

# NVDF

- Adjustable vacuum level and flow rate
- Powerful vacuum up to 25"Hg [847mbar]
- High flow, up to 120 SCFM [3398 LPM]
- Energy efficient – customer controlled with high performance to air consumption ratio
- Safe operation – No electricity needed at the pump and no heat generated
- Reliable operation – straight-through design with no moving parts

## Technical Data

### Fluid

Filtered (50 Micron) unlubricated, non-corrosive dry gases

### Operating Pressure

Above 50 PSI (3.4bar)

### Operating Temperature

-100° to 400° F (-73° to ~204°C)

### Materials

Pump Body: Anodized Aluminum

Silencer Body: Varies by Size



	NVDF 10, 15, 20, 25	NVDF 37	NVDF 50	NVDF 75
<b>Supply Line</b>	3/8" (10mm)	1/2" (12mm)	1/2" (12mm)	5/8" (16mm)
<b>Vacuum Line</b>	3/8" (10mm)	5/8" (16mm)	3/4" (19mm) ID hose	1.0" (25mm) ID hose




Note: Tubing size is based on 0.062 wall – polyethylene & polyurethane.

## Option selector

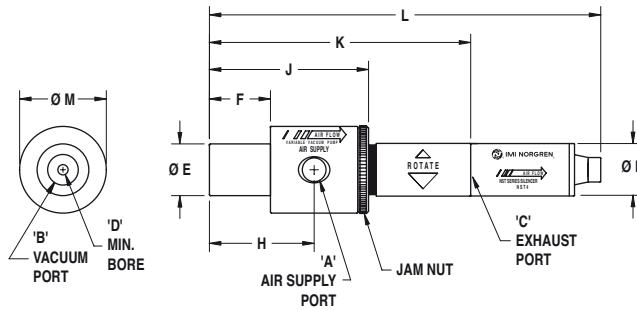
NVDF★-★★-P★★-S★★M★★

Series	Substitute	Material	Substitute
NVDF (Imperial Thread)		Anodized aluminum (standard)	<b>M01</b>
NVDFM (Metric Thread)	<b>M</b>	303 stainless steel	<b>M05</b>
<b>Size</b>	<b>Substitute</b>	304 stainless steel	<b>M06</b>
NVDF-10	<b>10</b>	316 stainless steel	<b>M07</b>
NVDF-15	<b>15</b>	PVC	<b>M09</b>
NVDF-20	<b>20</b>	PTFE (Teflon®)	<b>M12</b>
NVDF-25	<b>25</b>	PEEK	<b>M14</b>
NVDF-37	<b>37</b>	Black Acetal (Delrin®)	<b>M10</b>
NVDF-50	<b>50</b>	White Acetal (Delrin®)	<b>M11</b>
NVDF-75	<b>75</b>	<b>Silencer</b>	<b>Substitute</b>
<b>Vacuum Level Preset</b>	<b>Substitute</b>	None	<b>S00</b>
(Indicate 10-25"Hg, ex. 25"Hg = P25)	<b>XX</b>	<b>Silencer (for NVDF-10, NVDF-15)</b>	<b>Substitute</b>
(none - factory standard)		NST4	<b>S05</b>
		<b>Silencer (for NVDF-20)</b>	<b>Substitute</b>
		NST4A	<b>S06</b>
		NST4A2	<b>S07</b>
		<b>Silencer (for NVDF-37)</b>	<b>Substitute</b>
		NST8B	<b>S11</b>
		<b>Silencer (for NVDF-50)</b>	<b>Substitute</b>
		NST12C	<b>S20</b>
		<b>Silencer (for NVDF-75)</b>	<b>Substitute</b>
		NST16C	<b>S21</b>

