400 Vp					
Power to Earth Ground:	Safety rated to 500 Vrms, 4000 Vp high voltage test					
Weight	.84 lbs.					

ORDERING TABLE

Four Channel Model

Model Number:

3924 Four channel • Scan Mode • 1/8 DIN • 6 digit LED • NEMA 4X
• Fifth (5th) math channel

3924 Input board for four channel
(programmable ±30mv, 100mV, 200mV, 2V, 10V, 20mA)

Output Options:

- **C** 3 relays (Form C for Alarms)
- **CH** Combination of Option C and Option H
- **CP** Combination of Option C and Option P
- **F** Factory Scaling (provide input range, display range)
- **H** 16 bit 4 analog sample and hold outputs (0-20mA, 0-10VDC) - includes Option P)
- **P** Excitation supply (10VDC@280mA, 24VDC @ 150mA)
- **T** RS232 Communication

***Option "T" and "U" not available together**

3924 - C is a four input meter with 3 relays (4 total).