



1986 RESOLVER CATALOG

Absolute Rotary Sensing for the Most Demanding Applications



The Resolver Story

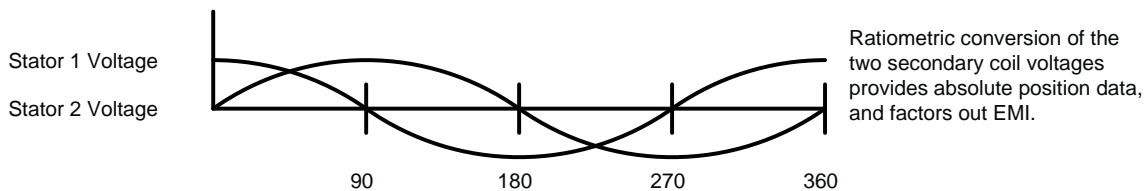


power is lost and restored, the exact position data will be communicated. In long cable runs a resolver signal can typically go much further than other technologies. Resolvers have long been the standard rotary position method in packaging, primary metals manufacturing, stamping, automotive, tire and rubber, paper mills and mining.

GEMCO 1986 resolvers have been the preferred source for rugged and accurate rotary positioning in a variety of industrial applications. The brushless resolver works on the same principle as a rotary transformer to couple power in the rotor. The internal brushless resolver has three separate windings: a reference winding, a SIN winding and a COS winding. The reference winding is excited by an AC voltage. The SIN and COS winding are set 90° apart and provide two different output voltages whose ratio represent absolute position of the shaft.

The advantage of resolver transducers over other rotary position products is that resolvers hold up better in harsh environments and they are always absolute, so if

GEMCO has always been a pioneer in the design and manufacturing of “built to order” resolver packages. We can mechanically and electrically match any competitor’s package while improving on the overall design to enhance the performance, accuracy or durability. Through our wide range of materials for construction and precision gear reducers we can extend your sensor’s life many times over. We offer packages with multiple sensors and gear reducers in a variety of materials. We have engineered special resolver packages with stainless steel housings, oil filled packages, high RPM, high resolution, resolver/encoder combinations and tach generators.



Resolver Specifications										
1986	A	B	C	D	E	F	G & GG	H	I	MD
Shaft Loading Axial	150 lbs. Max.	45 lbs. Max.	45 lbs. Max.	150 lbs. Max.	125 lbs. Max.	200 lbs. Max.	200 lbs. Max.	20 lbs. Max.	50 lbs. Max.	50 lbs. Max.
Shaft Loading Radial	100 lbs. Max.	45 lbs. Max.	45 lbs. Max.	100 lbs. Max.	75 lbs. Max.	400 lbs. Max.	400 lbs. Max.	40 lbs. Max.	100 lbs. Max.	500 lbs. Max.
Enclosure	NEMA 4	NEMA 4	NEMA 4	NEMA 4	NEMA 4	NEMA 13	NEMA 13	NEMA 13	NEMA 4	NEMA 4/13
Temperature	-40° to 125°C (DeviceNet versions -20° to 70° C)	-40° to 125°C (DeviceNet versions -20° to 70° C)	-40° to 125°C	-40° to 125°C	-40° to 125°C	-40° to 125°C	-40° to 125°C	-40° to 125°C	-40° to 125°C	-40° to 125°C
Shock	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec	50G's for 11 mSec
Vibration	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's	5 to 2000Hz @ 20G's
RPM	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.	5,000 Max.
Agency Approval	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE

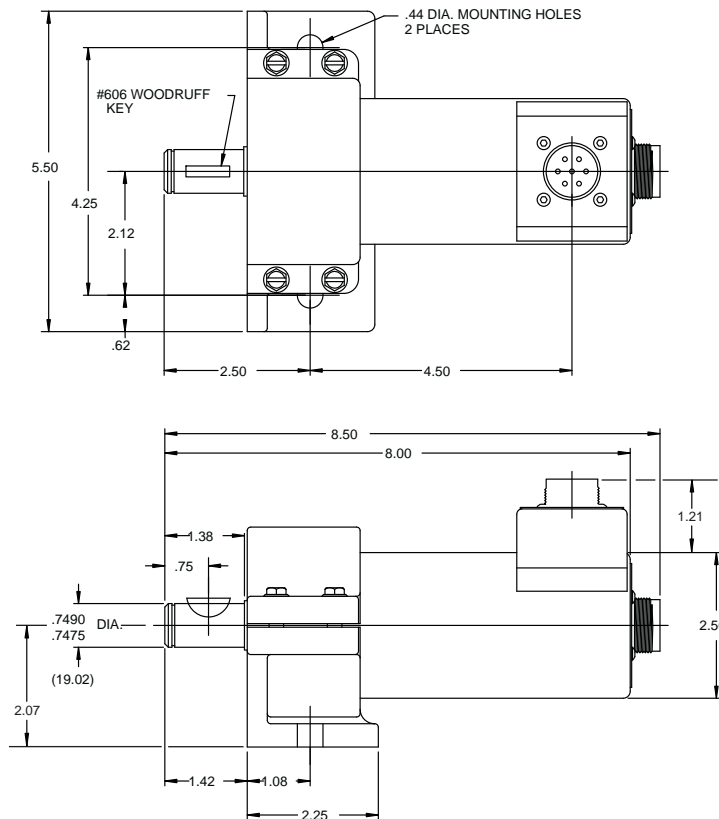
A Series



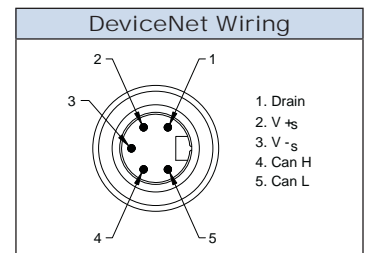
1986 — A — 1 — X — R — X

Mounting Configuration and Shaft Size		Single/Multi-Turn		Connection		Options													
A	Standard foot mount 3/4" input shaft	X	Single turn resolver. No gear reducer.	R	Standard rear mount connector.	X	None												
Resolver Electrical Output Characteristics <table border="1"> <tr><td>1</td><td>Standard output compatible with all Gemco electronic modules and Autotech. Resolver No. 04535001</td></tr> <tr><td>2</td><td>Special output compatible with AMCI resolver input devices. Resolver No. 04535076</td></tr> <tr><td>3</td><td>Special output compatible with GE axis positioning modules. Resolver No. 04535044</td></tr> <tr><td>4</td><td>Special output compatible with Modicon motion cards. Resolver No. 04535051</td></tr> <tr><td>5</td><td>Special output compatible with Reliance resolver input card. Resolver No. 04535023</td></tr> <tr><td>DN</td><td>DeviceNet output, DeviceNet only offered with rear connector. Resolver No. 04535001</td></tr> </table>		1	Standard output compatible with all Gemco electronic modules and Autotech. Resolver No. 04535001	2	Special output compatible with AMCI resolver input devices. Resolver No. 04535076	3	Special output compatible with GE axis positioning modules. Resolver No. 04535044	4	Special output compatible with Modicon motion cards. Resolver No. 04535051	5	Special output compatible with Reliance resolver input card. Resolver No. 04535023	DN	DeviceNet output, DeviceNet only offered with rear connector. Resolver No. 04535001	GR_	Single turn resolver with internal gear reducer. Select ratio from list below, insert after GR.	S	Side mount connector.	P	Additional protective shaft seal for high pressure washdown environments.
		1	Standard output compatible with all Gemco electronic modules and Autotech. Resolver No. 04535001																
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GM_	Single turn resolver with internal gear multiplier. Select ratio from list below, insert after GM.	A_	Rear exit potted pigtail with bare leads. Insert cable length in feet after A.	SA	All stainless steel construction for mounting configuration "A" includes stainless steel mounting foot.														
D1	64 turn dual resolver.	B_	Side exit potted pigtail with bare leads. Insert cable length in feet after B.	E	Stainless steel input shaft and corrosion resistant epoxy coating on all exposed metal.														
D2	128 turn dual resolver.	C_	Rear exit potted pigtail with standard connector on end of cable. Insert cable length in feet after C.	<table border="1"> <thead> <tr><th colspan="3">Gear Multipliers</th></tr> </thead> <tbody> <tr><td>1:2</td><td>1:5</td><td>1:9</td></tr> </tbody> </table>		Gear Multipliers			1:2	1:5	1:9								
Gear Multipliers																			
1:2	1:5	1:9																	
		* Lengths may vary with gear reducer		D_	Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.														

Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue
AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
E	S4	Blue
C	S2	Yellow
F	S3	Black
G	S1	Red
Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue



Single Resolver Gear Reducers			
1.5:1	15:1	50:1	180:1
2:1	16:1	54:1	200:1
3:1	17:1	58:1	210:1
4:1	18:1	60:1	225:1
4.75:1	19:1	64:1	250:1
5:1	19.5:1	65:1	270:1
6:1	20:1	70:1	310:1
6.15:1	21.66:1	73:1	350:1
7:1	23:1	75:1	360:1
7.5:1	24:1	80:1	400:1
7.625:1	25:1	90:1	500:1
8:1	30:1	91:1	520:1
9:1	31.25:1	100:1	1200:1
9.2:1	35:1	115:1	1500:1
9.5:1	38:1	120:1	2000:1
10:1	40:1	128:1	2150:1
12:1	42:1	150:1	2160:1
14:1	48:1	160:1	7760:1



AMCI is a trademark of Advanced Micro Controls Inc. GE is a trademark of the General Electric Company. Modicon is a trademark of the Square D Company. Reliance is a trademark of Rockwell Automation. Namco is a trademark of Namco Controls Corporation. Autotech is a trademark of AVG Automation.