● Accessories

Standard Models	Silencer	Inline Fitting	Swivel Elbow Fitting
			
NVDF-10-PXX-S05M01	NST4 Silencer	124250618	124470618
NVDF-15-PXX-S05M01	NST4 Silencer	124250618	124470618
NVDF-20-PXX-S05M01	NST4 Silencer	124250618	124470618
NVDF-25-PXX-S07M01	NST4A2 Silencer	124250618	124470618
NVDF-37-PXX-S11M01	NST8B Silencer	124250738	124470738
NVDF-50-PXX-S20M01	NST12C Silencer	124250738	124470738
NVDF-75-PXX-S21M01	NST16C Silencer	-	-

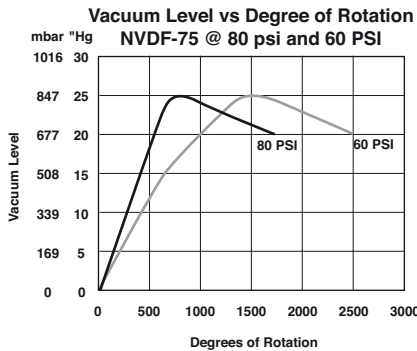
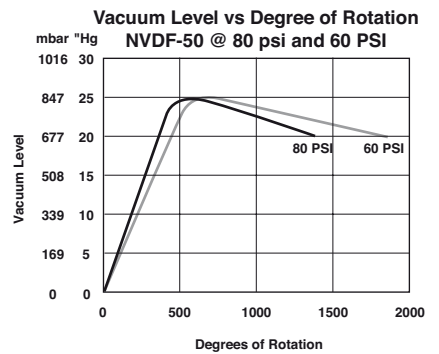
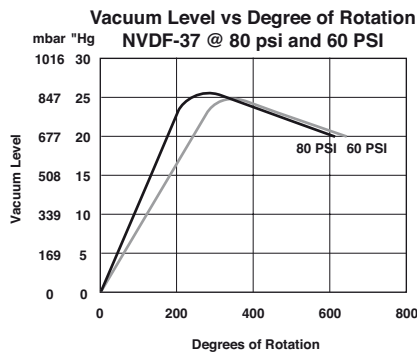
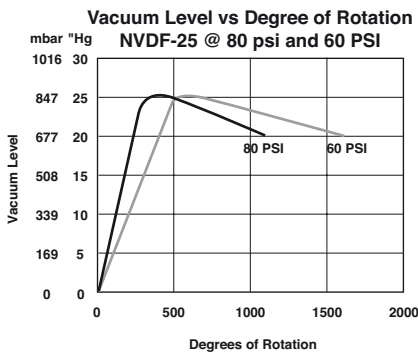
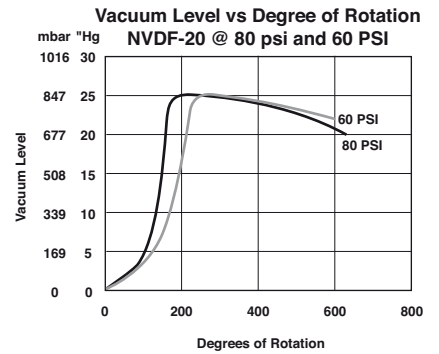
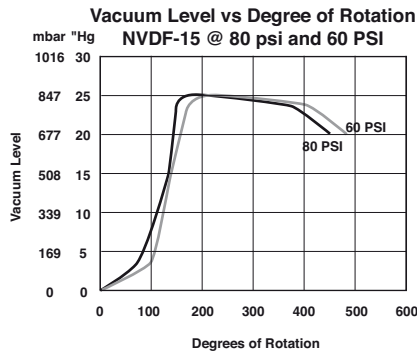
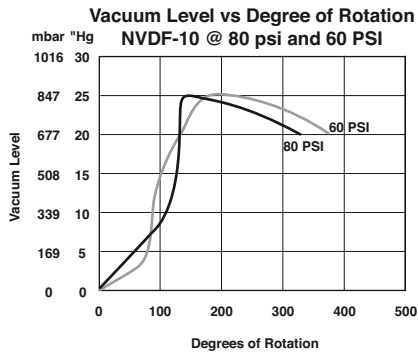
● Dimensions inches (mm)



