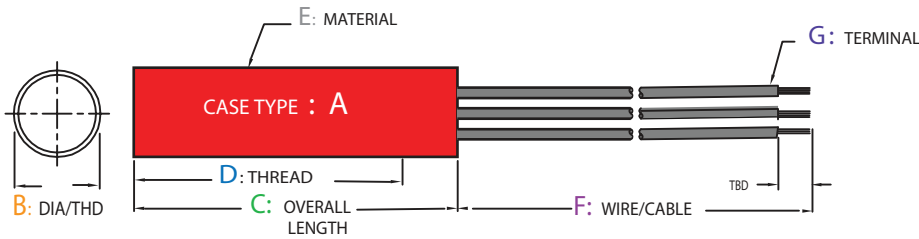
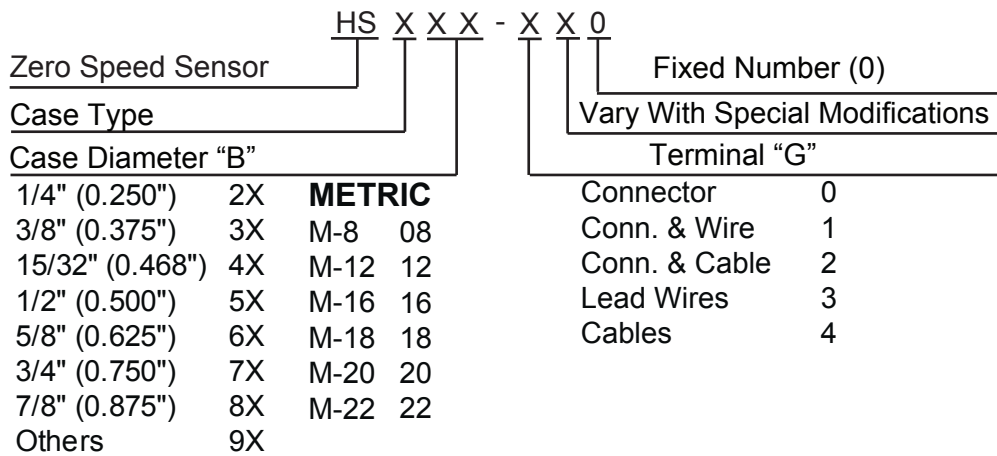


# HS Part Number Nomenclature

The standard part number includes the sensor type, case type, case diameter, terminal type as well as any special modifications. Please contact Sensoronix if you need more detailed information.



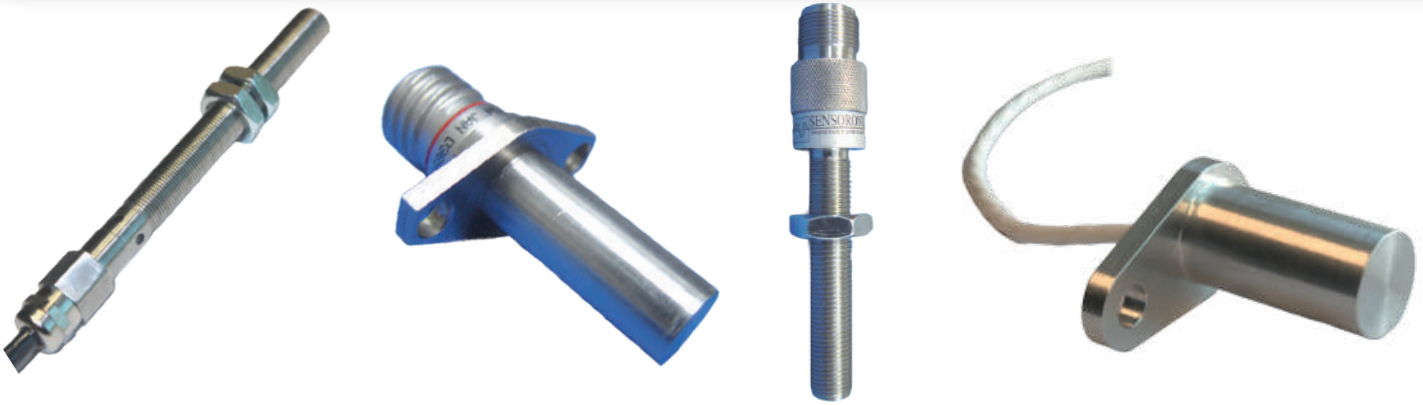
CASE TYPES	DESCRIPTION	A
	SMOOTH	0
	ALL THREAD	1
	HEX HEAD	2
	KNURL HEAD	3
	CONNECTOR HEAD	4
	WRENCH FLAT HEAD	5
	SMOOTH / THREAD	6
	WITH FLANGE	7



