

# General Specifications

Model EJA Series  
With HART® Communication  
Differential Pressure Transmitter

**DPharp**

GS 01C22T01-00E

DPharp EJA Series can perform remote setting and monitoring of measuring ranges, damping time constant, etc. through HART® Communicator. A self-diagnostic can also be performed on the transmitter.

## FEATURES

- **Remote Ranging And Monitoring Functions**  
Ranges can be remotely set and monitored through HART® Communicator.
- **On-line Communication**  
Output signal and communication signal do not interfere making on-line communication possible.
- **Zero Adjustment Function**  
Zero point easily adjusted at external zero adjustment.
- **Self-Diagnostic**  
Pressure input outside of range limit, excessive ambient temperature incorrect span setting etc. can be diagnosed through HART® Communicator.
- **Wide Transmitter Offering**  
DPharp EJA Series with HART® Communication is applicable to the entire DPharp EJA series.



Use the following formula to determine cable length for a specific application:

$$L = \frac{65 \times 10^6}{(R \times C)} - \frac{(C_f + 10,000)}{C}$$

F01E.EPS

## STANDARD SPECIFICATIONS

For items other than those described below, refer to each General Specification sheet.

### Write Protection Switch (Optional code F1):

Write Enable/Disable switch

### Conditions of Communication Line:

Supply Voltage;

General Use & Explosion proof Type  
16.4 to 42 V DC

Intrinsically safe Type  
Refer to each General Specification sheet.

Load resistance;

See figure 1.

Minimum cable size;  
24 A WG, (0.51 mm diameter).

Cable type;

Single pair shielded or multiple pair with overall shield.

Maximum twisted-pair length;

10,000 ft (3,048 m).

Maximum multiple twisted-pair length:

5,000 ft (1,524 m).

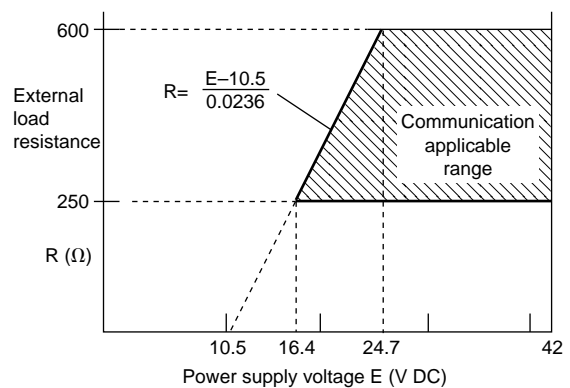
Where:

L = length in feet or meters.

R = resistance in ohms, current sense resistance plus barrier resistance.

C = cable capacitance in pF/ft, or pF/m.

C<sub>f</sub> = Maximum shunt capacitance of field devices in pF.



F02E.EPS

Figure 1. Relationship Between Power Supply Voltage and External Load Resistance

## FUNCTIONAL SPECIFICATIONS

### Functional specifications for remote setting and monitoring (operated from HART® Communicator)

ITEM	DISPLAY	SETTING	SUMMARY	Settings on Shipment
Tag Number (Software Tag)	○	○	Up to 8 alphanumeric characters	As specified in order
Output Mode	○	○	LINEAR/SQUARE ROOT output	'LINEAR' unless otherwise specified in order
Display Function	○	○	LINEAR/SQUARE ROOT display	'LINEAR' unless otherwise specified in order
Display Mode	○	○	Normal % scale, User Set scale, Alternate Normal % and User Set scale, Input Pressure display, or Alternate Input Pressure display and Normal %.	'NORMAL %'
Damping Adjustment	○	○	0.2, 0.5, 1, 1.5, 2, 4, 8, 16, 32, 64 sec.	2 sec.
Lowest Limit of Calibration Range	○	○	Pressure equal to 4 mA value.	As specified in order
Highest Limit of Calibration Range	○	○	Pressure equal to 20 mA value.	As specified in order
Instantaneous Value of Input (Differential Pressure or pressure)	○	—	Display actual Differential Pressure or actual Pressure.	—
Instantaneous Value of Output (Current)	○	—	Display actual % of calibrated span or 4-20 mA output value.	—
Unit of Calibration Range	○	○	in H <sub>2</sub> O, in Hg, ftH <sub>2</sub> O, mmH <sub>2</sub> O, mmHg, psi, bar, mbar, g/cm <sup>2</sup> , kg/cm <sup>2</sup> , Pa, kPa, MPa, Torr, or atm	As specified in order
Constant Current Output	○	○	4 to 20 mA DC	—
Self-diagnostic	○	○	Pressure input outside of range limits, Excessive ambient temperature, or Incorrect rangesetting.	—
Burst Mode	—	○	Continuous transmission of pressure values, % output values or 4-20 mA output values	—
Multidrop Communication	○	—	Up to 15 transmitters can be connected.	—

T01E.EPS

## MODEL AND SUFFIX CODES

EJA□□□□□-E□□□□□-□□□□□/□

└─ Output signal . . . 4 to 20 mA DC with digital communication (HART® protocol)

## OPTIONAL SPECIFICATIONS

Item	Description	Code
Data Configuration	Description into "Descriptor" parameter of HART protocol (max. 16 characters)	CA

T02E.EPS

### <Ordering Information>

Specify the following when ordering.

1. Model, suffix codes, and optional codes
2. Calibration range and units:
  - 1) Calibration range can be specified with range value specification up to 5 digits (excluding any decimal point) for low or high range limits within the range of -32000 to 32000.
  - 2) Specify only one unit from the table, 'Settings in shipment.'
3. Select linear or square root for output mode and display mode.
 

Note: If not specified, the instrument is shipped set for linear mode

4. Display scale and units (for transmitters equipped with integral indicator only)
 

Specify either 0 to 100 % or engineering unit scale and 'Range and Unit for engineering units scale: Scale range can be specified with range limit specifications up to 5 digits (excluding any decimal point) for low or high range limits within the range of -19999 to 19999.
5. Tag Number (for tag plate); up to 16 alphanumeric characters
6. Software Tag (for amplifier memory); up to 8 alphanumeric characters

### <Reference>

HART; Trademark of the HART Communication Foundation.