MODEL	A	B	C	D	E	F	H	J	K	L	M	N	WEIGHT
NVDF-10-P**-S00M** (NVDFM-10-P**-S00M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.13 (3.20)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	- (-)	1.24 (31.50)	- (-)	3.7oz (105g)
NVDF-10-P**-S05M** (NVDFM-10-P**-S05M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.13 (3.20)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	5.60 (142.20)	1.24 (31.50)	0.75 (19.10)	4.3oz (122g)
NVDF-15-P**-S00M** (NVDFM-15-P**-S00M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.15 (3.70)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	- (-)	1.24 (31.50)	- (-)	3.7oz (105g)
NVDF-15-P**-S05M** (NVDFM-15-P**-S05M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.15 (3.70)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	5.60 (142.20)	1.24 (31.50)	0.75 (19.10)	4.3oz (122g)
NVDF-20-P**-S00M** (NVDFM-20-P**-S00M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.19 (4.80)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	- (-)	1.24 (31.50)	- (-)	3.7oz (105g)
NVDF-20-P**-S05M** (NVDFM-20-P**-S05M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.19 (4.80)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	5.60 (142.20)	1.24 (31.50)	0.75 (19.10)	4.3oz (122g)
NVDF-25-P**-S00M** (NVDFM-25-P**-S00M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.27 (6.70)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	- (-)	1.24 (31.50)	- (-)	3.6oz (102g)
NVDF-25-P**-S07M** (NVDFM-25-P**-S07M**)	1/8 NPTF (G 1/8)	1/4 NPTF (G 1/4)	1/4 NPTF (G 1/4)	0.27 (6.70)	0.74 (18.80)	0.87 (22.10)	1.50 (38.10)	2.27 (57.70)	3.73 (94.70)	6.29 (159.80)	1.24 (31.50)	1.00 (25.40)	5.0oz (142g)
NVDF-37-P**-S00M** (NVDFM-37-P**-S00M**)	3/8 NPTF (G 3/8)	1/2 NPTF (G 1/2)	1/2 NPTF (G 1/2)	0.38 (9.50)	0.99 (25.10)	1.50 (38.10)	2.37 (60.20)	3.45 (87.60)	6.04 (153.40)	- (-)	1.74 (44.20)	0	9.7oz (275g)
NVDF-37-P**-S11M** (NVDFM-37-P**-S11M**)	3/8 NPTF (G 3/8)	1/2 NPTF (G 1/2)	1/2 NPTF (G 1/2)	0.38 (9.50)	0.99 (25.10)	1.50 (38.10)	2.37 (60.20)	3.45 (87.60)	6.04 (153.40)	10.84 (275.30)	1.74 (44.20)	1.25 (31.80)	12.7oz (360g)
NVDF-50-P**-S00M** (NVDFM-50-P**-S00M**)	3/8 NPTF (G 3/8)	1/2 NPTF (G 1/2)	3/4 NPTF (G 3/4)	0.50 (12.70)	1.24 (31.50)	1.50 (38.10)	2.50 (63.50)	3.70 (94)	6.06 (153.90)	- (-)	1.97 (50)	- (-)	14.3oz (405g)
NVDF-50-P**-S20M** (NVDFM-50-P**-S20M**)	3/8 NPTF (G 3/8)	1/2 NPTF (G 1/2)	3/4 NPTF (G 3/4)	0.50 (12.70)	1.24 (31.50)	1.50 (38.10)	2.50 (63.50)	3.70 (94)	6.06 (153.90)	13 (330.20)	1.97 (50)	2.00 (50.80)	11b 6oz (618g)
NVDF-75-P**-S00M** (NVDFM-75-P**-S00M**)	1/2 NPTF (G 1/2)	3/4 NPTF (G 3/4)	1 NPTF (G 1)	0.75 (19.10)	1.49 (37.80)	1.50 (38.10)	2.50 (63.50)	3.70 (94)	6.95 (176.50)	- (-)	2.22 (56.40)	- (-)	11b 3oz (544g)
NVDF-75-P**-S21M** (NVDFM-75-P**-S21M**)	1/2 NPTF (G 1/2)	3/4 NPTF (G 3/4)	1 NPTF (G 1)	0.75 (19.10)	1.49 (37.80)	1.50 (38.10)	2.50 (63.50)	3.70 (94)	6.95 (176.50)	13.88 (352.60)	2.22 (56.40)	2.00 (50.80)	11b 6oz (763g)

