

MICRO-DCI™ Manual Loader 53ML5100B

- **Two Process Variable Inputs**
- **Two Manually Controller Current Outputs**
- **Multiple Display Formats**
- **Intuitive, High-Visibility Operator Interface**
- **Front-panel configuration & setup**
- **Built-in Transmitter Power Supply**
- **Password Security**
- **Direct replacement for 53ML5100A Manual Loader**
- **Compatible with existing installations**



The 53ML5100 features manual adjustment of two independent current outputs. The high visibility dot matrix display permits two process variables to be indicated in a clear and concise manner.

The 53ML5100 accepts two process inputs and provides manual control of two outputs. A built in 24Vdc transmitter power supply provides up to 80 mA.

Six standard displays allow the user to select the operation screens best suited to the installation. The display order is configurable for easy access to preferred presentation of process information. The displays include:

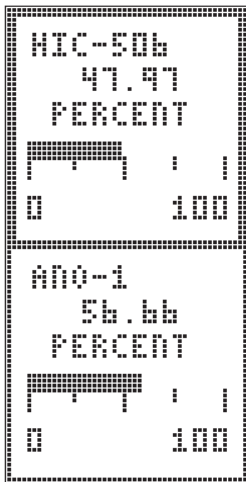
- Dual Channel Manual Loader
- Single Channel Manual Loader
- Manual Loader with Analog Input (2)
- Analog Input w/Manual Setpoint (2)

53ML5100B is a direct replacement for the 53ML5100A. The standard displays, alarm reporting and alarm acknowledgement are identical, making the transition seamless for operators, and it can be mounted in the same panel cutout.

The 53ML5100 provides manual adjustment of two independent current outputs, each independently configurable as a 0-20 mA or 4-20 mA signal and accepts two input process variable inputs with independently configurable current/voltage ranges (0-20 mA, 4-20mA, 0-5V, 1-5V), square root signal extraction and first order filtering.

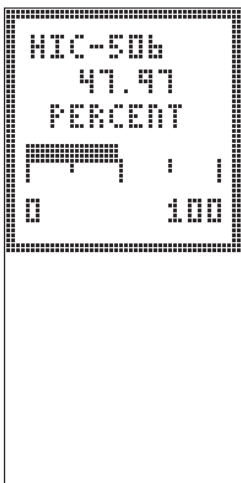
Six operator displays are used to monitor the two input process variables and the two manually controlled current outputs. The presentation order of the operator displays is configurable. Individual tagnames, input range, and user specified engineering units are displayed for each channel. Pushbuttons on the front panel allow access to all the datapoints in the instrument for quick, easy, low cost configuration.

The two channel horizontal bar graph display shows each output as a horizontal bar graph with tagname and digital readout of the output in percent. A thick border appears around the selected channel.



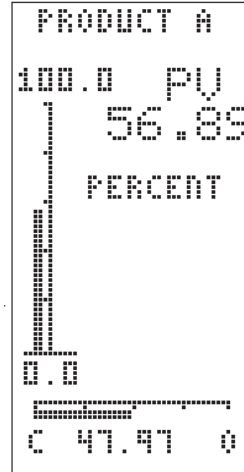
Two-Channel Horizontal Bargraph

The Single Channel Manual Loader Display shows the output as a horizontal bar graph with a tagname and digital readout in percent.



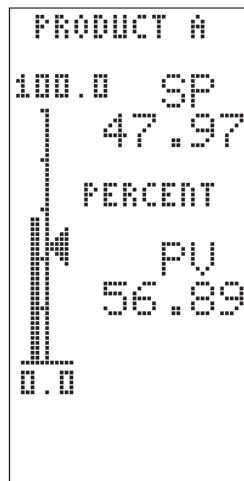
Single-Channel Horizontal Bargraph

The two Manual Loader with Analog Input Displays have a vertical bar graph for analog input (PV) indication and a horizontal bar graph for output manual control. The vertical bar graph has a numeric range (zero and span) and the horizontal axis has the forward /reverse valve indicators (C for close, O for open) with digital indication of the output value. The input tagname, digital readout and measurement units are also shown.



Manual Loader with Analog Input

Analog Input Indicator with Setpoint Displays have a vertical bar graph for process variable (PV) indication and a setpoint (SP) arrowhead. The vertical bar graph has a numeric range (zero and span). The input tagname, digital readout and measurement units are also shown.



Analog Input indicator with Setpoint

Engineering Specifications

OPERATING CHARACTERISTICS

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

Power Consumption:
 AC Operation: 15 VA max

Internal Power Supply
 Available Power Output for Transmitters:
 24-26V dc, 80 mA, short circuit protected

Output Ripple: 200 mV p-p maximum

ENVIRONMENTAL CHARACTERISTICS

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

Ambient Temperature Limits: 4 to 52°C (+40 to 125°F)

Relative Humidity Limits: 10 to 90% maximum

Temp. Effect on Accuracy: +/-0.28% per 28° (50°F) from reference temp. of 25°C (77°F)

Enclosure Classification: NEMA type 1/IEC 529 Type IP20

PHYSICAL CHARACTERISTICS

Case: Steel

Finish: Baked enamel, RAL 9002, Light Gray

Circuit Boards: Glass epoxy

Bezel: ULTEM 1000 (Polyetherimide Resin)
 Flamability-UL94 5V

Dimensions: DIN case
 2 27/32"W x 5 21/32"H x 12 26/32"L
 (72 mm W x 144 mm H x 305 mm L)

Panel Cutout: 2 11/16"W x 5 7/16"H (68 mm W x 138 mm H)

Weight: 5 lbs. (approximate)

Electrical Connections
 Rear-of-case compression-type terminal strips

Front Panel

Display: 48 x 96 pixels

Pushbuttons: 10 (membrane type switches)

MICROPROCESSOR SAMPLING & UPDATE

Program scan rate: 100 ms

Input & Output Signal Sampling Rate: 50 ms

Display Update: 100 ms

COMMUNICATIONS

Standard Micro-DCI DataLink for configuration

Type: RS-232

Speed: Selectable - all standard baud rates between 300 and 9600: plus 14,400 and 28,800

Mode: Binary

INPUT & OUTPUT SIGNALS

Analog Inputs

Quantity: 2

Signal Range: 0-5vdc or 1-5 vdc

Input Impedance: 1 megohm minimum for voltage inputs; value of ranging resistor for current signals.

Measurement Accuracy: +/-0.1% of span

(All analog inputs and outputs are referenced to signal common.)

Note: The standard rear terminal board has the appropriate resistors for mA inputs. If the input signal is voltage, the resistors should be removed.

Analog Outputs

Quantity: 2

Signal Range: 0 - 21.84 mA dc (4 - 20 mA dc typically)

Load Resistance: 0-750 ohms

Accuracy: +/- 0.2% of span
 (Current output is refreshed every 0.3 seconds.
 Output slew rate is 40 mA/sec)

	53ML51 01 - 06	— 07	— 08	A 09	2 10	1 11	A 12	B 13	A 14
Manual Loader	53ML51								
Power Requirement AC 110/120, 220/240 VAC 50-60HZ DC (24 Vdc)		1 2							
Functionality Standard Standard with Factory Configuration (Note 1)		1 2							
Design Level				B					
Enclosure Type DIN 72 x 144mm Bezel					2				
Rear Terminal Board Standard Rear Terminal Board						1			
Chassis Standard Chassis							A		
Safety Classification General Purpose FM Class 1, Div 2, Groups A,B,C,D								A B	
Conformal Coating Standard									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.

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

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