

Universal, type 580X (shaft) / 582X (hollow shaft)



High rotational speed



Shock/vibration resistant



Magnetic field proof



Short-circuit proof



Reverse polarity protection

Rugged

- Short-circuit proof outputs
- Reverse connection protection (at +V= 10-30 VDC)
- Highly flexible PUR-cable
- High shaft load
- 5803/5823: High temperature up to 230°F (110°C)
- 5826: Stainless steel housing



Versatile

- Shaft/hollow shaft
- 5800/5820: Standard
- 5804/5824: Voltage sine wave outputs
- 5805: High resolution up to 36000 ppr
- Many variations, also customized versions

Compact

- Ø 58 mm housing, industry standard

Mechanical characteristics:

Speed with seal:	Shaft version: max. 12,000 RPM Hollow shaft version ¹⁾ : max. 6,000 RPM
Speed without seal:	Hollow shaft version max. 12,000 RPM
Rotor moment of inertia:	Shaft version: approx. 0.098 oz-in ² (1.8 x 10 ⁻⁶ kgm ²)
	Hollow shaft version: approx. 0.328 oz-in ² (6 x 10 ⁻⁶ kgm ²)
Starting torque:	Shaft version: < 1.4 oz-in (< 0.01 Nm) Hollow shaft version: < 7 oz-in (< 0.05 Nm)
Radial load capacity of the shaft*:	40 lbs (178 N)
Axial load capacity of the shaft*:	40 lbs (178 N)
Weight:	approx. 0.9 lbs (0.4 kg)

Protection acc. to EN 60 529 :	IP65, IP66 for type 5826
EX approval for hazardous areas:	optional zone 2 and 22
Working temperature:	-4 to +185°F (-20 to +85°C) ^{1) 2) 3)} 5803/5823: -4 to +221°F (-20 to + 105°C)
Materials:	Shaft: stainless steel
Shock resistance acc. to DIN-IEC 68-2-27:	approx. 100 g (1000 m/s ²), 6 ms
Vibration resistance acc. to DIN-IEC 68-2-6:	approx. 10 g (100 m/s ²), 10-2000 Hz

¹⁾ Constant flexing: -4 to +158°F (-20-+70°C)
²⁾ Non-condensing
³⁾ Hollow shaft version with seal: -4 to +176°F (-20-+80°C)
⁴⁾ For continuous operation 6,000 RPM, ventilated

Electrical characteristics sine wave output:

Output circuit:	Sine wave U = 1 Vpp	Sine wave U = 1 Vpp
Supply voltage:	5 V (±5%)	10-30 VDC
Current consumption (no load) with inverted signals:	typ. 65 mA / max. 110 mA	typ. 65 mA / max. 110 mA
-3 dB frequency:	≥180 kHz	max. ±30 mA
Pulse frequency:	max. 300 kHz	max. 300 kHz
Signal channels A/B:	1 Vpp (±20%)	1 Vpp (±20%)
Signal channels 0:	0.1-1.2 V	0.1-1.2 V
Short-circuit proof outputs ¹⁾ :	yes	yes
Reverse connection protection at +V:	no	yes
UL certified:	File 224618	
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3		
RoHS compliant acc. to EU guideline 2002/95/EG		

¹⁾ If supply voltage correctly applied

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Electrical characteristics RS422 / Push-pull:

