

Weight Indicator/Controller



FEATURES

- 1 million count resolution, 20 updates per second
- High resolution (16 Bit) analog output
- RS-422/485 communication port with ASCII, BLH Digi-System Plus network, or Modbus RTU protocol
- Expansion slot for A-B remote I/O, Modbus Plus, Profibus, or DeviceNet
- Rate-by-weight (mass flow) operation
- Up To 8 setpoint relay outputs
- Quick-cal set-up
- Dynamic digital process filtering
- Real time system & loop diagnostics

DESCRIPTION

LCp-200 Weight/Rate-By-Weight Controllers are high performance indicators with features and options focused on the requirements of process weighing applications with local setpoint control. They operate with all strain gage type load cells and interface easily with any PLC, DCS, or PC based supervisory control system. Engineering emphasis has been placed on simplicity, reliability, and expandability. Standard rate-by-weight operation and output provides precision mass flow control.

Eight relay outputs are available for local setpoint control, based upon set point values entered through the keypad, or downloaded serially from a host device. All relay configuration and logic parameters

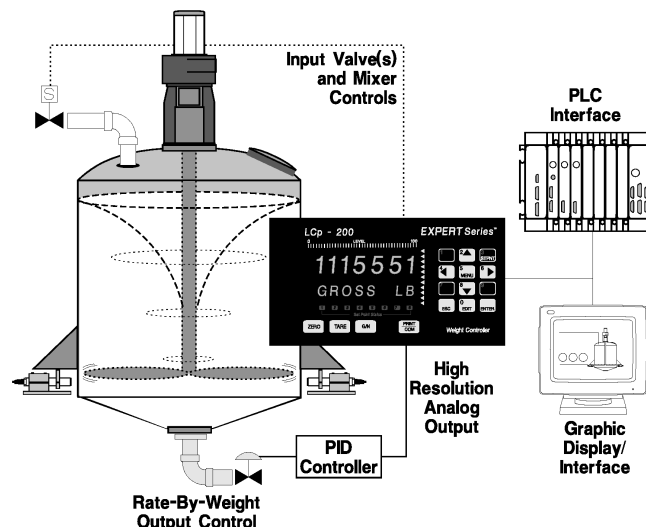
are selectable through the front panel keypad. Communication of weight, setpoint values, system status, and diagnostic information is accomplished using standard protocols such as ASCII and Modbus RTU, or special serial interfaces like DeviceNet, Allen-Bradley Remote I/O, Modbus Plus, and Profibus.

The LCp-200 Safe-Weigh® Software System encompasses over 50 years of BLH application expertise. Plug-n-Weigh® quick calibration and setup procedures save time, money, and even field service calls. On-line diagnostics continuously monitor system performance and alert service personnel to potential problems before they happen.

APPLICATIONS

- Weight and mass flow measurement with setpoint control
- Batch/blend/mix systems
- High value ingredient processing

CONFIGURATION



Setpoint Control and Communication Interfaces

Setpoint Availability

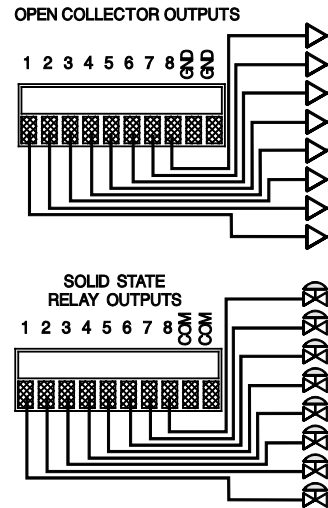
Precise setpoint control ensures accurate and repeatable batch process performance. Standard LCp-200 instruments have eight open collector DC setpoint output signals. Individual outputs can be configured for main (coarse) or dribble (fine) operation with in-flight and deadband (hysteresis) compensation for precision valve control. Polarity selection allows 'open above' or 'closed above' operation of each point. Tag names may be assigned for front panel or interface identification.

