

## Expert Weight Transmitter



### FEATURES

- 1 Million count resolution, 20 updates per second
- Plug-n-Weigh® set-up for easy installation
- Dynamic digital process filtering
- Real time system & loop diagnostics

### OPTIONAL FEATURES

- Expansion slot for DeviceNet, Modbus Plus, Profibus DP, or AB Remote I/O interface
- High resolution (16 bit) analog output

### DESCRIPTION

The LCp-100 is a high performance weight indicator and transmitter with features and options focused on the requirements of precision, high-speed process weighing applications. It is compatible with all strain gage type load cells and is designed to easily connect to any PLC, DCS, or PC based process control system. Special design emphasis has been placed on simplicity, reliability, and expandability. Transmitter outputs offered include an RS-422/ 485 digital serial communication port, and 16 bit derived analog current output.

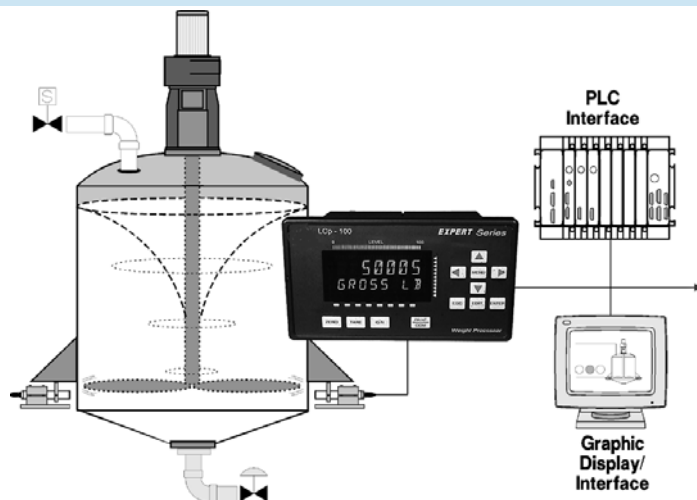
Units are equipped with an expansion slot for installing a wide range of specialized digital interfaces such as DeviceNet, Profibus, AB Remote I/O, and Modbus Plus.

The LCp-100 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 weigh system performance and alert service personnel to potential problems, before they happen.

### APPLICATIONS

- Batch & mix systems
- Reactor vessels
- Ribbon blenders
- Process weighing and control systems

### CONFIGURATION



#### Available Outputs

- DeviceNet
- Profibus
- Modbus Plus
- Allen-Bradley Remote I/O
- Digi-System Plus Network
- ASCII Serial
- 4-20 mA Analog

#### Plug-n-Weigh® Technology

Plug-n-Weigh technology minimizes start-up time while significantly reducing the operator learning curve. Intuitive configuration menus, self-configuration of many set-up parameters, and simple push-button type digital calibration combine together to make the LCp100 easy to install and operate.