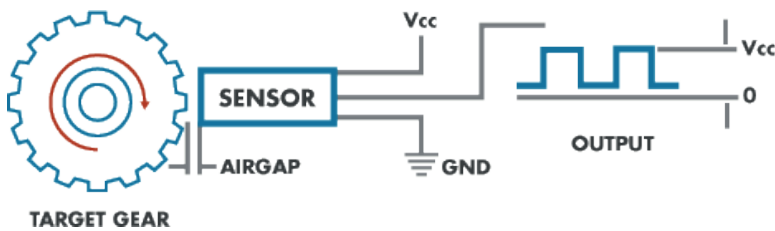
**AS9100**  
CERTIFIED  
ISO 9001



# Hall - Effect Zero Speed Sensor (HS)



Non-contact magnetic sensors that measure the distortion of magnetic field created by a ferrous target. Hall-Effect Zero speed sensors provide very precise measurements of movement even at zero speed which makes the Hall-Effect zero speed sensors ideal for speed measurements. Hall-Effect zero speed sensors provide digital output with constant amplitude signal regardless of variation of the speed.



Target: Ferrous Material Gear Tooth with range of Min 4 to 32 Gear Pitch

Frequency: 15 kHz Max

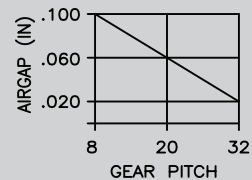
$$P = \frac{N + 2}{OD}$$

P = Gear Pitch  
N = Num. of Teeth  
OD = Outside Diameter

Output Type: Digital (Square Wave) TTL compatible



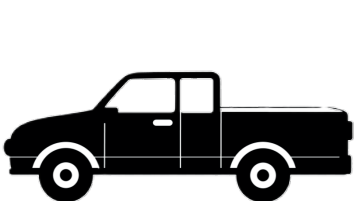
Gear Pitch vs. Airgap Graph



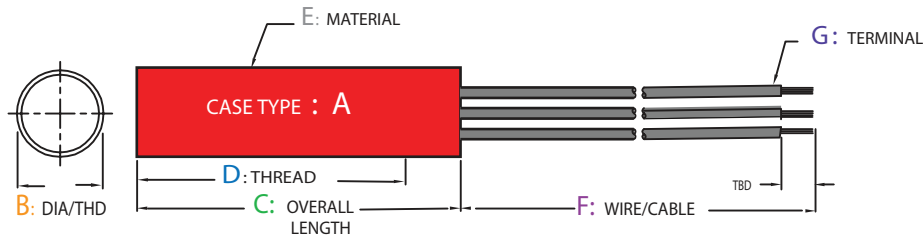
## Example of Common Applications

### Automotive, Aerospace, Off Highway & Marine

**Applications:** Race Car Speed Monitoring, Motorcycle Speed, Boat Propeller Speed, Airplane Cooling System, Helicopter Propeller Speed Measurement, Transmission, Engine Speed RPM, Crank Shaft Speed, Ignition Timing, Off Road Vehicles Speed, Exercise Equipment Speed Monitoring, Traction Control, Wheel Speed, Wood Chopping, Fan Control, Dynamometers, Cement Mixers, Tractors, Harvesting Machines.



# Standard (HS) Products Available



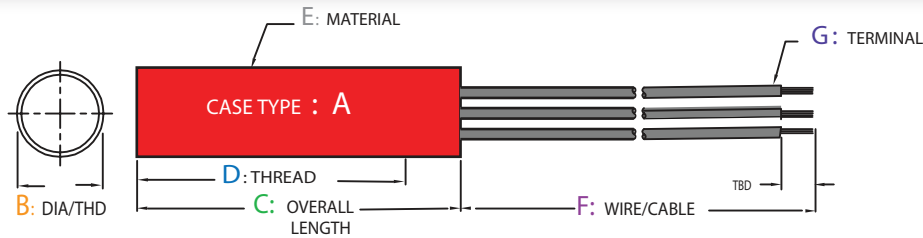
Please contact Sensoronix for more detailed information on the standard sensors listed below.  
All products are custom designed to meet your exact specification requirements.