Optionally, eight solid state, triac type outputs can be ordered. Each triac output has the same configuration and parameter selections as the DC signals.

Communications and Interfacing

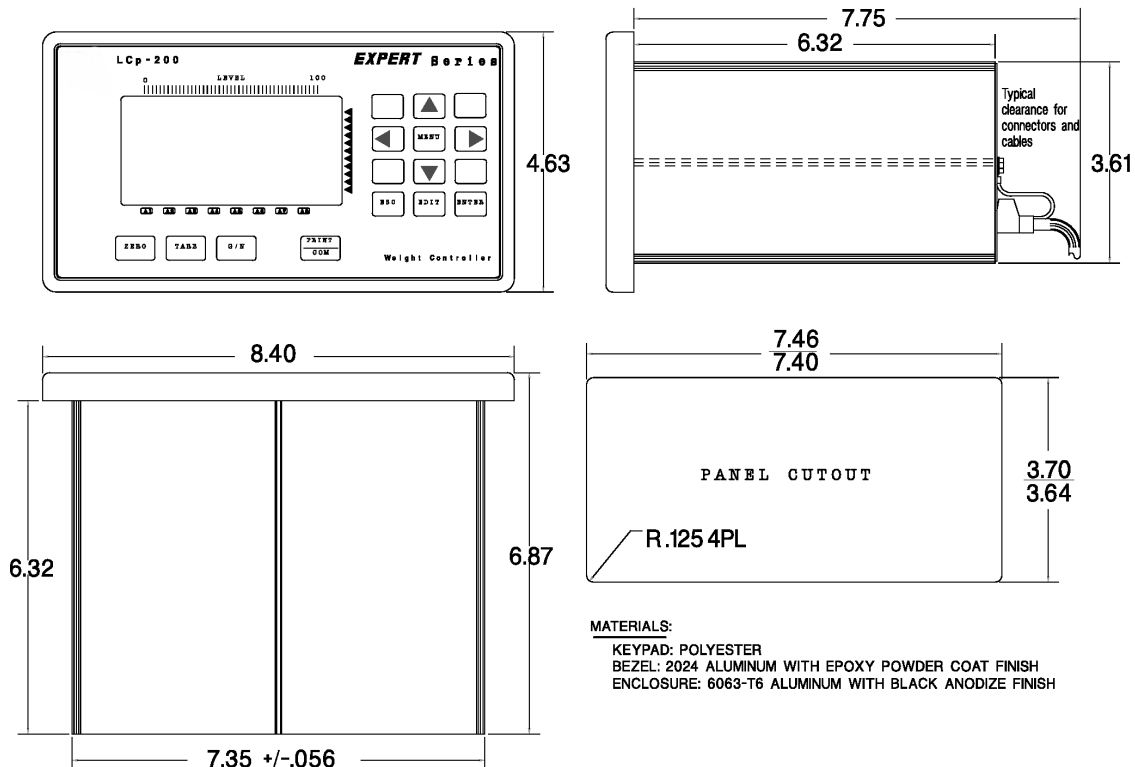
LCp-200 instruments are designed for fast, easy interfacing with virtually any PLC or DCS system. LCp-200 instruments are the first weight/rate system controllers with Schneider Automation Modbus Plus licensing. As a charter member of the Allen-Bradley 'Encompass' program, BLH offers Remote I/O capability in all LCp products. Profibus can be ordered for communication with Siemens controllers.

For network applications, units can be ordered with our Digi-System Plus protocol for communication with an LCp-400 Gate-Weigh controller.



