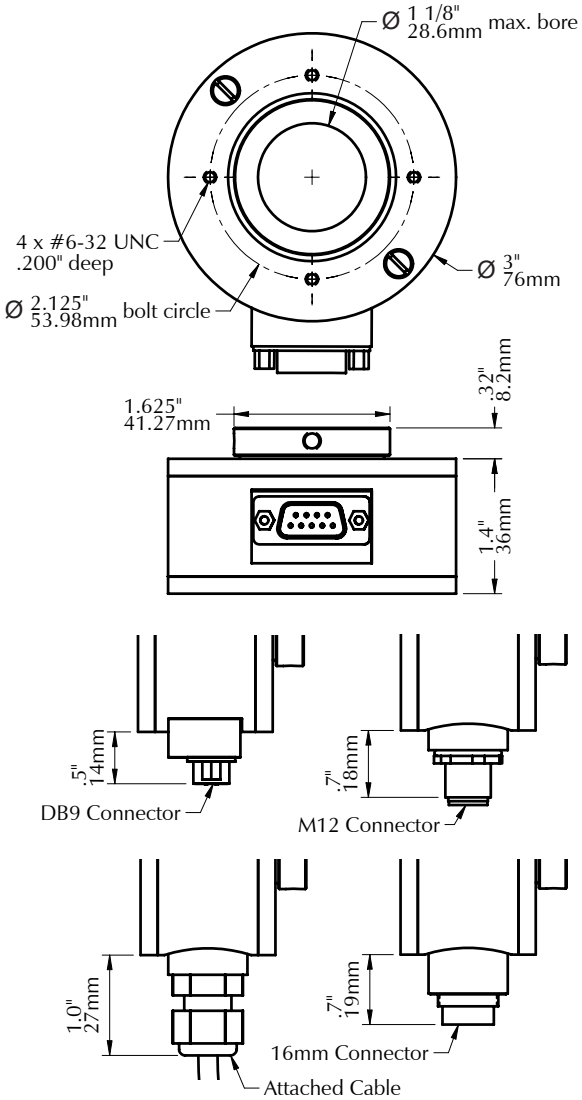
MODEL HS30 — Series 30 Hollow Shaft Encoder

FEATURES

- **Up to 1-1/8" or 28.6mm shaft bore diameter**
- **Heavy Duty bearings**
- **Unbreakable code disk**
- **Size 30 housing**
- **Short circuit and ESD protected**
- **Up to 1024 pulses per revolution**
- **Attached cable, or DB9, 16mm or M12 connector**
- **IP65 protection available - see Model HS31**

DIMENSIONS

(shown with DB9 connector, 1-1/8" / 28.6mm shaft bore)



SPECIFICATIONS

Mechanical

Shaft Bore: Any up to 1-1/8" / 28.6mm
Maximum Speed: 6,000 rpm
Shaft Loading:
— Radial: 30 lbs. / 13.6 kg
— Axial: 20 lbs. / 9.1 kg
A flexible mounting bracket is recommended.
Bearing Life: 44 x 1,000,000/rpm = hours
Materials:
— Case: Aluminum, anodized
— Shaft: Aluminum
Weight: 10.5 - 12.5 oz. (298 - 355 grams)
Enclosure rating: IP50

Electrical Connections

Single Ended Outputs:

DB9	16mm	Function	Color
1	1	Common	Black
2	2	Supply voltage	Red
3	4	Output A	White
4	5	Output B	Green
5	3	Output Z	Brown
6-9	6	not used	-

Single Ended Outputs: M12 4-pin

M12	Function	Color
1	Supply voltage	Red / Brown
2	Output B	Green / White
3	Common	Black / Blue
4	Output A	White / Black

Differential Line Driver Outputs:

DB9	16mm	Function	Color
1	5	Common	Black
2	4	Supply voltage	Red
3	1	Output +A	White
4	2	Output +B	Green
5	3	Output +Z	Yellow
6	6	Output -A	Blue/Green
7	7	Output -B	Brown
8	8	Output -Z	Orange
9	-	not used	-

Connectors:
DB9: D-Sub 9-pin.
16mm: Amphenol T3402000 (6-pin) or T3506000 (8-pin) or equivalent.
M12: 4-pin Turck FS4.4/18.25 or equivalent.

Electrical

Supply Voltages: (specify when ordering)
5Vdc or 8-30Vdc
Current: 50mA max (no load)
100mA max (line driver)
Pulse Rate: 0 - 30 kHz
Pulses per Revolution: (specify when ordering)
1-240, 500, 512, 1000, 1024
Operating Temperature: 0° to 70°C
Output Circuit: (specify when ordering)
Output voltage level is approximately the same as the input voltage level.
Single Ended:
— 7273 open collector (30 VDC max, 50 mA max)
— 7272 Push-Pull (50 mA max source or sink)
Differential Line Driver:
— 7272 differential line driver (also with optional 5vdc output level)
Output Waveshape:
Square wave outputs A and B are 50/50 duty cycle nominal. Output Z (index output) is approximately the width of one cycle on outputs A or B. Output A leads B by 90° for clockwise rotation viewed from shaft collar end.
— Pulse symmetry: 180°±30%
— Pulse interval jitter: 30% max
— Quadrature: 90°±30% max
— Phase jitter: 30% max
Anti-jitter: (single output models only)
Increases the pulse hysteresis to ½ of a pulse width, eliminating the effects of mechanical vibration and possible false output pulses. For example a 10 pulse per revolution output has 18° hysteresis (i.e. 360° ÷ 10 × ½).

Accessories

See our website or contact us for more information about Cables, Mounting Brackets and other accessories.

MODEL NUMBER

HS30				—			/					
Model Number	**Shaft Bore:** **1.0** = 1", **.75** = 3/4", **.875** = 7/8", **M25** = 25mm, others are available	**Output Type:** leave blank for single output on A, **Q**=quadrature outputs on A and B	**Index Output:** leave blank for no index, **Z**=index output		**Pulses Per Revolution:** a number from 1 to 1024 *A one-time charge may apply for non-stock values.*	**Anti-jitter option:** leave blank for no anti-jitter, **AJ**=anti-jitter option (single output models only)		**Supply Voltage:** **5** or **8-30**	**Output Circuit:** leave blank for 7272 Push/Pull, **C**=7273 open collector, **DH**=7272 line driver, **DL**=7272 line driver with 5vdc output level	**Cable/Connector:** leave blank for attached 10-ft. / 3-meter cable (other lengths are available) **S** = 16mm, **S1**=DB9, **S3** = M12 connector	**Modification Number:** optional modification or special feature ID. Call or see our website.	**Accessories:** leave blank for no accessories. Call or see our website for more information.

Example: **HS301.0QZ-1024/8-30DHS1** - 1" shaft bore, quadrature and index outputs, 1024 ppr, 8-30Vdc, 7272 differential line driver, DB9 connector

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