Output circuit:	RS 422 (TTL compatible)	RS 422 (TTL compatible)	Push-pull (7272) ¹⁾	Push-pull (7272) ¹⁾	Open collector (7373)
Supply voltage:	5 V (±5 %) or 10-30 VDC	5-30 VDC	10-30 VDC	10-30 VDC	5-30 VDC
Power consumption (no load) without inverted signal:	-	-	typ. 55 mA / max. 125 mA	typ. 55 mA / max. 125 mA	100 mA
Power consumption (no load) with inverted signal:	typ. 40 mA / max. 90 mA	typ. 40 mA / max. 90 mA	typ. 80 mA / max. 150 mA	typ. 80 mA / max. 150 mA	100 mA
Permissible load/channel:	max. ±20 mA	max. ±20 mA	max. ±30 mA	max. ±30 mA	20 mA sink @ 30 VDC
Pulse frequency:	max. 300 kHz	max. 300 kHz	max. 300 kHz	max. 300 kHz	max. 300 kHz
Signal level high:	min. 2.5 V	min. 2.5 V	min. +V -2.5 V	min. +V -1.5 V	n/a
Signal level low:	max. 0.5 V	max. 0.5 V	max. 2.0 V	max. 2.0 V	n/a
Rise time t _r :	max. 200 ns	max. 200 ns	max. 1 μs	max. 1 μs	
Fall time t _f :	max. 200 ns	max. 200 ns	max. 1 μs	max. 1 μs	
Short-circuit proof outputs ¹⁾ :	yes ²⁾	yes ²⁾	yes	yes	yes
Reverse connection protection at +V:	5 V: no, 10-30 V: yes	yes	yes	no	no
UL certified:	File 224618				
Conforms to CE requirements acc. to EN 61000-6-1, EN 61000-6-4 and EN 61000-6-3					
RoHS compliant acc. to EU guideline 2002/95/EG					

¹⁾ If supply voltage correctly applied

²⁾ Only one channel allowed to be shorted-out: (If +V = 5 V, short-circuit to channel, 0 V, or +V is permitted) (If +V = 5-30 V, short-circuit to channel or 0 V is permitted)

Standard wiring / pin configuration:

Output:	Case Ground	Common (0 V)	+V	A	\bar{A}	B	\bar{B}	Z	\bar{Z}	-	-	Com / Sensor	+V Sensor
M23 <i>multifast</i> ®	Coupling Nut	10	12	5	6	8	1	3	4	-	-	11	2
MS 7-pin	G	F	D	A	-	B	-	C	-	-	-	-	E
MS 10-pin	J	F	D	A	G	B	H	C	I	-	-	-	E
M12 <i>eurofast</i> ®	Coupling Nut	1	2	3	4	5	6	7	8	-	-	-	-
Cable:	Shield/Drain	WH	BN	GN	YE	GY	PK	BU	RD	BK	VT	GY/PK	RD/BU

Special connector pin configuration:

Output Code	Output:	Case Ground	Common (0 V)	+V	A	\bar{A}	B	\bar{B}	Z	\bar{Z}	-	-
07	M23 <i>eurofast</i>	Coupling Nut	7	2	1	3	4	5	6	8	-	-
02	MS 7-pin	G	F	D	A	C	B	E	-	-	-	-
03	MS 7-pin	G	F	D	A	-	B	-	C	-	-	-
04	MS 7-pin	G	F	D	A	C	B	E	-	-	-	-
05	MS 7-pin	G	F	D	A	-	B	-	C	-	-	-
06	MS 10-pin	G	F	D	A	H	B	I	C	J	-	-

Wiring diagrams:

Male encoder view			
M12 <i>eurofast</i> pinout	M23 <i>multifast</i> pinout	MS pinout (7-pin)	MS pinout (10-pin)
Mating cordset: E-RKC 8T-930-*	Mating cordset: E-CK 12-931-*	Mating cordset: E-MK 7-930-*	Mating cordset: E-MK 10-931-*

* Length in meters.

Universal, type 580X (shaft) / 582X (hollow shaft)

Part number key: 580X shaft version

T8.580X.XXXX.XXXX.PXXXX

Options for special output only.