Open collector setpoint outputs interface with PLC I/O cards and optional solid state triac relays control process valves directly

OUTLINE DIMENSIONS



SPECIFICATIONS

Performance

| | |
|-----------------------|--|
| Resolution | 1,048,576 total counts |
| Displayed Resolution | 700,000 counts |
| Conversion Speed | 50 msec |
| Displayed Sensitivity | 0.05 μ V per count |
| Noise | 0.4 μ V per count (min. filt. setting) |
| Full Scale Range | 3.5 mV/V |
| Dead Load Range | 100% full scale |
| Input impedance | 10 m-ohms min |
| Excitation Voltage | 10 Vdc @ 250 mA |
| Linearity | \pm 0.0015% full scale |
| Software Filter | multi-variable up to 10,000 msec |
| Step Response | one conversion |
| Temp Coefficient Zero | \pm 2ppm/ $^{\circ}$ C |
| Temp Coefficient Span | \pm 7ppm/ $^{\circ}$ C |

Environment

| | |
|-----------------------|---|
| Operating Temperature | -10 to 55 $^{\circ}$ C (15 to 131 $^{\circ}$ F) |
| Storage Temperature | -20 to 85 $^{\circ}$ C (-5 to 185 $^{\circ}$ F) |
| Humidity | 5 to 90% rh non-condensing |
| Voltage | 117/230 Vac +15% @ 50/60 Hz |
| Power | 15 watts max |

Enclosure

| | |
|---------------------|----------------------------|
| Dimensions (std) | 4.63 x 8.40 x 6.5 in. HWD |
| NEMA 4/4X, 12 (opt) | 8.5 x 13.5 x 10.45 in. HWD |

Materials

| | |
|-----------------------|----------------------------|
| Aluminum Case & Bezel | overlay meets 94V-0 rating |
|-----------------------|----------------------------|

Display

| | |
|---------------|--|
| Type | high intensity cobalt green vacuum fluorescent |
| Active Digits | 7 digit alpha numeric .59" high for weight: 8 digit alpha numeric .39" high for status |

Analog Output (Optional)

| | |
|--------------------|-----------------------------------|
| Conversion | 16 bit D-A |
| Current Selectable | 4-20 mA or 0-20 mA - 600 ohm max. |

Remote Digital Inputs (Optically Isolated)

| | |
|--|---------------|
| (Contact closure or do logic compatible) | |
| Closed (Momentary) | logic low |
| Open | logic high |
| Cable Length | 100 feet max. |

DC Setpoint Outputs - 8 (Standard)

| | |
|-------------------------|---|
| Type | open collector (current sinking) |
| Operating Voltage | 5 - 35 Vdc |
| ON Voltage | 1.2 Vdc @ 40 mA 0.8Vdc @ 1 mA |
| OFF State Leakage Power | 0.04 μ A @ 40 Vdc external supply required |

AC Setpoint Outputs - 8 (Optional)

| | |
|------------------------|-------------------------------|
| Type | triac |
| Operating Voltage | 12 - 240 Vac |
| AC Frequency | 20 - 500 Hz |
| ON State Voltage Drop | 1.2 Vrms |
| Min - Max Load Current | 5mA- 1A |
| Leakage Current | 1mA @ full rated load voltage |
| Power | external supply required. |

Communications (Standard)

| | |
|-------------------|---|
| Serial RS-422/485 | full or half duplex ASCII, printer, Provox, or Modbus protocols odd, even or no parity- selectable |
| Baud Rates | 300, 1200, 2400, 4800, 9600, or 19200 |
| Addressing | 0 - 99 |

Special Interfaces (Optional)

| | |
|---------------|-------------------------------|
| DeviceNet | to ODVA specification |
| Allen-Bradley | Remote I/O - 1/4 Logical Rack |
| Modbus RTU | slave |
| Modbus Plus | peer-to-peer |
| Profibus | slave. |

Approvals/Certifications

| | |
|---------------------|---------------------------------|
| FM (factory Mutual) | 3611 (Div 2) |
| CSA | C22.2 (all applicable sections) |

BLH is continually seeking to improve product quality and performance. Specifications may change accordingly.

Disclaimer

All product specifications and data are subject to change without notice.

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