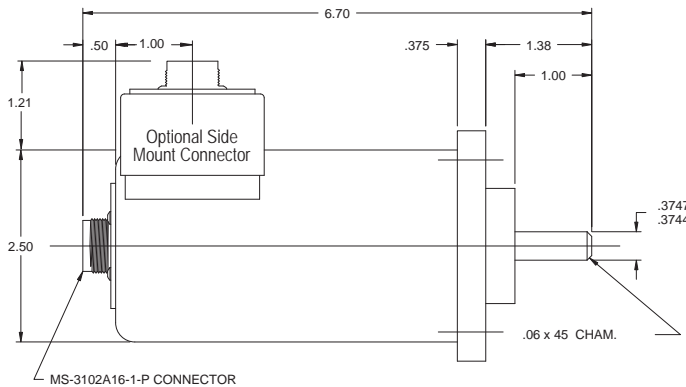


B Series

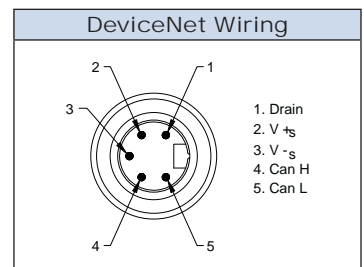
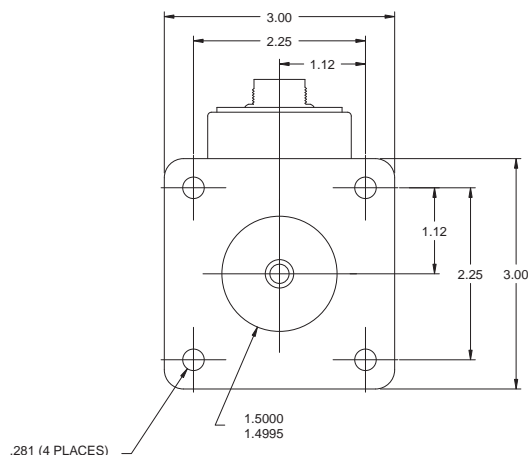
1986		B	1	X	R	X
Mounting Configuration and Shaft Size		Resolver Electrical Output Characteristics		Single/Multi-Turn	Connection	Options
B	2.25" square flange mount 3/8" input shaft	1	Standard output compatible with all Gemco electronic modules and Autotech. Resolver No. 04535001	X	R	X
		2	Special output compatible with AMCI resolver input devices. Resolver No. 04535076	GR_	S	P
		3	Special output compatible with GE axis positioning modules. Resolver No. 04535044	GM_	A_	S
		4	Special output compatible with Modicon motion cards. Resolver No. 04535051	D1	B_	E
		5	Special output compatible with Reliance resolver input card. Resolver No. 04535023	D2	C_	
		6	Special output compatible with Namco resolver input card. Resolver No. 04535053	* Lengths may vary with gear reducer		
DN	DeviceNet output, DeviceNet only offer with rear connector. Resolver No. 04535001					

Gear Multipliers		
1:2	1:5	1:9

Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue
AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
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C	S2	Yellow
F	S3	Black
G	S1	Red
Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue

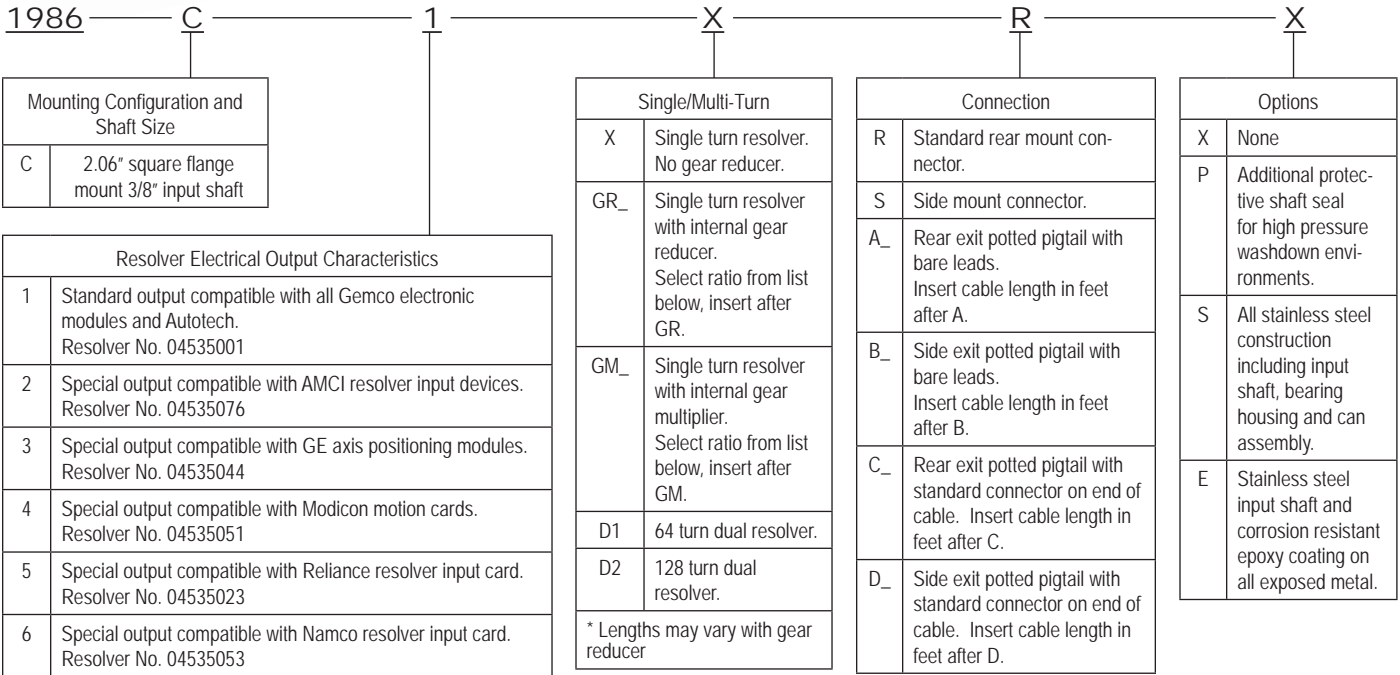


Single Resolver Gear Reducers			
1.5:1	15:1	50:1	180:1
2:1	16:1	54:1	200:1
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9.5:1	38:1	120:1	2000:1
10:1	40:1	128:1	2150:1
12:1	42:1	150:1	2160:1
14:1	48:1	160:1	7760:1

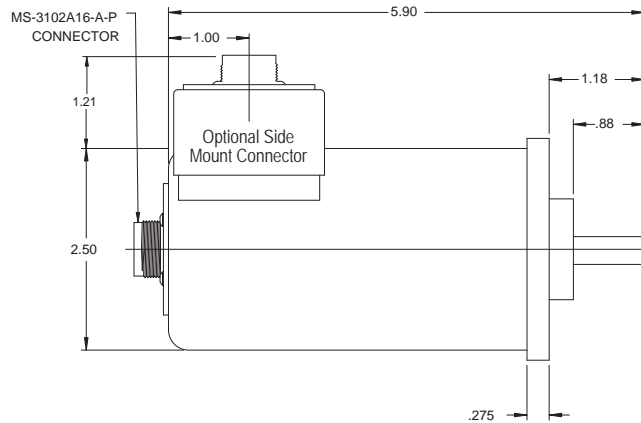




C Series

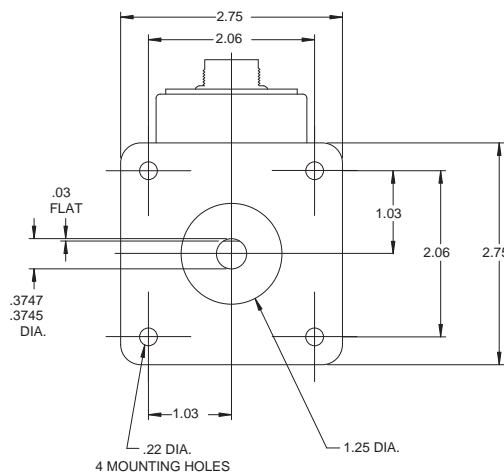


Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue
AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
E	S4	Blue
F	S2	Yellow
G	S3	Black
	S1	Red
Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
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Gear Multipliers		
1:2	1:5	1:9

Single Resolver Gear Reducers			
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10:1	40:1	128:1	2150:1
12:1	42:1	150:1	2160:1
14:1	48:1	160:1	7760:1





D Series

1986 — D — 1 — X — R — X

Mounting Configuration and Shaft Size	
D	2.50" diameter face mount 5/8" input shaft

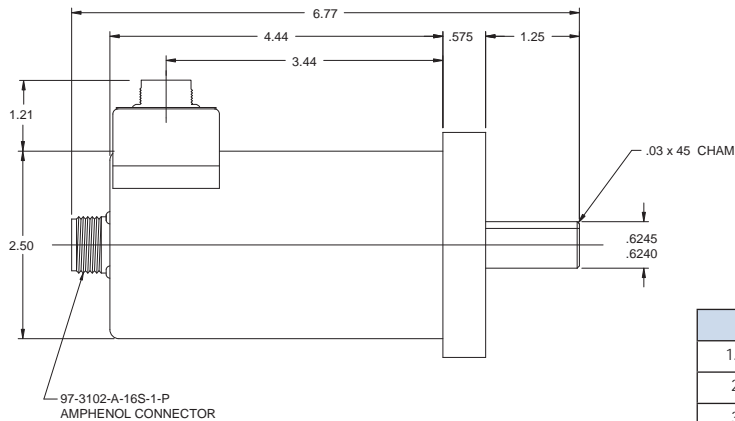
Resolver Electrical Output Characteristics	
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2	Special output compatible with AMCI resolver input devices. Resolver No. 04535076
3	Special output compatible with GE axis positioning modules. Resolver No. 04535044
4	Special output compatible with Modicon motion cards. Resolver No. 04535051
5	Special output compatible with Reliance resolver input card. Resolver No. 04535023
6	Special output compatible with Namco resolver input card. Resolver No. 04535053

