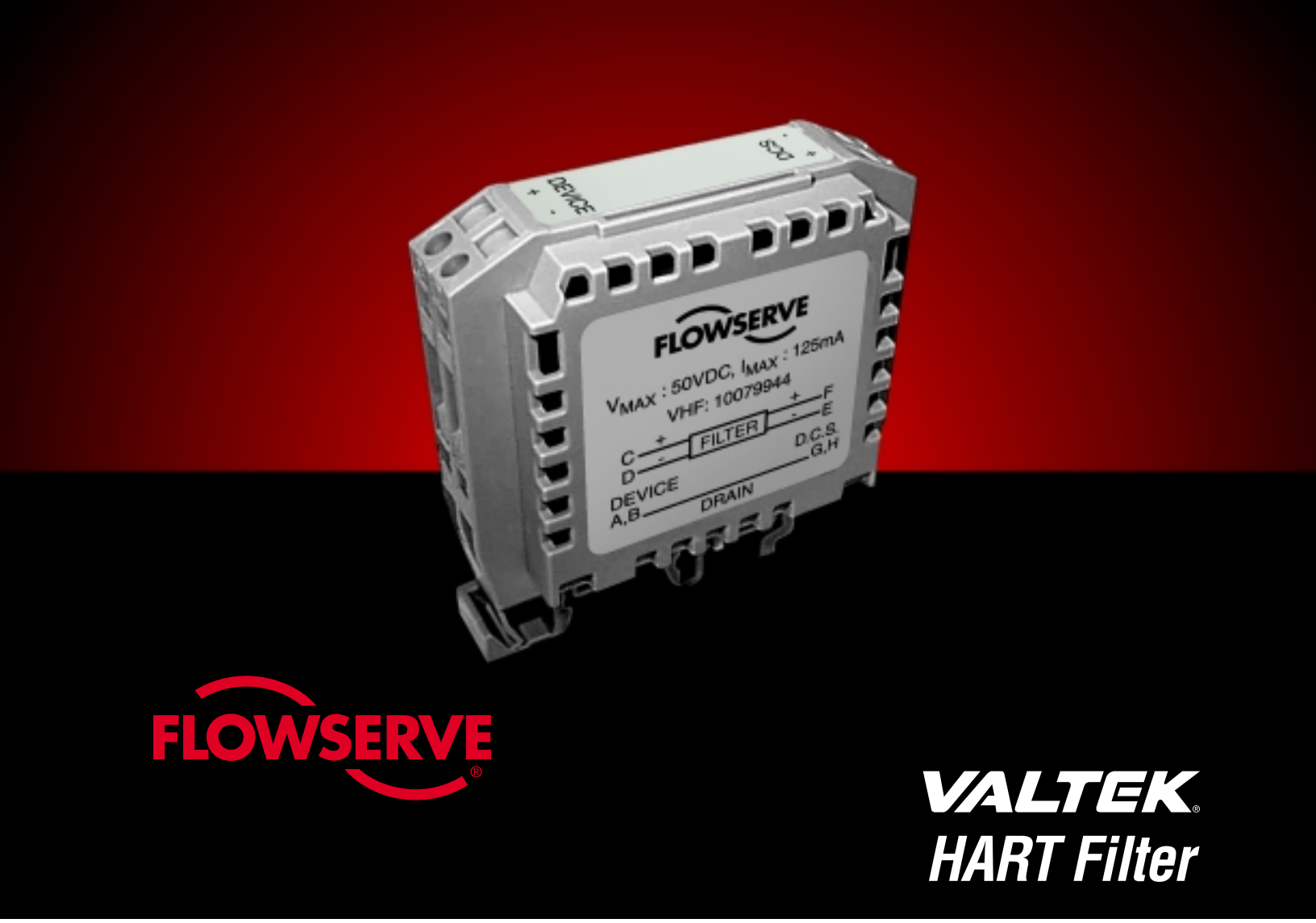

FLOWSERVE®

VALTEK®

HART Filter

Description

The Valtek® HART Filter is installed at the output of a DCS 4-20 mA current source to prevent interference with the HART® communications signal or the DCS. The HART communications protocol uses frequencies of 1200 Hz and 2200 Hz, which are superimposed on the DC, 4-20 mA current source. Some current sources may interfere with the HART signal and prevent proper communications between HART masters such as the 275 handheld communicator, *ValTalk®* or *SoftTools™* software. The Valtek HART filter maintains the 4-20 mA DC signal while preventing the DCS (or other current source) from distorting or filtering out the HART communications signal. Additionally, the filter protects against control systems which may interpret the HART communication signal as a positioner fault.