#### Safe-Weigh® Software System

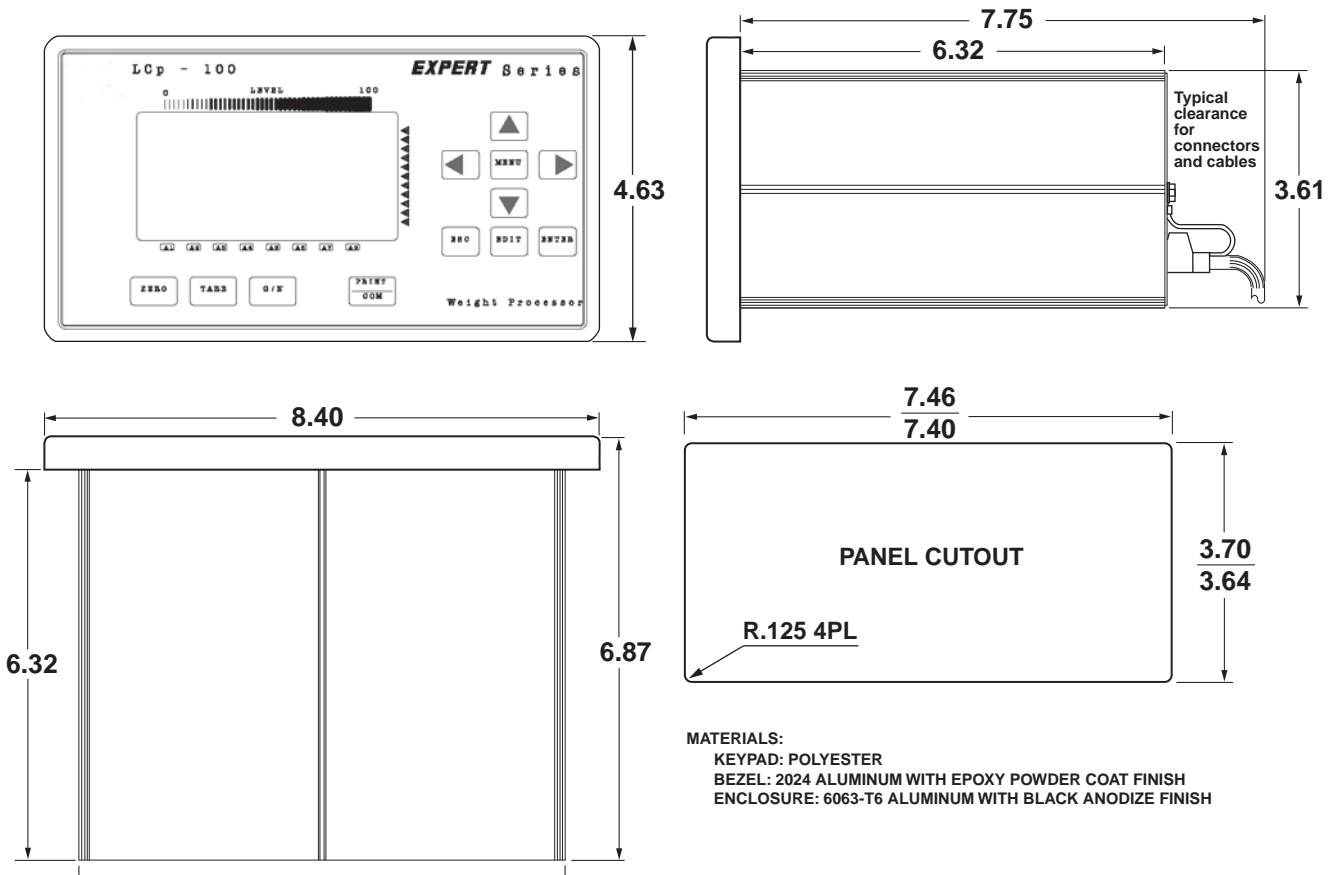
Safe-Weigh® Software System advantages include Expert System Diagnostics, Dynamic Digital Filtering, and a wide range of proven DCS/PLC connectivity options. Expert System Diagnostics generate on-line preventative maintenance signals, which quickly identify potential electrical/mechanical failures. Dynamic Digital Filtering ensures stable weight data and precise, repeatable setpoint control in dynamic process environments.



#### Communications and Interfacing

LCp-100 instruments are designed for fast, easy interfacing with virtually any PLC or DCS system. LCp-100 instruments are the first weight transmitters available with Schneider Automation, Modbus Plus Network communication. Also, as a licensed partner in the Allen-Bradley Encompass program, BLH offers Remote I/O capability in all LCp products. Other easy digital interfaces are available for DeviceNet, Siemens Profibus, Honeywell TDC 3000, GE series 90 PLC's, and Fisher Rosemount (Provox).

For cost effective local area network applications, units may be ordered with BLH Di-gi-System Plus protocol for communication to a PLC or DCS via an LCp-400 Gate-Weigh controller.



## SPECIFICATIONS

### PERFORMANCE

Resolution	1,048,576 total counts
Displayed Resolution	700,000 counts
Conversion Speed	50 msec
Displayed Sensitivity	0.05 $\mu$ V per count
Full Scale Range	$\pm$ 3.5 mV/V
Dead Load Range	100% full scale
Linearity	$\pm$ 0.0015% full scale
Excitation Voltage	10 Vdc @ 250 mA
Software Filter	multi-variable up to 10,000 msec
Temp Coefficient Zero	$\pm$ 2 ppm/ $^{\circ}$ C max
Temp Coefficient Span	$\pm$ 7 ppm/ $^{\circ}$ C max
Step Response	one conversion cycle

### 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

### DISPLAY

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

### ELECTRICAL

Voltage	117/230 ac $\pm$ 15% @ 50/60 Hz
Power	15 watts max
Input Impedance	10 m-Ohms min
Noise	0.4 $\mu$ V/count (min. filt. setting)

### ANALOG OUTPUT

Conversion	16 bit D-A
Current Selectable	4-20 mA or 0-20 mA - 600 Ohm max., 0-24 mA - 500 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