Type 0 = standard 3 = high temperature 4 = sine wave 5 = high resolution	Flange 1 = Ø 58 clamping flange 2 = Ø 58 servo flange M = 2.5" (Ø 63.5 mm) square flange P = 2.5" (Ø 63.5 mm) servo flange S = 2.62" (Ø 66.5 mm) servo flange Z = 2.5" (63.5 mm) square flange with shaft seal	Shaft (Ø x L) 1 = Ø 6 mm x 10 mm 2 = Ø 10 mm x 20 mm B = Ø 1/4" x 7/8" P = Ø 3/8" x 7/8" W = Ø 8 mm x 20.5 mm	Output and voltage supply Type 5800 4 = 5 VDC, RS422 * 5 = 10-30 VDC, RS422 * 6 = 10-30 VDC, push-pull * 7 = 10-30 VDC, push-pull ** 8 = 5-30 VDC, push-pull 9 = 5-30 VDC, push-pull * R = 5-30 VDC, open collector (7273) T = 5-30 VDC, push-pull * Type 5803 and 5805²⁾ 4 = 5 VDC, RS422 * 5 = 10-30 VDC, RS422 * 6 = 10-30 VDC, push-pull * 7 = 10-30 VDC, push-pull ** 9 = 5-30 VDC, push-pull (IC-WE) R = 5-30 VDC, open collector (7273) T = 5-30 VDC, line driver (7272) Y = 5-30 VDC, RS422 * Type 5804²⁾ 1 = 5 VDC, sine, 1 Vpp * 2 = 10-30 VDC, sine, 1 Vpp *
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Special connector pin configuration See page C25	Special Output Signal Formats See page C42
Pulse rate 1, 5, 10, 15, 20, 25, 30, 50, 60, 100, 125, 200, 250, 256, 300, 360, 500, 512, 600, 700, 720, 800, 900, 1000, 1024, 1200, 1250, 1500, 1800, 2000, 2048, 2400, 2500, 3000, 3600, 4000, 4096, 5000 Type 5805: 6000, 7200, 8000, 8192, 9000, 10000, 18000, 20000, 36000 (e.g. 250 pulses => 0250) Other pulse rates available on request	
Type of connection 1 = axial cable (1 m PUR cable) 2 = radial cable (1 m PUR cable) 3 = axial 12-pin M23 multifast ® plug without mating connector 5 = radial 12-pin M23 multifast plug without mating connector D = axial MS, 10-pin (MS 3102R18-1P) G = radial 8-pin M12 eurofast ® connector T = axial 8-pin M12 eurofast connector W = radial 7-pin plug, "MIL"-specified ¹⁾ without mating connector Y = radial 10-pin plug, "MIL"-specified ¹⁾ without mating connector Z = axial MS, 7-pin (MS 3102R165-1P)	

¹⁾ Only for type 5800
²⁾ P04XX is the only option code for 5804 and 5805
 * With inverted signal
 ** Without inverted signal

Part number key: 582X hollow shaft version

T8.582X.XXXX.XXXX.PXXXX

Options for special output only.

Type 0 = standard 3 = high temperature 4 = sine wave 5 = high resolution 6 = stainless steel	Flange 1 = flange for through shaft 2 = flange for blind hollow shaft ¹⁾ 3 = flange for through shaft and flex mount 4 = flange for blind hollow shaft and flex mount ¹⁾ length of drive shaft ≤ 30 mm	Hollow shaft 1 = Ø 6 mm without seal 2 = Ø 6 mm with seal 3 = Ø 8 mm without seal 4 = Ø 8 mm with seal 5 = Ø 10 mm without seal 6 = Ø 10 mm with seal ²⁾ 7 = Ø 12 mm without seal 8 = Ø 12 mm with seal ²⁾ A = Ø 1/2" B = Ø 1/4" K = Ø 3/8" with seal R = Ø 3/8" S = Ø 1/4" with seal U = Ø 1/2" with seal
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¹⁾ Not for type 5826
²⁾ For type 5826 only.
 * With inverted signal.

Accessories:

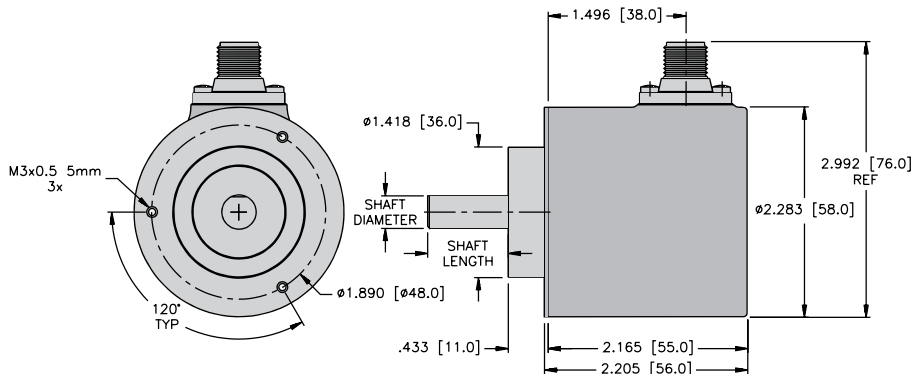
- See page J1, Connectivity, for cables and connectors
- See page E1, Accessories, for mounting attachments and couplings