● Performance Data

Degrees of rotation vs Vacuum Level ("Hg)

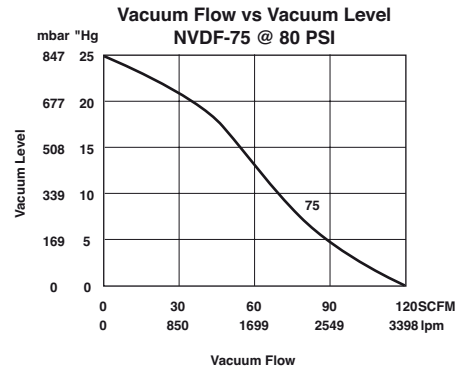
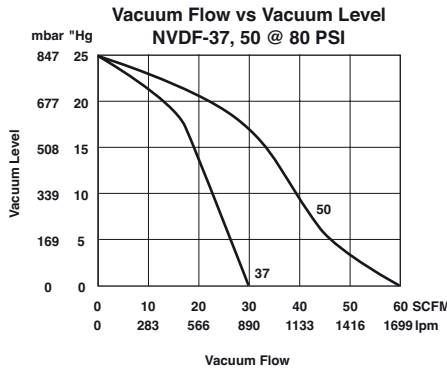
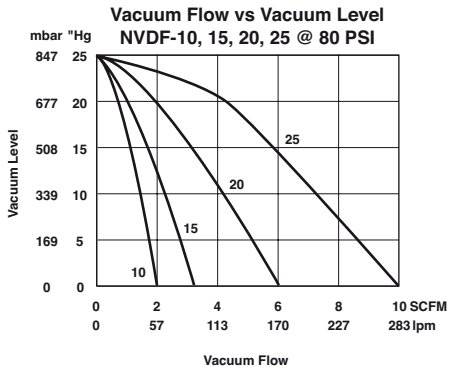


Model	Pressure	0"	3"	6"	9"	12"	15"	18"	21"	24"	25"
NVDF-10	@ 80PSI	0	30	60	100	115	120	125	130	134	135
	@ 60PSI	0	60	70	80	90	110	120	140	160	170
NVDF-15	@ 80PSI	0	80	90	105	120	135	145	150	160	165
	@ 60PSI	0	90	100	110	120	130	145	165	19-0	195
NVDF-20	@ 80PSI	0	90	105	120	150	160	170	175	185	190
	@ 60PSI	0	100	135	165	175	185	200	215	235	240
NVDF-25	@ 80PSI	0	100	140	180	195	210	250	275	340	355
	@ 60PSI	0	145	180	205	260	320	370	440	510	530
NVDF-37	@ 80PSI	0	60	90	100	125	155	180	195	220	230
	@ 60PSI	0	65	90	115	165	190	210	255	290	300
NVDF-50	@ 80PSI	0	80	130	170	200	260	340	390	460	490
	@ 60PSI	0	100	170	190	260	360	420	480	560	600
NVDF-75	@ 80PSI	0	95	170	260	350	450	540	630	710	730
	@ 60PSI	0	145	260	350	475	610	730	1080	1370	1440