Single/Multi-Turn	
X	Single turn resolver. No gear reducer.
GR_	Single turn resolver with internal gear reducer. Select ratio from list below, insert after GR.
GM_	Single turn resolver with internal gear multiplier. Select ratio from list below, insert after GM.
D1	64 turn dual resolver.
D2	128 turn dual resolver.
* Lengths may vary with gear reducer	

Connection	
R	Standard rear mount connector.
S	Side mount connector.
A_	Rear exit potted pigtail with bare leads. Insert cable length in feet after A.
B_	Side exit potted pigtail with bare leads. Insert cable length in feet after B.
C_	Rear exit potted pigtail with standard connector on end of cable. Insert cable length in feet after C.
D_	Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.

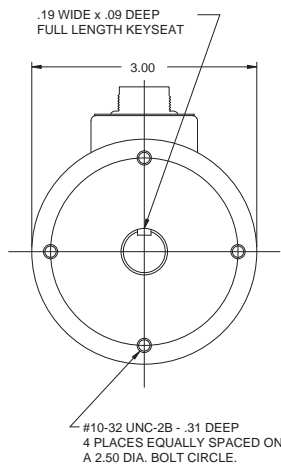
Options	
X	None
P	Additional protective shaft seal for high pressure washdown environments.
E	Stainless steel input shaft and corrosion resistant epoxy coating on all exposed metal.

Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue
AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
E	S4	Blue
C	S2	Yellow
F	S3	Black
G	S1	Red
Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue

