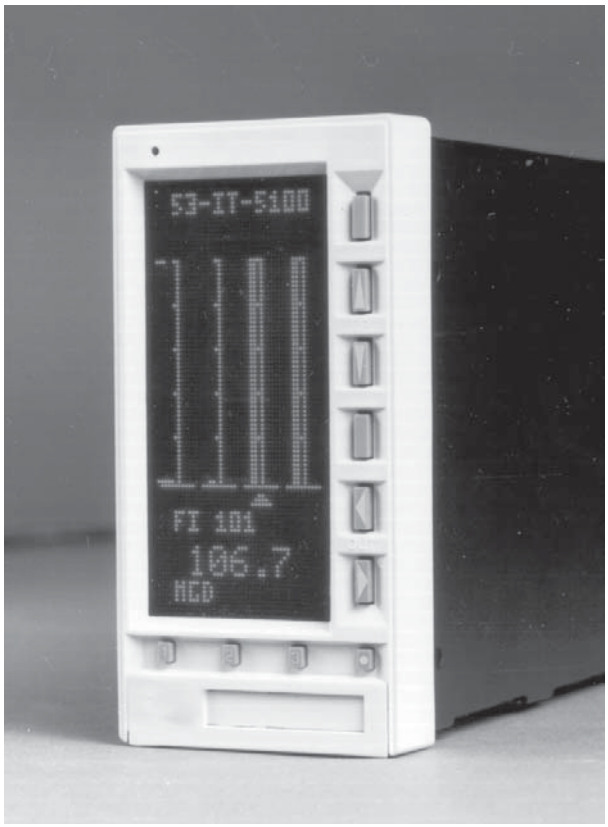
MicroMod AUTOMATION

Application-smart control solutions

Micro-DCI™ 4 Channel Indicator Totalizers
Series 53IT5100

- Four Channels of Process Variable Bargraph Indication
- Four Channels of Integration and Digital Totalization
- An Alarm/Annunciator Summary Intuitive Operator Interface
- Standard RS-485 Data Link
- Built in 24 Vdc 80 mA. Transmitter Power Supply



53IT5100
Micro-DCI™ 4 Channel Indicator Totalizers

Specification Sheet
S-DCI-53IT5100_1

53IT5100 INDICATOR/TOTALIZER

The 53IT5100 Indicator / Totalizer provides up to four channels of process variable indication on one 1/2 DIN instrument faceplate. It has a high visibility dot matrix display that permits process variable indication and totalization values to be displayed in a clear and concise manner.

The cover picture is the standard format, 53IT5100 four channel display. The process variable inputs are displayed in bargraph format, while selected input is digially repeated. The instrument's six displays are sequentially organized and can be paged by using the 1 and 2 pushbuttons along the bottom of the display. A ten digit decimal readout complements the process variable bargraph indication. Each channel of the 53IT5100 has the ability to show individual tagnames, input range, and user specified engineering units. Each of the four input channels has full alarm capabilities.

Each Channel Has an Associated Integrator Circuit and Totalizer

Figure No. 1 is a four channel integrator / totalizer display. The display has individual, user selectable tagnames and engineering units configurable to best represent the individual process. The digital totalizing of the unit has a resolution of a 10 digit floating point number. This allows larger, more accurate totals of the process.

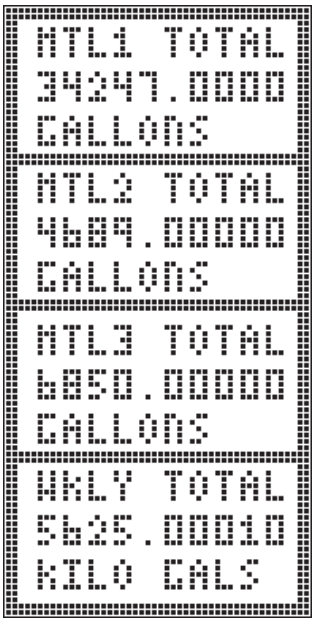


Figure No. 1: Four Channel Integrator/Totalizer Function with (10) digits of Decimal Resolution

TWO CHANNELS OF INDICATION

Figure No. 2 is one of the two channel indicator displays available in the unit. Two channels of indication allow the end user to display only the two channels that are critical to the process. This allows an uncluttered presentation of information showing only two points of indication.