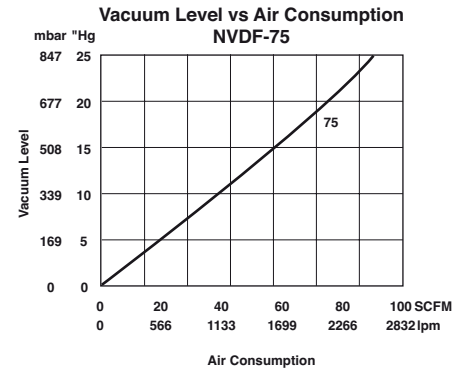
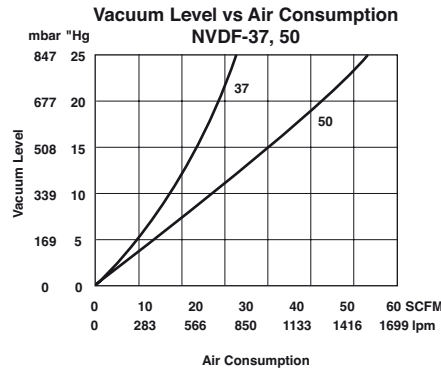
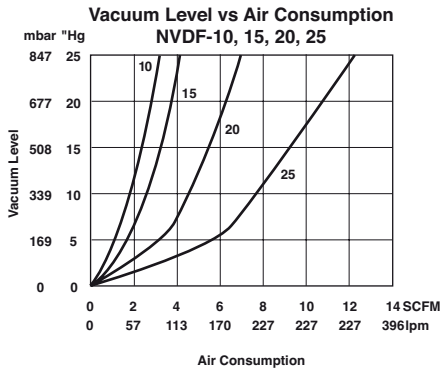
● Performance Data

Model	Vacuum Level "Hg (mbar)	0"Hg (0)	3"Hg (102)	6"Hg (203)	9"Hg (305)	12"Hg (406)	15"Hg (508)	18"Hg (609)	21"Hg (711)	24"Hg (813)	25"Hg (846)
NVDF-10	Vacuum Flow SCFM (L/min)	2.00 (56.6)	1.80 (51)	1.60 (45.30)	1.40 (39.60)	1.30 (36.80)	1.20 (34)	1.10 (31.20)	0.75 (21.20)	0.25 (7.10)	0 (0)
	Evacuation time (seconds)	0 (0)	3.34 (0.10)	7.95 (0.30)	13.6 (0.50)	20.53 (0.70)	28.48 (1)	38.74 (1.40)	53.88 (1.90)	84.15 (3)	104.94 (3.70)
NVDF-15	Vacuum Flow SCFM (L/min)	3.20 (90.60)	2.80 (79.30)	2.50 (70.80)	2.20 (62.30)	1.80 (51)	1.60 (45.30)	1.30 (36.80)	0.90 (25.50)	0.40 (11.30)	0 (0)
	Evacuation time (seconds)	0 (0)	2.57 (0.10)	5.90 (0.20)	15.30 (0.40)	15.39 (0.50)	22.06 (0.80)	31.05 (1.10)	46.18 (1.60)	75.69 (2.70)	97.5 (3.40)
NVDF-20	Vacuum Flow SCFM (L/min)	6.00 (169.90)	5.60 (158.60)	5.00 (141.60)	4.20 (118.90)	3.60 (102)	3.00 (85)	2.60 (73.60)	1.80 (51)	0.90 (25.50)	0 (0)
	Evacuation time (seconds)	0 (0)	1.03 (0)	2.57 (0.10)	4.11 (0.10)	6.41 (0.20)	9.49 (0.30)	13.34 (0.50)	19.50 (0.70)	31.05 (1.10)	38.23 (1.30)
NVDF-25	Vacuum Flow SCFM (L/min)	10.00 (283.20)	9.20 (260.50)	8.30 (235.10)	7.50 (212.40)	6.60 (186.90)	5.80 (164.30)	5.20 (147.30)	3.80 (107.60)	1.30 (36.80)	0 (0)
	Evacuation time (seconds)	0 (0)	0.51 (0)	1.03 (0)	1.80 (0.10)	2.82 (0.10)	4.11 (0.10)	5.90 (0.20)	9.75 (0.30)	17.19 (0.60)	21.55 (0.80)
NVDF-37	Vacuum Flow SCFM (L/min)	30.00 (849.60)	27.00 (764.60)	25.00 (708)	23.00 (651.40)	21.00 (594.70)	18.00 (509.80)	16.00 (453.10)	11.00 (311.50)	3.00 (85)	0 (0)
	Evacuation time (seconds)	0 (0)	0 (0)	0.51 (0)	1.03 (0)	1.28 (0)	2.05 (0.10)	3.08 (0.10)	4.87 (0.20)	8.47 (0.30)	12.83 (0.50)
NVDF-50	Vacuum Flow SCFM (L/min)	60.00 (1699.20)	52.00 (1472.60)	45.00 (1274.40)	41.00 (1161.10)	38.00 (1076.20)	35.00 (991.20)	28.00 (793)	19.00 (538.10)	5.00 (141.60)	0 (0)
	Evacuation time (seconds)	0 (0)	0 (0)	0.20 (0)	0.48 (0)	0.73 (0)	1.08 (0)	1.54 (0.10)	2.73 (0.10)	4.45 (0.20)	6.92 (0.20)
NVDF-75	Vacuum Flow SCFM (L/min)	120.00 (3398.40)	99.00 (2803.70)	83.00 (2350.60)	74.00 (2095.70)	62.00 (1755.80)	51.00 (1444.30)	46.00 (1302.70)	34.00 (962.90)	9.00 (254.90)	0 (0)
	Evacuation time (seconds)	0 (0)	0 (0)	0 (0)	0 (0)	0.12 (0)	0.38 (0)	0.7 (0)	1.09 (0)	3.07 (0.10)	5.38 (0.20)