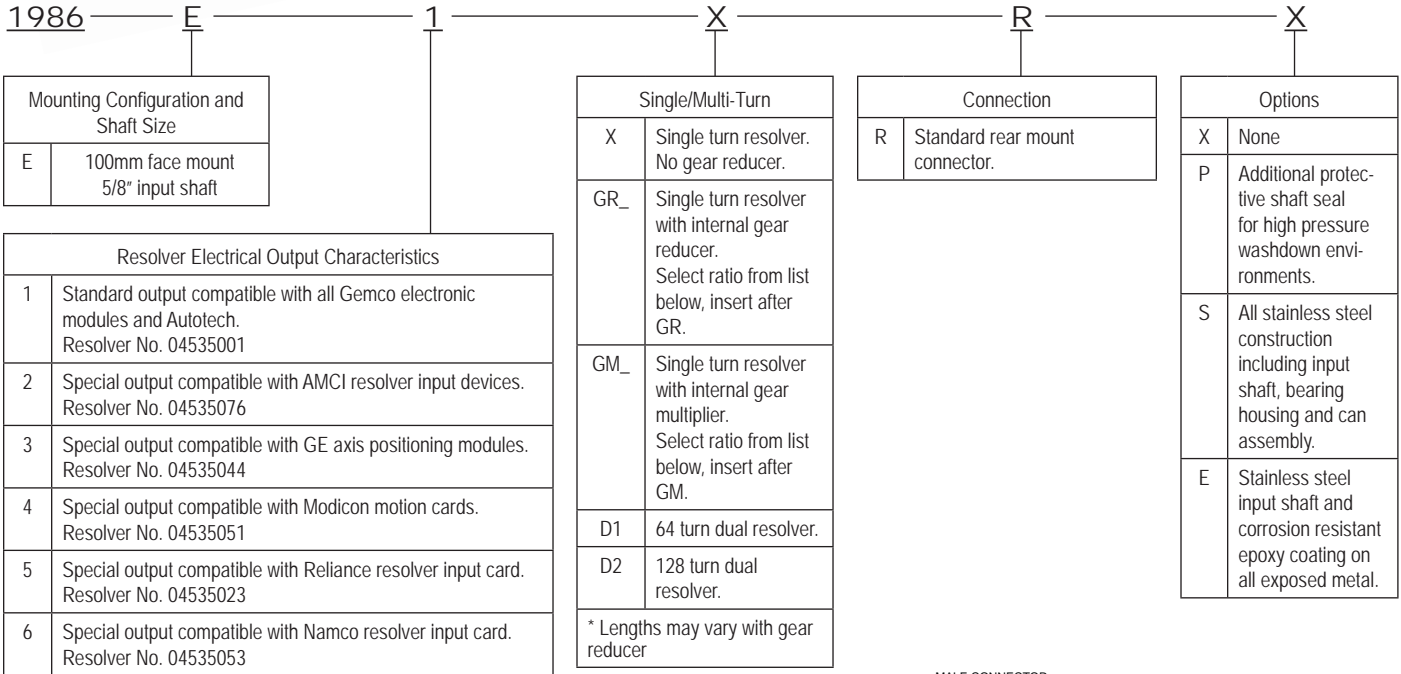


Gear Multipliers		
1:2	1:5	1:9

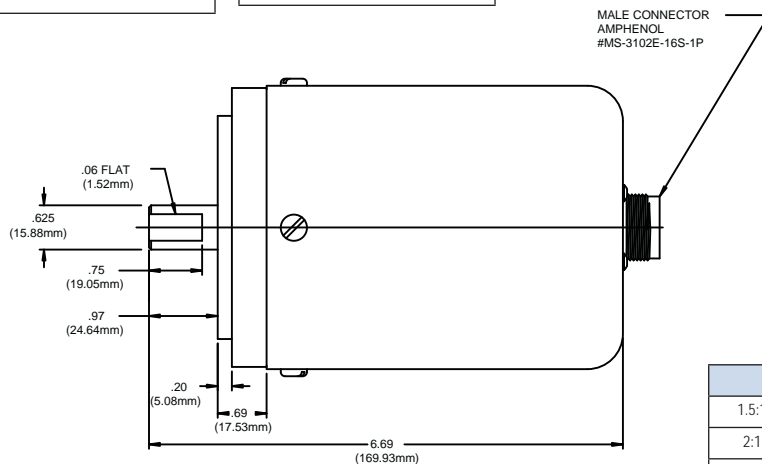
Single Resolver Gear Reducers			
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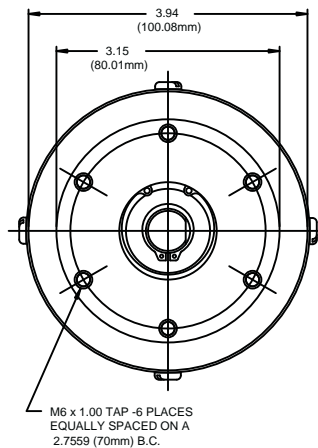
E Series



Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue
AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
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E	S2	Yellow
F	S3	Black
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Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue

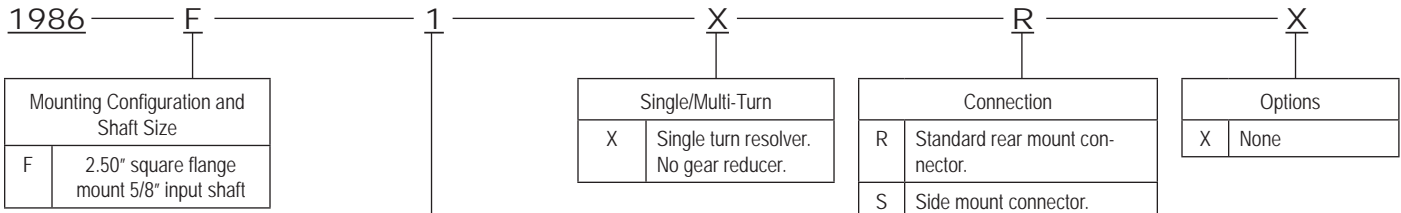


Gear Multipliers		
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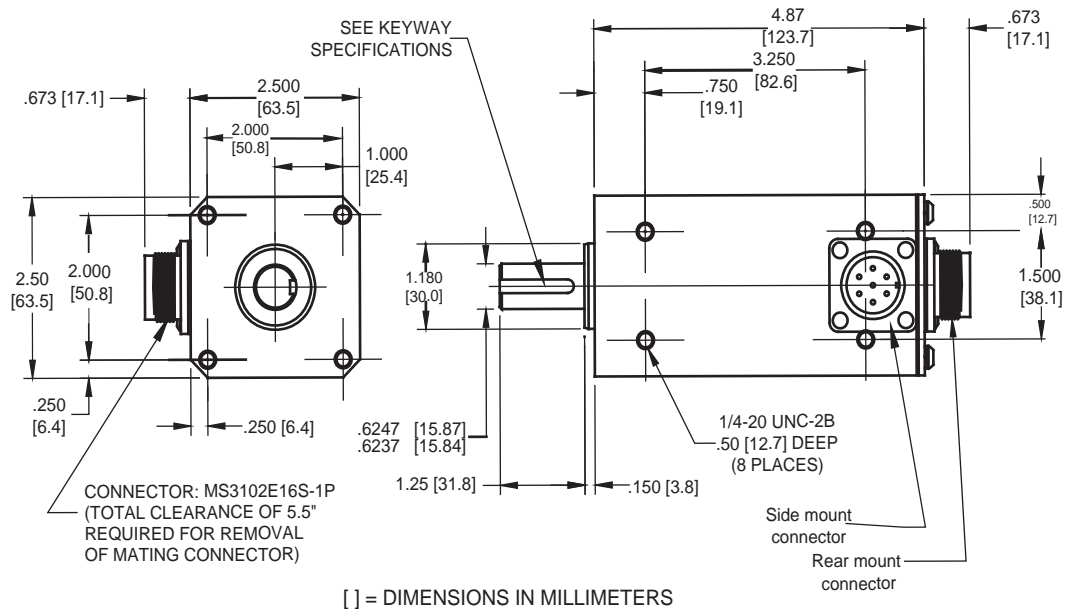
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F Series