PART #	MECHANICAL SPECIFICATIONS							ELECTRICAL SPECIFICATIONS						ENVIRONMENT	
	A	B	C	D	E	F	G	INPUT VOLTAGE (VDC)	INPUT CURRENT (mA)	V OUT HIGH (VDC)	V OUT LOW (VDC)	OUTPUT CURRENT (mA)	PULL UP RESISTOR (K Ohm)	FRONT SEALED	TEMP RANGE (°C)
<b>1/4" Diameter Series</b>															
HS220-300	2	1/4 - 28	2.00	1.75	303 S.S.	72 ± .5	20 AWG, LEAD WIRES W/ TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 150
HS220-400	2	1/4 - 40	1.13	0.88	303 S.S.	12	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-20 to 150
HS220-410	2	1/4 - 40	1.50	0.63	303 S.S.	24 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	5.5 to 36	12	5.0	0.4	20 Sink	4.7	303 S.S.	-20 to 85
<b>5/16" Diameter Series</b>															
HS130-300	1	5/16 - 24	1.50	1.50	303 S.S.	12 ± 1	22 AWG LEAD WIRES W/ PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 90
HS130-400	1	5/16 - 24	1.50	1.50	303 S.S.	12 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-20 to 150
HS130-410	1	5/16 - 24	1.50	1.50	303 S.S.	36 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.4	25 Sink	Open	Epoxy	-20 to 150
<b>3/8" Diameter Series</b>															
HS030-300	0	3/8	1.40	-	Alum.	6 ± .25	26 AWG LEAD WIRES W/ PVC INS.	4.5 to 24	10	V Input	0.4	15 Sink	2	Epoxy	-25 to 90
HS030-400	0	3/8	2.50	-	Alum.	12 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	15 Sink	2	Epoxy	-25 to 105
HS230-200	2	3/8 - 24	1.48	1.23	303 S.S.	36 ± 3	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS. AND CONN. MATES W/: MS3106A	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-20 to 105
HS230-400	2	3/8 - 24	1.48	1.23	303 S.S.	36 ± 3	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-20 to 105
HS230-410	2	3/8 - 24	1.48	1.23	303 S.S.	36 ± 3	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-20 to 125
HS230-420	2	3/8 - 24	1.50	1.25	303 S.S.	36 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-20 to 150
HS230-430	2	3/8 - 24	1.50	1.25	303 S.S.	12	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-20 to 150
HS230-440	2	3/8 - 24	2.81	2.56	303 S.S.	24 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 150
HS230-450	2	3/8 - 24	1.50	1.25	303 S.S.	36	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	25 Sink	Open	303 S.S.	-20 to 100
HS230-460	2	3/8 - 24	1.50	1.25	303 S.S.	12 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 120
HS530-200	5	3/8 - 24	2.70	2.25	303 S.S.	36 ± .5	22 AWG, 3 CON. CBL. W/ PVC INS. AND CONN. DEUTSCH: DT04-3P	4.5 to 24	10	V Input	0.4	25 Sink	Open	303 S.S.	-25 to 85
HS530-400	5	3/8 - 24	1.25	1.25	303 S.S.	36 ± 3	28 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	303 S.S.	-25 to 85
HS530-410	5	3/8 - 24	2.70	2.25	303 S.S.	72 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-20 to 125
<b>15/32" Diameter Series</b>															
HS140-300	1	15/32 - 32	1.00	1.00	303 S.S.	12 ± .5	26 AWG, LEAD WIRES W/ PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 100
HS140-400	1	15/32 - 32	1.00	1.00	303 S.S.	12 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 100
<b>7/16" Diameter Series</b>															
HS140-410	1	7/16 - 20	1.75	1.75	303 S.S.	24 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	25 Sink	Open	303 S.S.	-40 to 105
<b>1/2" Diameter Series</b>															
HS050-300	0	1/2	1.11	-	Alum.	8 ± .25	26 AWG, LEAD WIRES W/ PVC INS.	4.5 to 18	10	V Input	0.4	13 Sink	2	Epoxy	-25 to 100
HS050-400	0	1/2	1.00	-	303 S.S.	36 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.8 to 18	10	V Input	0.4	13 Sink	2	Epoxy	-40 to 105
HS150-200	1	1/2 - 20	2.56	2.56	303 S.S.	12.5	22 AWG, 3 CON. CBL. W/ TEFF. INS. AND CONN: M12x1, 4 PINS	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 150
HS150-400	1	1/2 - 32	1.25	1.25	303 S.S.	9 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.8 to 18	10	V Input	0.4	13 Sink	2	Epoxy	-40 to 105
HS150-410	1	1/2 - 20	2.56	2.56	303 S.S.	24 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 150
HS150-420	1	1/2 - 32	1.25	1.25	303 S.S.	120 ± 2	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.8 to 24	10	V Input	0.6	13 Sink	2	Epoxy	-40 to 105
HS750-200	7	.565	1.33	1.08	303 S.S.	4 ± .5	22 AWG, 3 CON. CBL. W/ TEFF. INS. AND CONN DELPHI: 12129615	4.5 to 24	14	V Input	0.4	25 Sink	Open	303 S.S.	-40 to 125
HS750-400	7	.545	1.18	1.18	Alum.	12 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	303 S.S.	-40 to 125