NVDF Series – Vacuum Flow vs. Vacuum Level



NVDF Series – Vacuum Level vs. Air Consumption



## ● Performance Data

Part Numer	Silencer	With Silencer		Without Silencer	
		Open Flow	Sealed Vacuum	Open Flow	Sealed Vacuum
NVDF-10-P**-S05M**	NST4	70db	68db	88db	76db
NVDF-15-P**-S05M**	NST4	74db	68db	88db	90db
NVDF-20-P**-S05M**	NST4	78db	80db	86db	100db
NVDF-20-P**-S06M**	NST4A	76db	80db	86db	100db
NVDF-25-P**-S06M**	NST4A	82db	80db	90db	100db
NVDF-25-P**-S07M**	NST4A2	84db	82db	90db	100db
NVDF-37-P**-S11M**	NST8B	88db	82db	102db	104db
NVDF-50-P**-S20M**	NST12C	82db	78db	96db	100db
NVDF-75-P**-S21M**	NST16C	98db	88db	112db	108db

Noise levels at 80PSI

## Operating Instructions

- Loosen jam nut by rotating counter-clockwise. (Typically, unless pinned, your NVDF will arrive completely closed.)
- Rotate exhaust body clockwise until closed, jam nut should be loose on exhaust body.
- Attach air line to air supply port and vacuum line to vacuum port or connect cup to port. See chart for minimum recommended line sizes.
- Turn on compressed air.
- Rotate exhaust body counter-clockwise to the desired vacuum level using rotation chart on page 102.

Charts are based on 80 PSI [5.5 bar] and 60 PSI [4.1 bar] to provide a starting point. Pumps will achieve maximum vacuum levels at any pressure above 50 PSI [3.4 bar] (pressure regulator is not required). For a more precise reading, IMI Norgren recommends the use of a NVG-150 Vacuum Gauge to measure and/or set vacuum level. Consult factory.

- After achieving desired vacuum level, tighten jam nut by rotating clockwise.

Note 1: Further rotation will increase the vacuum level, while the flow remains constant.

Note 2: NVDF-37 and larger, it may be necessary to turn compressed air off while making adjustments to relieve pressure on threads and make rotating easier.

Note 3: "Preset" NVDF's are permanently locked at the factory at a customer specified vacuum level and are not adjustable.

Note 4: "Preset" pumps are not returnable.

### Warnings

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end user is responsible for verifying that all requirements for the application are met.

### Warranty

The products described herein are warranted subject to seller's Standard Terms and Condition of Sale, available at seller's website.