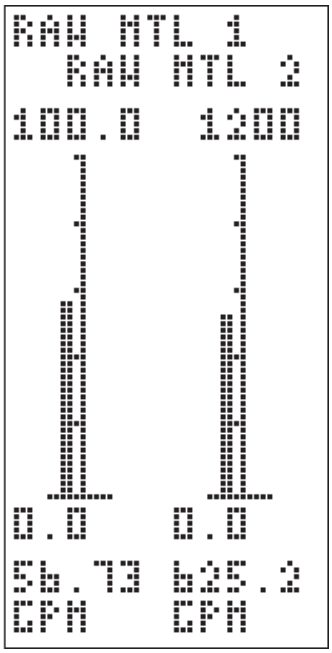


Figure No. 2:
Two Channel Process Variable Bargraph Indication

INPUT / OUTPUT

The 53IT5100 can accept four analog inputs. Each input channel is able to receive any one of the four following process variable signals:

- 0 - 20 ma.
- 0 - 5 volts
- 1 - 5 volts
- 4 - 20 ma.

Each channel has selectable square root extraction capabilities and the unit can retransmit any analog input to the analog output provided.

OPERATOR INTERFACE

The 53IT5100 Indicator / Totalizers dot matrix display provides unequaled presentation of information to the user in a stand alone instrument. The combination of displays offered and the front panel interface provides a broad range of operator interaction, far beyond the capabilities of traditional panel mounted units.

ALARM SUMMARY

The alarm summary screen displays at a glance the status of the alarms for the four analog inputs and the two contact inputs provided. The legend at the top of the display identifies the alarm group. The current status of up to four process variables and two contact inputs is shown directly below it. Each of the four analog inputs has an independent programmable alarm function based on the process variable exceeding predescribed limits as outlined below.
PA = Process Alarm, PL = Process Limit :

0 - PA1 = HI Alarm when PV > PL1
PA2 = LO Alarm when PV < PL2
1 - No Alarms
2 - PA1 = HI Alarm only
3 - PA2 = LO Alarm only
4 - PA1 = HI Alarm when PV > PL1
PA2 = HI-HI Alarm when PV > PL2
5 - PA1 = LO Alarm when PV < PL1
PA2 = LO-LO Alarm when PV < PL1

When a process variable becomes abnormally high or low, or when one of the status contact inputs changes state a flashing "ALARM" message appears at the top of the current display. Incoming alarms can be acknowledged by pressing the ● pushbutton on the faceplate stopping the "ALARM" message. If a process variable ALARM condition continues it is shown by a flashing bargraph display. When the process variable returns to its normal range the bargraph stops flashing. Two Contact outputs are provided which can report ALARM conditions to external devices (See Figure No. 3).

COMMUNICATIONS

The 53IT5100 includes a standard RS-485 communications port. This port has connections directly on the rear terminal of the unit. The unit can be linked directly to a Micro-PWC workstation and can co-exist on a multi drop datalink with other Micro-DCI instruments. Individually addressable, up to 32 instruments can communicate at speeds up to 28,800 bits per second.

The 53IT5100 has a standard RS-232 communications port. This port is accessible from the front of the instrument. All internal functions of the 53IT5100 are accessible through either of the two input ports.

The 53IT5100 has the features that your process demands contained in a Compact 1/2 DIN size case (72 x 144 mm) and only 327 mm deep. Four channels of indication, four channels of totalizing, 6 Points of alarm status, six different types of alarm configurations. DataLink communications, two power input capabilities (120/240 Vac - 24Vdc) two contact inputs, two alarm outputs, 100 msec scan rates, analog retransmission, an industry leading high visibility plasma gas display.

No other indicator offers plant operators the information and display flexibility found in the Model 53IT5100 Indicator / Totalizer.

Engineering Specifications

OPERATING CHARACTERISTICS

Power Requirements:
- 21-28 VDC
- 120 VAC +/- 10% @ 50-60 Hz
- 220/240 VAC +/- 10% @ 50-60 Hz

Power Consumption:
AC operation: 15 Watts max

Internal Power Supply

Available Power Output for Transmitters:
24-26 Vdc, 80 ma, short circuit protected
Output Ripple: 200 mV p-p maximum