\*Electrical Protections  
**Supply Voltage** : 40VDC  
**Reverse Polarity** : -50V Reverse Transient  
**Load Dump** : 60V  
 \*\* EMC Protection Included  
 \*\*\* Omnipolar (Magnetoresistive)

**ADDITIONAL PARTS LISTED ON NEXT PAGE**

# Standard (HS) Products Available



Please contact Sensoronix for more detailed information on the standard sensors listed below.  
All products are custom designed to meet your exact specification requirements.

PART #	MECHANICAL SPECIFICATIONS						ELECTRICAL SPECIFICATIONS						ENVIROMENT		
	A	B	C	D	E	F	G	INPUT VOLTAGE (VDC)	INPUT CURRENT (mA)	VOUT HIGH (VDC)	VOUT LOW (VDC)	OUTPUT CURRENT (mA)	PULL UP RESISTOR (K Ohm)	FRONT SEALED	TEMP RANGE (°C)
<b>5/8" Diameter Series</b>															
HS160-120	1	5/8 - 18	6.00	6.00	303 S.S.	4 ± .50	18 AWG, SXL LEAD WIRES AND DEUTSCH CONN: DT04-3P	4.5 to 24	12	V Input	0.6	20 Sink	4.7	303 S.S.	-25 to 125
HS160-400	1	5/8 - 18	6.00	6.00	303 S.S.	120 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS. CBL. W/ CONN BRAD HARISON OR TURCK MICTO CHANGE	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-25 to 125
HS360-210	3	5/8 - 18	2.50	2.00	303 S.S.	9 ± .5	22 AWG, 3 CON. CBL. W/ PVC INS. AND PACKARD CONN: 1201 0717	4.5 to 24	9	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 100
HS360-220	3	5/8 - 18	2.72	2.14	303 S.S.	72 ± 2	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 125
HS360-400	3	5/8 - 18	2.72	2.14	303 S.S.	72 ± 2	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 125
HS360-410	3	5/8 - 18	2.50	2.00	303 S.S.	36	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 125
HS460-000	4	5/8 - 18	3.27	2.14	303 S.S.	-	3 PINS AMPHENOL CONN: MATE W/ MS3106A	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-25 to 125
HS460-010	4	5/8 - 18	5.13	4.00	303 S.S.	-	3 PINS AMPHENOL CONN: MATE W/ MS3106A	4.5 to 24	15	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 125
HS460-020	4	5/8 - 18	2.33	1.20	303 S.S.	-	3 PINS AMPHENOL CONN: MATE W/ MS3106A	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-25 to 125
HS460-050	4	5/8 - 18	2.96	1.87	303 S.S.	-	3 PINS AMPHENOL CONN: MATE W/ MS3106A	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-25 to 125
* HS460-060	4	5/8 - 18	3.27	2.14	303 S.S.	-	3 PINS AMPHENOL CONN: MATE W/ MS3106A	5.5 to 36	9	5.0	0.6	20 Sink	4.7	Epoxy	-20 to 125
HS560-200	5	5/8 - 18	3.00	2.63	303 S.S.	12.5	22 AWG, 3 CON. CBL. W/ TEFF. INS. AND CONN: M12X1, 4 PINS	4.5 to 24	10	V Input	0.4	20 Sink	4.7	303 S.S.	-25 to 125
HS560-400	5	5/8 - 18	2.50	2.13	303 S.S.	480 ± 2	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	Epoxy	-25 to 125
HS560-410	5	5/8 - 18	3.00	2.63	303 S.S.	72 ± 2	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.4	20 Sink	4.7	303 S.S.	-25 to 125
<b>3/4" Diameter Series</b>															
HS070-400	0	3/4	3.00	-	303 S.S.	300 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS. 22 AWG, 3 CON. CBL. W/ PVC INS. AND DEUTSCH CONN: DT04-3P	4.8 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 105