### COMMUNICATIONS (STANDARD)

Serial RS-422/485	full or half duplex BLH Digi-System Plus Network, ASCII,
Optional Protocols	Provox, or Modbus RTU odd, even or no parity-selectable
Baud Rates	300, 1200, 2400, 4800, 9600, or 19200
Addressing	0-99

### SPECIAL INTERFACES (OPTIONAL)

Allen-Bradley	Remote I/O -1/4 Logical Rack
Modbus RTU	slave
Modbus Plus	peer-to-peer (supports global data)
Profibus	slave
DeviceNet	slave

### ENCLOSURE

Dimensions (std)	4.63 x 8.40 x 6.5 in. HxWxD
NEMA 4/4X, 12 (opt)	8.5 x 13.5 x 10.45 in. HxWxD
Weight	5.4 lb

### MATERIALS

Aluminum Case & Bezel overlay meets 94V-0 rating

### APPROVALS

FM (Factory Mutual)	3611
CSA	C22.2 (all applicable sections)

### NOTE:

PLC and Allen-Bradley are trademarks of Allen-Bradley Co., Inc.  
Modbus is a trademark of Schneider Automation.  
Profibus is a trademark of Siemens.  
DeviceNet is a trademark of ODVA  
Plug-n-Weigh is a trademark of BLH  
Safe-Weigh is a trademark of BLH

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

## Ordering Specification Code

**LCP-100- [M]-[AP]-[C]-[B]-[M] Indicating Weight Transmitter**



**LCP-200- [M]-[AP]-[C]-[B]-[M] Indicating Weight Transmitter with Discrete I/O & Rate Functions**



**LCP-100   LCP-200**

**[M] MOUNTING**

- |   |     |     |
|---|-----|-----|
| <b>[1]</b> NEMA 4X PANEL MOUNT                                    | STD | STD |
| <b>[2]</b> #1 & FM/CSA DIV. 2 APPROVAL (CLI, DIV2, GRP A-D,FG)    |     |     |
| <b>[5]</b> NEMA 4X STAINLESS STEEL WALL MOUNT ENCLOSURE           |     |     |
| <b>[6]</b> #5 & FM/CSA DIV. 2 APPROVAL (CLI,II, DIV2, GRP A-D,FG) |     |     |
| <b>[7]</b> #5 with MODEL 306 INTERNAL SUMMING BOARD               |     |     |
| <b>[8]</b> #6 with MODEL 306 INTERNAL SUMMING BOARD               |     |     |
| <b>[13]</b> #6 with TYPE Y PURGE SUITABLE FOR DIV. 1 AREAS        |     |     |
| <b>[15]</b> NEMA 4/7/9 Ex Enclosure(CL I,II,III, DIV1,GRP BCDEFG) |     |     |

**[A] EXPANSION SLOT A**

- |                                     |     |     |
|-------------------------------------|-----|-----|
| <b>[1]</b> NONE                     | STD | STD |
| <b>[3]</b> MODBUS PLUS              |     |     |
| <b>[4]</b> ALLEN BRADLEY REMOTE I/O |     |     |
| <b>[5]</b> PROFIBUS DP              |     |     |

**[P] PROCESS INPUTS & OUTPUTS**

- |  |     |     |
|--|-----|-----|
| <b>[1]</b> REMOTE FUNCTION INPUT (zero, gross/net, tare, print)  | STD | STD |
| <b>[2]</b> #1 and ANALOG CURRENT OUTPUT  |     |     |
| <b>[9]</b> #1 and ANALOG CURRENT OUTPUT,BIPOLAR DIRECTION,<br>100 UPDATES/SECOND, UNITS IN LB, KG, PLI, N, N/M |     |     |

**[C] COMMUNICATION**

- |  |     |     |
|--|-----|-----|
| <b>[1]</b> RS-485/422 W/ ASCII PROTOCOL & DIGISYSTEM +           | STD | STD |
| <b>[2]</b> #1 and MODBUS RTU PROTOCOL                            |     |     |
| <b>[3]</b> #1 & PROVOX PROTOCOL (includes 20mA serial converter) |     |     |

**[B] EXPANSION SLOT B**

- |  |     |     |
|--|-----|-----|
| <b>[1]</b> None                        | STD | N/A |
| <b>[2]</b> 8 Open Collector DC Outputs | N/A | STD |
| <b>[3]</b> 8 Solid State Relay Outputs | N/A |     |

**[M] MODEM/ON-LINE SERVICE**

- |   |     |     |
|---|-----|-----|
| <b>[1]</b> NONE                               | STD | STD |
| <b>[2]</b> MODEM with 90 DAYS ON-LINE SERVICE |     |     |

**Weigh-View Software Kit ( 471297)**