Specifications

Operating Temperature Range	-40° F to 185° F (-40° C to 85° C)
Maximum Voltage at Terminals F, E	50 VDC
Maximum Current	125 mA
Filter Series Resistance	10 Ω
Mounting	DIN Rail
Dimensions (L x H x W)	2.44 x 0.905 x 2.50 inches (6.1 x 2.3 x 6.4 cm)

Valtek HART Filter

The filter is simple to install and requires no adjustments or configuration. Figure 1 shows the filter installation in the 4-20 mA loop. The filter is housed in a DIN rail package and should be installed close to the DCS current source output. The filter has a series resistance of 10 Ω which adds minimal impedance to the loop. Connect the current source to terminals F and E. Connect the Logix™ 1200 positioner to terminals C and D. Observe proper polarity when connecting to these terminals. Terminals G, H and A, B are provided in order to carry the drain wire from shielding through the filter.

CAUTION: The Valtek HART Filter carries no intrinsically safe certification and is not approved for use in hazardous areas.

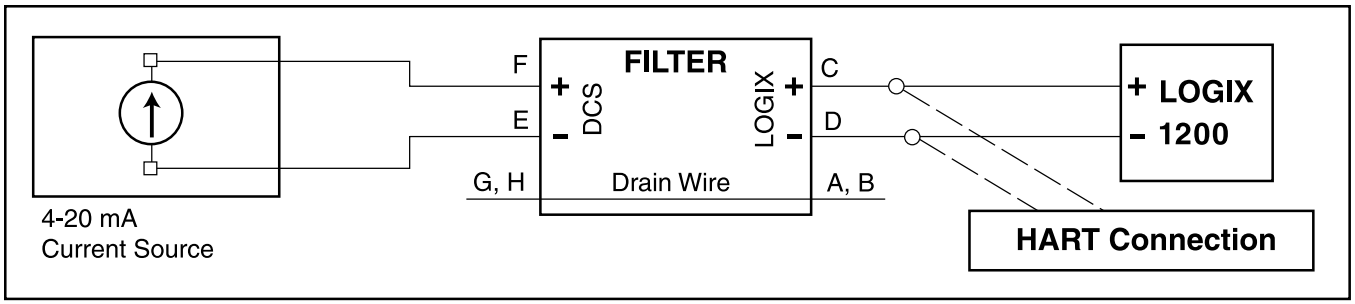

Figure 1: Valtek HART Filter Wiring Diagram

HART Connection

Any HART master, such as the 275 handheld communicator, *ValTalk* or *SoftTools* software, can now be connected anywhere between terminals C, D and the Logix 1200 positioner.

Control systems possibly needing a HART filter

Control System	Compliance Voltage	Comments
Bailey Infi 90	15.8 V @ 4.0 mA	Note compliance voltage; ambiguous results, filter may not be required
Fisher-Porter DCI 40PC200C	18.2 V @ 20.75 mA 21.7 V @ 3.89 mA	Filter required - Low impedance
Honeywell TDC 2000	18.5 V @ 21.05 mA 20.7 V @ 3.84 mA	Filter required - Low impedance
Honeywell TDC 3000	18.5 V @ 21.05 mA 20.7 V @ 3.84 mA	Filter required - Low impedance
Fisher-Rosemount PROVOX Control I/O	19.5 V @ 22.25 mA 20.3 V @ 3.85 mA	Filter required to prevent readback errors
Fisher-Rosemount PROVOX Configurable, Computing and IAC	20.7 V @ 22.09 mA 21.6 V @ 3.83 mA	Filter required to prevent readback errors
Fisher-Rosemount DPR900	20.67 V @ 19.94 mA 24.82 V @ 3.80 mA	Filter required - Low impedance
Foxboro I/A (1988)	18.2 V @ 20.0 mA 22.2 V @ 3.99 mA	Ambiguous results, filter may not be required