* HS270-200	2	3/4 - 16	4.00	3.37	303 S.S.	12 ± 1	18 AWG LEAD WIRES W/PVC INS.	5.5 to 36	12	V Input	0.4	20 Sink	4.7	Epoxy	-40 to 105
HS270-300	2	3/4 - 16	2.34	2.00	Alum.	3.5 ± .5	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 105
HS270-400	2	3/4 - 16	2.34	2.00	303 S.S.	120 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.8 to 24	10	V Input	0.6	25 Sink	Open	Epoxy	-40 to 105
HS270-410	2	3/4 - 16	4.00	3.66	Alum.	72 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.8 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 105
HS270-420	2	3/4 - 16	2.34	2.00	Alum.	36 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 105
HS270-430	2	3/4 - 16	2.30	1.87	Alum.	8 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	9	V Input	0.4	20 Sink	4.7	Epoxy	-20 to 100
HS270-440	2	3/4 - 16	3.00	2.66	Alum.	36 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	5.5 to 24	10	V Input	0.4	50 Sink	4.7	Epoxy	-40 to 105
HS270-450	2	3/4 - 16	3.00	2.57	Alum.	240 ± 3	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	5.5 to 24	75	V Input	0.4	150 Sink	4.7	Epoxy	-40 to 105
HS470-020	4	3/4 - 16	3.12	2.00	303 S.S.	-	4 PINS, CONN: M12 X 1, 4 PINS	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 105
* HS570-200	5	3/4 - 16	4.50	4.10	303 S.S.	12 ± 1	3 PINS AMPHENOL CONN: MATE W/ MS3106A	5.5 to 36	9	5.0	0.6	20 Sink	4.7	303 S.S.	-40 to 105
* HS570-210	5	3/4 - 16	4.50	4.10	303 S.S.	6 ± .5	22 AWG, 3 CON. CBL. W/ TEFF. INS. AND CONN: M12 X1, 4 PINS	5.5 to 36	15	V Input	0.4	50 Source	4.7	303 S.S.	-40 to 107
* HS570-220	5	3/4 - 16	3.00	2.60	303 S.S.	6 ± .5	22 AWG, 3 CON. CBL. W/ TEFF. INS. AND CONN: M12 X1, 4 PINS	5.5 to 36	15	V Input	0.4	50 Source	4.7	303 S.S.	-40 to 107
<b>M12 Diameter Series</b>															
HS312-300	3	M12 x 1.0	2.56	1.80	303 S.S.	12 ± .25	26 AWG. LEAD WIRE W/ PVC INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 100
HS312-400	3	M12 x 1.0	2.56	1.80	303 S.S.	24 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, PVC INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	Epoxy	-40 to 100
HS312-420	3	M12 x 1.0	3.06	2.00	303 S.S.	39.4 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-40 to 125
<b>M18 Diameter Series</b>															
* HS218-200	2	M18 x 1.5	2.80	2.05	303 S.S.	39 ± .5	22 AWG, 3 CON. CBL. W/PVC INS. AND CONN: DEUTSCH: DT04-3P	5.5 to 36	15	V Input	0.4	50 Source	4.7	303 S.S.	-40 to 125
HS218-400	2	M18 x 1.5	2.60	0.98	303 S.S.	48 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	10	V Input	0.6	20 Sink	4.7	303 S.S.	-30 to 140
HS218-410	2	M18 x 1.5	2.36	2.05	303 S.S.	48 ± 1	22 AWG, 3 CON. CBL. W/ SHLD, TEFF. INS.	4.5 to 24	15	V Input	0.4	50 Source	4.7	303 S.S.	-40 to 140
HS218-420	2	M18 x 1.5	2.80	2.05	303 S.S.	39 ± .5	22 AWG, TEFF. CBL W/ DEUTSCH CONN.	5.5 to 36	15	V Input	0.4	50 Source	4.7	303 S.S.	-40 to 125

\*Electrical Protections  
**Supply Voltage** : 40VDC  
**Reverse Polarity** : -50V Reverse Transient  
**Load Dump** : 60V