



# Procon Engineering

(A Division of National Oilwell Varco UK Limited)



## Model D1020S & D1020D SIL2 Powered Isolating Driver

**Simplified installation using standard  
DIN rail and plug-in terminal blocks**

**4-20mA or 0-20mA input, output  
signal**

**EMC Compatibility to EN61000-6-  
2, EN 61000-6-4**

**Three port isolation, input,  
output/supply**

**High accuracy**

**ATEX approved**

**High reliability, SMD components**

**Output to Zone O (Zone 20) division  
1 installation in Zone 2, division 2**

The single and dual channel DIN Rail Isolating Driver, D1020S and D1020D, isolates and transfers a 4-20mA, 0-20mA signal from a controller located in Safe Area to a load of up to 750  $\Omega$  in Hazardous Area. It has a high output capacity of 15V at 20mA combined with a low drop across its input terminals.

The circuit allows bi-directional communication signals, for Smart I/P. In the 4-20mA input range, a field open circuit reflects a high impedance to the control device output circuit.

### **Function:**

1 or 2 channels I.S. mA analog output for 2 wire I/P Smart converters or valve positioners, provides 3 port isolation (input/output/supply).

### **Signaling LED:**

Power supply indication (green).

### **Smart Communication Frequency Band:**

0.5 to 40 KHz within 3 dB (Hart and higher frequency protocols).

### **EMC:**

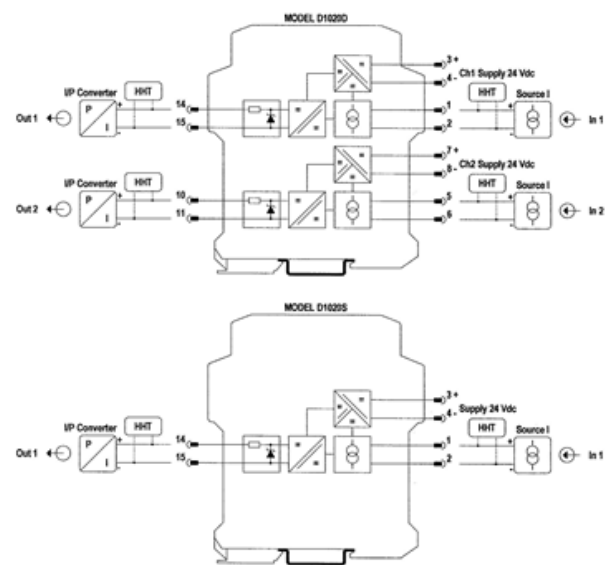
Fully compliant with CE marking applicable requirements.

# Model D1020S & D1020D SIL2 Powered Isolating Driver

## Technical Specification Sheet

<b>Supply:</b>		24 Vdc nom (20 to 30 Vdc) reverse polarity protected ripple within voltage limits $\leq 5$ Vpp.
	<b>Current consumption @ 24 V:</b>	95mA for 2 channels D1020D, 50mA for 1 channel D1020S with 20mA output typical.
	<b>Power dissipation:</b>	1.9W for 2 channels D1020D, 1.0 W for 1 channel D1020S with 24 V supply voltage and 20 mA output typical.
	<b>Max. power consumption:</b>	At 30 V supply voltage and overload condition, 2.7 W for 2 channels D1020D, 1.4 W for 1 channel D1020S.
<b>Isolation (Test Voltage):</b>		I.S. Out/In 1.5 KV; I.S. Out/Supply 1.5 KV; I.S. Out/I.S. Out 500 V; In/Supply 500 V; In/In 500 V.
<b>Input:</b>		0/4 to 20 mA with $\leq 2.0$ V voltage drop, reverse polarity protected.
<b>Output:</b>		0/4 to 20 mA, on max. 750 $\Omega$ load, current limited at $\approx 23$ mA.
	<b>Response time:</b>	50 ms (10 to 90 % step change).
	<b>Output ripple:</b>	$\leq 20$ mVrms on 250 $\Omega$ communication load on 0.5 to 40 KHz band.
	<b>Frequency response</b>	0.5 to 40 KHz bi-directional within 3 dB (Hart and higher frequency protocols).
<b>Performance:</b>		Ref. Conditions 24 V supply, 250 $\Omega$ load, $23 \pm 1$ °C ambient temperature
	<b>Calibration accuracy:</b>	$\leq \pm 0.1$ % of full scale.
	<b>Linearity error:</b>	$\leq \pm 0.05$ % of full scale.
	<b>Supply voltage influence:</b>	$\leq \pm 0.05$ % of full scale for a min to max supply change.
	<b>Load influence:</b>	$\leq \pm 0.05$ % of full scale for a 0 to 100 % load resistance change.
	<b>Temperature influence:</b>	$\leq \pm 0.01$ % on zero and span for a 1 °C change.
<b>Compatibility:</b>		CE mark compliant, conforms to 94/9/EC ATEX Directive and to 2004/108/CE EMC Directive.
<b>Environmental Conditions:</b>	<b>Operating:</b>	Temperature limits -20 to + 60 °C, relative humidity max 90 % non-condensing, up to 35 °C.
	<b>Storage:</b>	Temperature limits - 45 to + 80 °C.
<b>Mounting:</b>		T35 DIN Rail according to EN50022.
	<b>Weight:</b>	About 180g D1020D, 120g D1020S.
	<b>Connection:</b>	By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm2
	<b>Location:</b>	Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4, Class I, Division 2, Groups A, B, C, D Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA T4 installation.
	<b>Protection class:</b>	IP20.
	<b>Dimensions:</b>	Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

### Function Diagram:



Procon Engineering's policy is one of continuous product enhancement.

We therefore reserve the right to incorporate technical modifications without prior notification. E&OE.

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