Special connector pin configuration See page C25	Special Output Signal Formats See page C42
Pulse rate 1, 5, 10, 15, 20, 25, 30, 50, 60, 100, 120, 125, 150, 180, 200, 240, 250, 256, 300, 360, 400, 500, 512, 600, 700, 720, 800, 900, 1000, 1024, 1200, 1250, 1500, 1800, 2000, 2048, 2400, 2500, 3000, 3600, 4000, 4096, 5000 Type 5825: 6000, 7200, 8000, 8192, 9000, 10000, 18000, 20000, 36000 (e.g. 250 pulses => 0250) Other pulse rates available on request	
Type of connection 1 = radial cable (1 m PVC-cable) 2 = radial 12-pin M23 multifast plug without mating connector C = radial 8-pin M12 eurofast connector	
Output and voltage supply Type 5820 and 5826 1 = 5 VDC, RS422 * 3 = 10-30 VDC, push-pull * 4 = 10-30 VDC, RS422 * 6 = 5-30 VDC, push-pull * 7 = 5-30 VDC, RS422 * Type 5823 and 5825 1 = 5 VDC, RS422 * 3 = 10-30 VDC, push-pull * 4 = 10-30 VDC, RS422 * Type 5824 1 = 5-30 VDC, sine, 1 Vpp * 2 = 10-30 VDC, sine, 1 Vpp *	

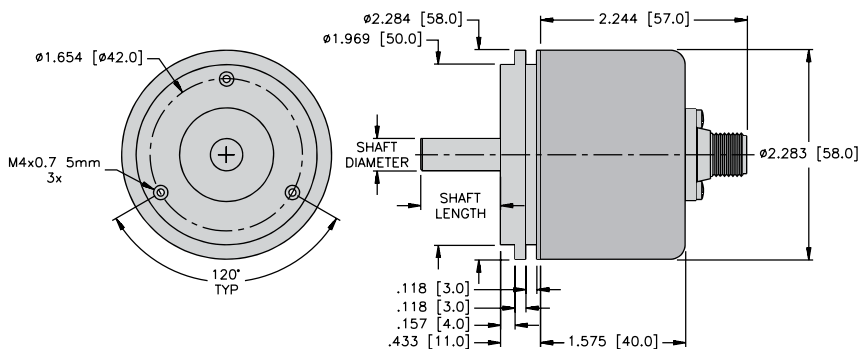
Universal, type 580X (shaft) / 582X (hollow shaft)