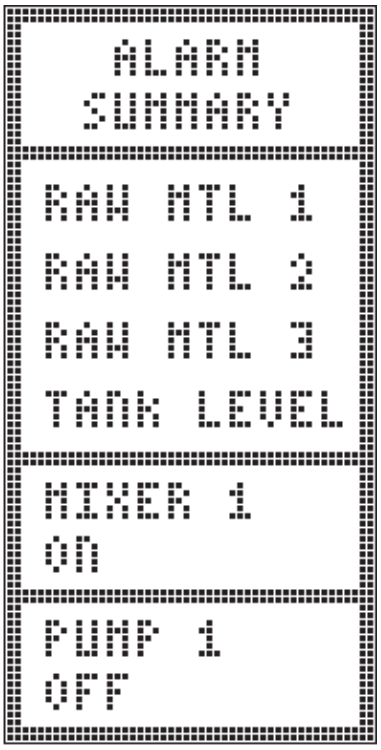


Figure No. 3: Six Point Alarm Annunciator Display

ENVIRONMENTAL CHARACTERISTICS

Enclosed temperature controlled locations
(class A and B per ISA S71.01 1985)

Ambient Temperature Limits: 4 to 52°C
Relative Humidity Limits: 10 to 90% maximum
Temp. Effect on Accuracy: +/- 0.28% per 28° from reference temperature of 25°C.
Enclosure Classification: NEMA type 1

PHYSICAL CHARACTERISTICS

Case:	Steel
Finish:	Baked enamel, Lt. Gray RAL 9002
Circuit Boards:	Glass epoxy
Bezel:	ULTEM 1000 UL-94
Dimensions:	1/2 DIN case (72 x 144 mm)

Electrical Component:

Rear of Case:	Compression type
Front Panel:	N/A
Display:	96 x 48 Pixel
Push Buttons:	10 (Tactile membrane type switches)

Analog Inputs

(All analog inputs are referenced to signal common.)
Quantity: 4 Standard
Signal Range: 0-5 or 1-5 V linear or square root
Input Impedance: 1 megohm minimum for voltage inputs; value of ranging resistor for current signals.
Measurement Accuracy: +/- 0.1% of span

Contact Inputs

Quantity: 2
Type: Discrete inputs internally powered with 4 volts @ 2 mA dc maximum (contact inputs are referenced to power com mon.)
Permissible Contact Resistance:
100 ohm maximum
Open/Close Contact Duration:
for open recognition: 0.05 s minimum
for close recognition: 0.05 s minimum

Contact Recognition Level

Closed: 1 V dc max or less than 100 ohms
Open: 4 V dc to 15 V dc or 10 mA max

OUTPUT SIGNALS

(All Analog Output signals are referenced to power common.)

Quantity:	1 Standard
Signal Range:	0-21.84mA dc (4-20 mA dc typically)
Load Resistance:	0-640 ohms for dc powered units,0-900 ohms for ac powered units.
Accuracy:	+/- 0.2% of span

(Current output is updated every 0.1 seconds. The output slew rate is 40 mA / Sec.

Discrete Outputs

Quantity:	2
Type:	Unpowered discrete solid state output.
Configuration:	Single pole single throw, N.O., or N.C. references to power common.
Voltage:	30 V dc max.
Current:	50 mA dc max.

MICROPROCESSOR SAMPLING & UPDATE

Program scan rate: 100 ms.
Input Signal Sampling Rate

Analog:	50 ms for all inputs
Contact:	50 ms for all inputs
Display Update:	100 ms.

COMMUNICATIONS

Standard MICRO-DCI™ data link

Type: RS422/485, four wire, asynchronous
Speed: Selectable - all standard baud rates between 300 and 9600; plus 14,400 and 28,800
Mode: Binary

Model Number Designation

Model Number 53IT51 __ __ A 2 1 A B __
07 08 09 10 11 12 13 14

4-Channel Indicator Totalizer 53IT51

Power Requirement
AC 110/120, 220/240 VAC 50-60 HZ 1
DC (24 Vdc) 2

Functionality
Standard 1
Standard with Factory Configuration (Note 1) 2

Design Level ..... A

Enclosure Type
DIN 72 x 144mm Bezel 2

Rear Terminal Board
Standard Rear Terminal Board 1

Chassis
Standard Chassis ..... A

Safety Classification
Factory Mutual Class 1, Div. 2. ..... B

Conformal Coating
Not Required X
Required ..... A

Note 1: Configuration consists of entering tags, engineering units alarm limits, totalizer display step, rollover value, and other applicable parameters. If factory configuration is selected, the instrument configuration worksheet must be completed and sent in with the instrument order.

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