# 

# EHE31-56 Series Specifications

## 1.0 Scope

### 1.1 This specification in combination with pump data sheets identifies the minimum requirements for electronic metering pumps.

## 2.0 Reference codes and standards

### 2.1 Pumps shall comply with the latest editions of the following codes and standards:

#### UL Standard 778 Hydraulic Institute Standards

#### National Electric Code NEMA 4X (IP65)

## 3.0 Definitions

### 3.1 Electronic metering pump -A positive displacement diaphragm metering pump in which the diaphragm is actuated by an electromagnetic solenoid which is in turn controlled by an electronic circuit.

## 4.0 General

### 4.1 Output volume shall be adjustable while pump is in operation.

### 4.2 Weight of pump as installed shall not exceed 22 pounds.

### 4.3 Pump shall fit within a rectangular volume 11.6” long by 6” wide by 11.6” high.

## 5.0 Drive

### 5.1 The pump mechanism shall be totally enclosed with no exposed moving parts.

### 5.2 Electronic control module shall be located beneath solenoid and protected by a clear, hinged cover.

### 5.3 Average power consumption shall not exceed 48 watts under full speed and maximum pressure conditions.

### 5.4 Metering pump shall be capable of pumping a maximum of (q) GPH against a maximum pressure of (p) PSI. (q and p from Table 1)

### 5.5 Stroke length shall be adjustable from 20% to 100% by means of a readily accessible keypad.

### 5.6 Control of pump speed shall be selectable between manual and external.

### 5.7 In manual mode, pump speed shall be adjustable from 1 to 360 strokes per minute by means of a readily accessible keypad with digital display.

### In external analog mode, the pump shall accept a 4 to 20 mA control signal from external equipment and operate at a speed that is proportional to the signal level. The slope and zero offset of the pump’s response shall be operator adjustable by means of push buttons.

* 1. In external digital mode, the pump shall respond to a pulse signal from external equipment such that either one pulse produces n pump strokes (multiply mode) or n pulses produce one pump stroke (divide mode). In either mode, n shall be operator adjustable from 1 to 999 by means of push buttons.

## 6.0 Materials of construction

### 6.1 Pump housing shall be of chemically resistant glass fiber reinforced thermoplastic.

### 6.2 All exposed fasteners shall be stainless steel.

### 6.3 Liquid end materials shall be as shown in Table 2.

## 7.0 Shop tests

### 7.1 All pumps shall pass manufacturer’s standard performance test.

##### Table 1 Capacity/Pressure Rating

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Size | **Maximum Output Capacity (q)** | | **Output per Stroke (mL)** | | **Maximum Pressure (p)** | | **Connection Size Tubing O.D.\*** |
| **Gal/hr** | **mL/min** | **Min** | **Max** | **PSI** | **MPa** | **in** |
| E31 | 5.5 | 340 | 0.18 | 0.94 | 150 | 1.0 | ½ |
| E36 | 8.5 | 520 | 0.29 | 1.44 | 105 | 0.7 | ½ |
| E46 | 12.0 | 750 | 0.42 | 2.08 | 60 | 0.4 | ½ |
| E56 | 20.0 | 1250 | 0.69 | 3.47 | 30 | 0.2 | ½ |

**Table 2 Materials of Construction**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Liquid End** | **Pump Head & Fittings** | **Diaphragm** | **Valve Balls** | **Valve Seat** | **Valve Seals** | **Gasket** | **Tubing** |
| FC | PVDF | PTFE bonded to EPDM | CE | PCTFE | PTFE | PTFE | PE |
| PC | GFRPP | CE | FKM | FKM |
| PE | GFRPP | CE | EPDM | EPDM |
| VC | PVC | CE | FKM | FKM |
| VE | PVC | CE | EPDM | EPDM |
| VM | M-PVC | CE | FKM | FKM |
| TC | PVDF | CE | FKM | FKM |

CE Alumina ceramic EPDM Ethylene propylene diene monomer

FKM Fluoroelastomer GFRPP Glass fiber reinforced polypropylene

HC Hastelloy C276 PCTFE Polychlorotrifluoroethylene

PE Polyethylene PTFE Polytetrafluoroethylene

PVC Polyvinylchloride (translucent) PVDF Polyvinylidenefluoride

SS 316 stainless steel

**DIMENSIONS**

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model | | | | | A | B | C | D | E | F | G | H | J | L | W |
| EHE | 31  36 | E1  E2 | -VC  -PC  -VE | -PE  -VF | 6.06 | 1.05 | 7.76 | 6.42 | 2.28 | 0.67 | 9.49 | 10.95 | 3.15 | 11.18 | 5.75 |
| EHE | 46 | E1  E2 | -VC  -PC  -VE | -PE  -VF | 6.06 | 1.14 | 7.83 | 6.42 | 2.28 | 0.67 | 9.86 | 11.34 | 2.80 | 11.25 | 5.75 |
| EHE | 56 | E1  E2 | -VC  -PC  -VE | -PE  -VF | 6.06 | 1.42 | 8.13 | 6.42 | 2.28 | 0.67 | 10.10 | 11.57 | 2.38 | 11.55 | 5.75 |
| EHE | 56 | E1  E2 | -VM |  | 6.06 | 1.42 | 8.13 | 6.42 | 2.28 | 0.67 | 10.10 | 11.57 | 2.38 | 11.55 | 5.75 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mounting Dimensions | R | S | T | X |
| EHE all variations | 5.20 | 4.50 | 1.00 | 0.28 |

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