Dimensions: 580X shaft version

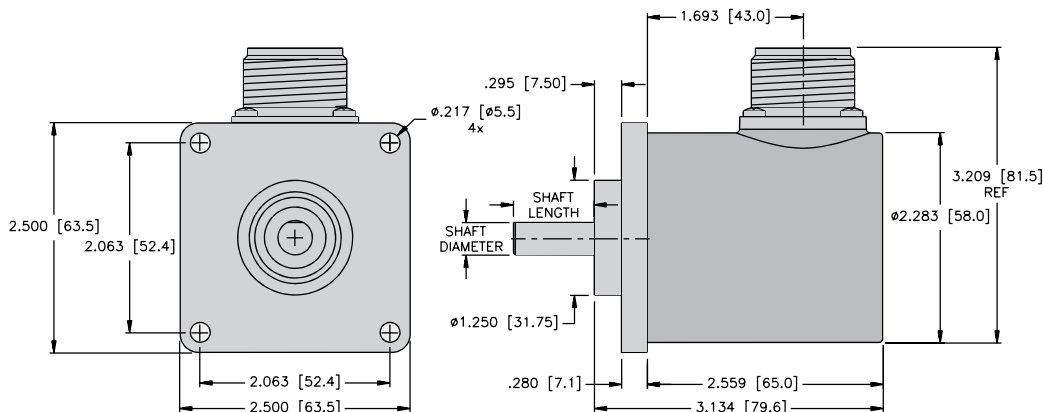
580X flange 1
Connection G



580X flange 2
Connection T



580X flange M & Z
Connection W & Y



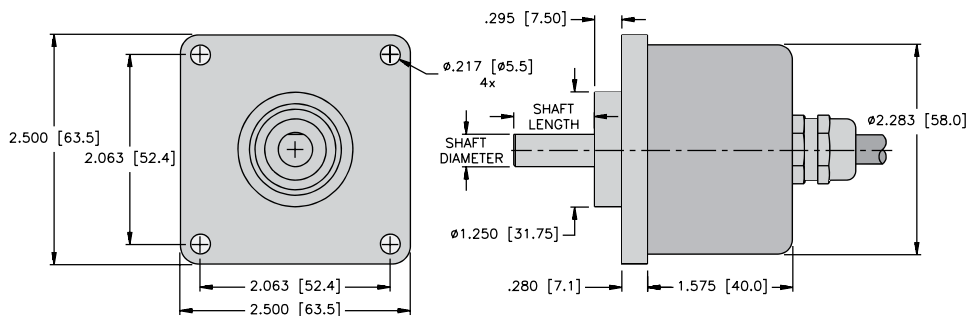
Mounting advice:

The flanges and shafts of the encoder and drive should not be rigidly coupled together at the same time. We recommend the use of suitable couplings (see page E1, Accessories).

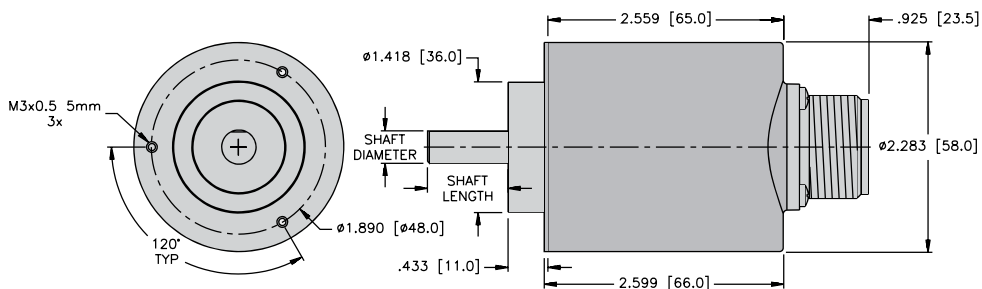
Universal, type 580X (shaft) / 582X (hollow shaft)