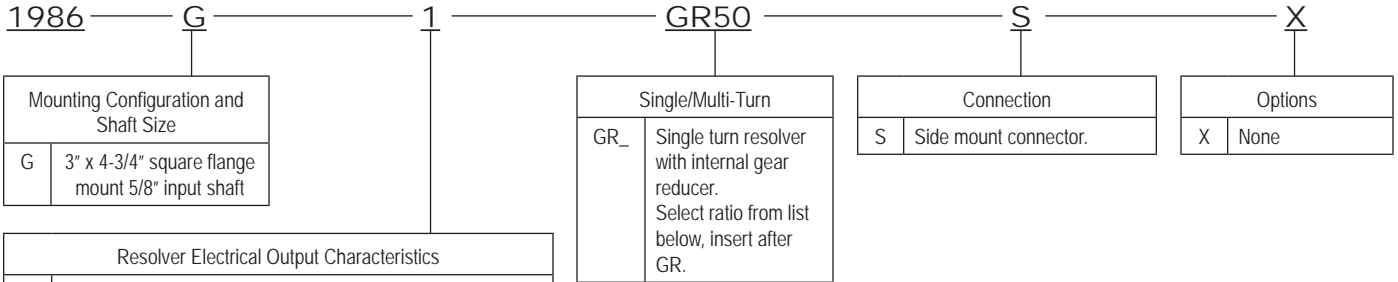


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4	Special output compatible with Modicon motion cards. Resolver No. 04535051
5	Special output compatible with Reliance resolver input card. Resolver No. 04535023
6	Special output compatible with Namco resolver input card. Resolver No. 04535053

Wiring		
GEMCO and GE Resolvers		
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B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue



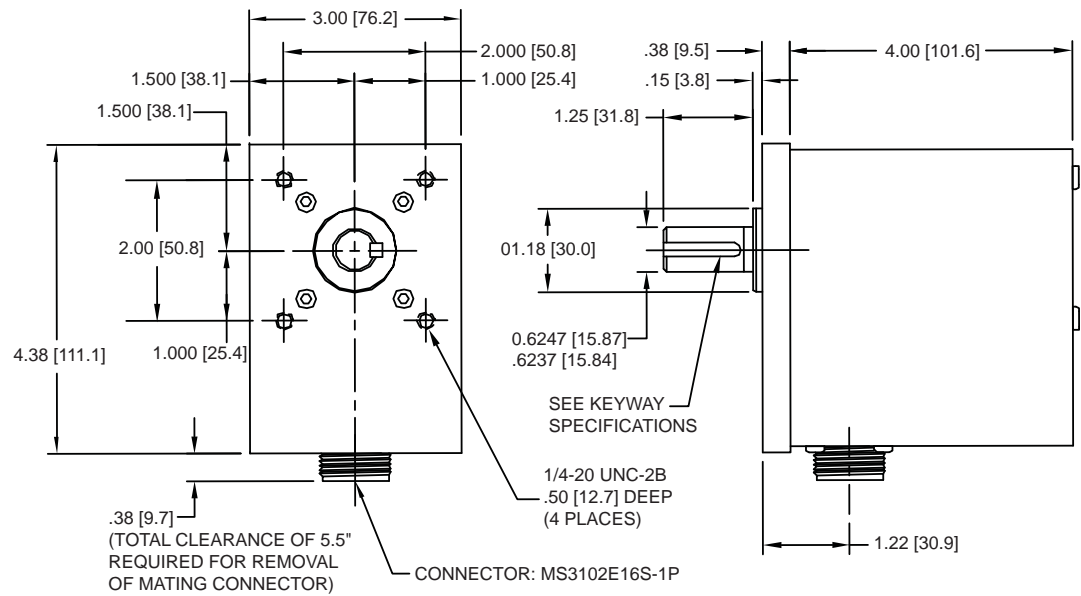
G Series



Resolver Electrical Output Characteristics	
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Single Resolver Gear Reducers			
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2.5:1	8:1	20:1	100:1
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5:1	13:1	50:1	256:1
6:1	15:1	60:1	

Wiring		
GEMCO and GE Resolvers		
Pin	Rotor	Wire Color
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D	S1	Red
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AMCI and Modicon Resolvers		
A	R2	Yellow/White
B	R1	Red/White
E	S4	Blue
C	S2	Yellow
F	S3	Black
G	S1	Red
Namco Resolvers		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
E	S2	Yellow
F	S1	Red
G	S3	Black
Reliance Resolvers		
A	R1	Red/White
B	R2	Yellow/White
F	S3	Black
D	S1	Red
G	S2	Yellow
E	S4	Blue