Dimensions: 580X shaft version

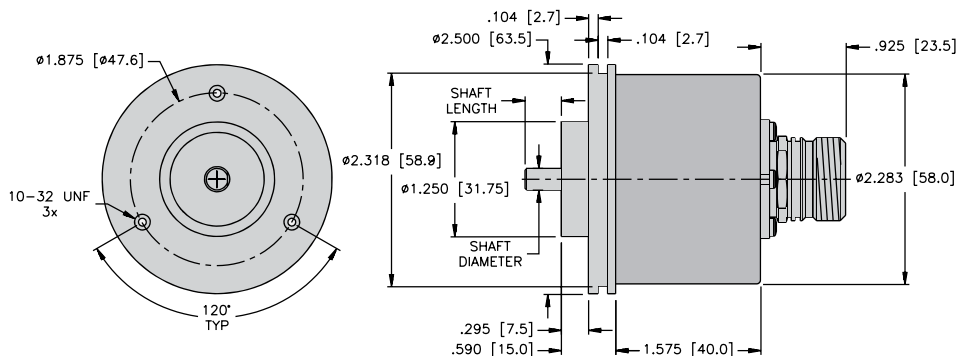
580X flange M & Z
Connection 1



580X flange 1
Connection D & Z



580X flange P
Connection 3



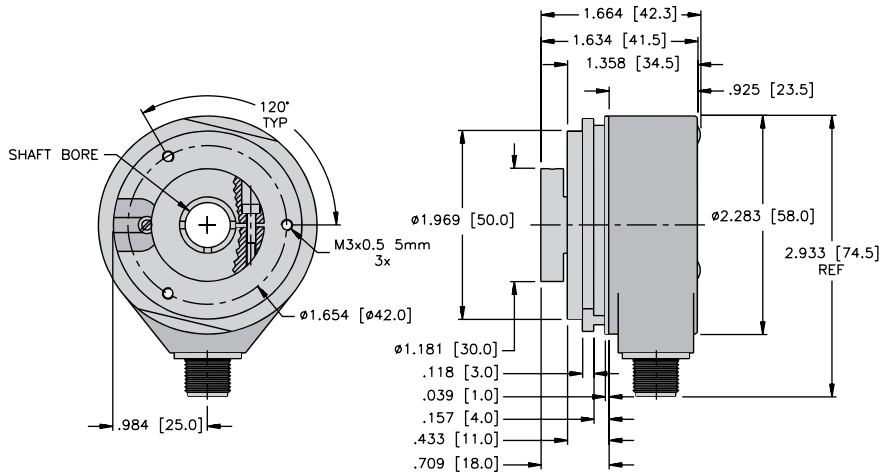
Mounting advice:

The flanges and shafts of the encoder and drive should not be rigidly coupled together at the same time. We recommend the use of suitable couplings (see page E1, Accessories).

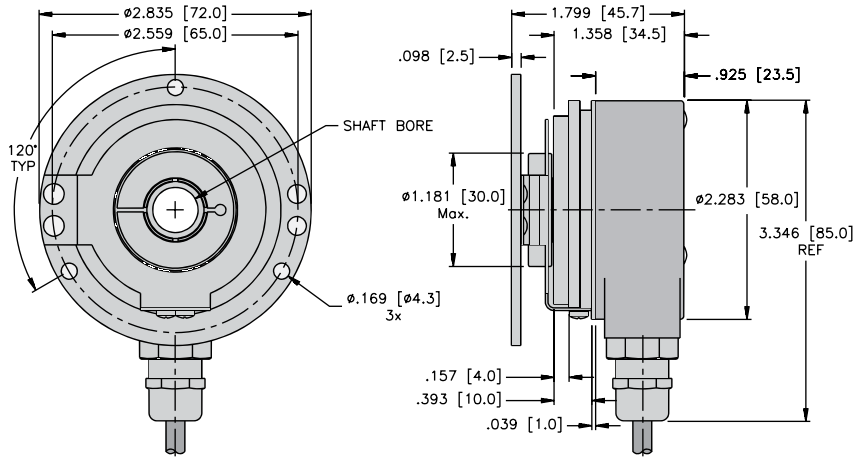
Universal, type 580X (shaft) / 582X (hollow shaft)

Dimensions: 582X hollow shaft version

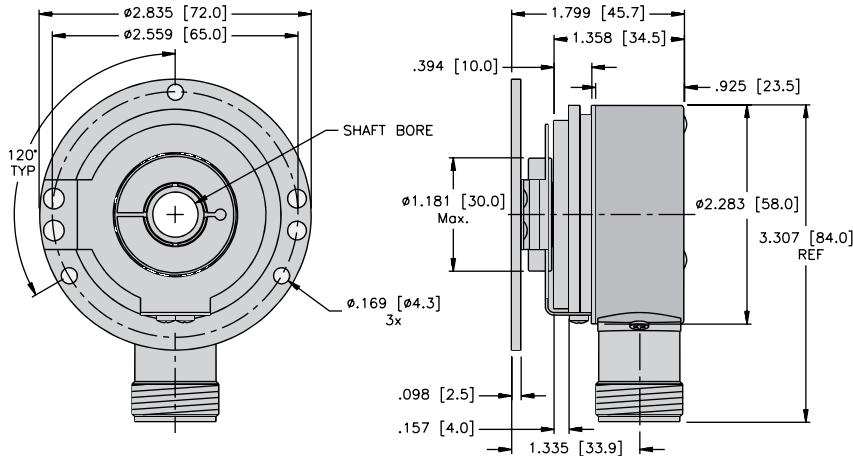
582X flange 1
Connection 2



582X flange 3
Connection 1



582X flange 2
Connection C



Mounting advice:

The flanges and shafts of the encoder and drive should not be rigidly coupled together at the same time.

When mounting a hollow shaft encoder, we recommend using a torque stop pin or a flex bracket (see page E1, Accessories).