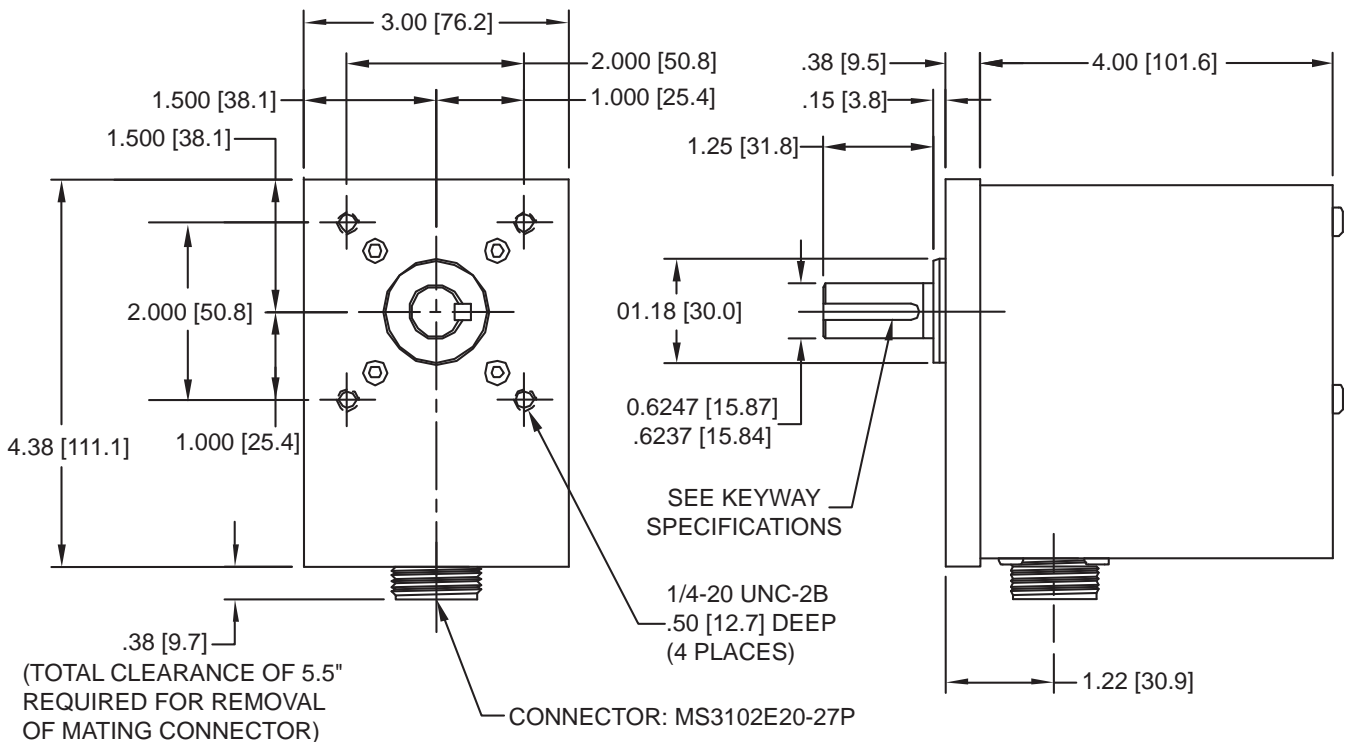
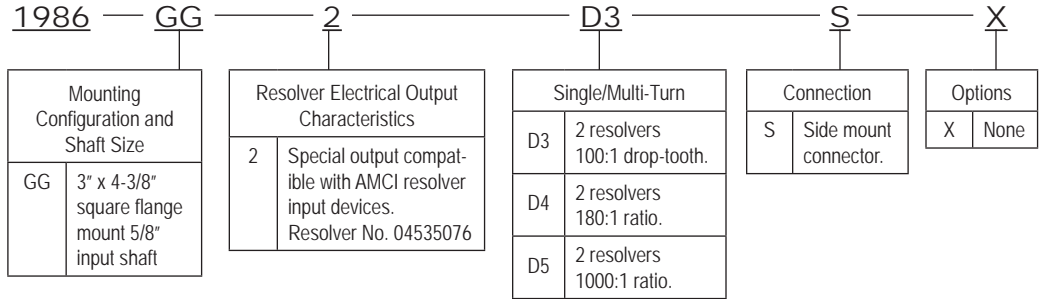


[] = DIMENSIONS IN MILLIMETERS

GG Series



Wiring		
Resolver #1 (Fine)		
Pin #	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
G	S2	Yellow
H	S4	Blue
I	S3	Black
J	S1	Red
Resolver #2 (Coarse)		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
D	S2	Yellow
E	S3	Black
F	S1	Red
AMCI		

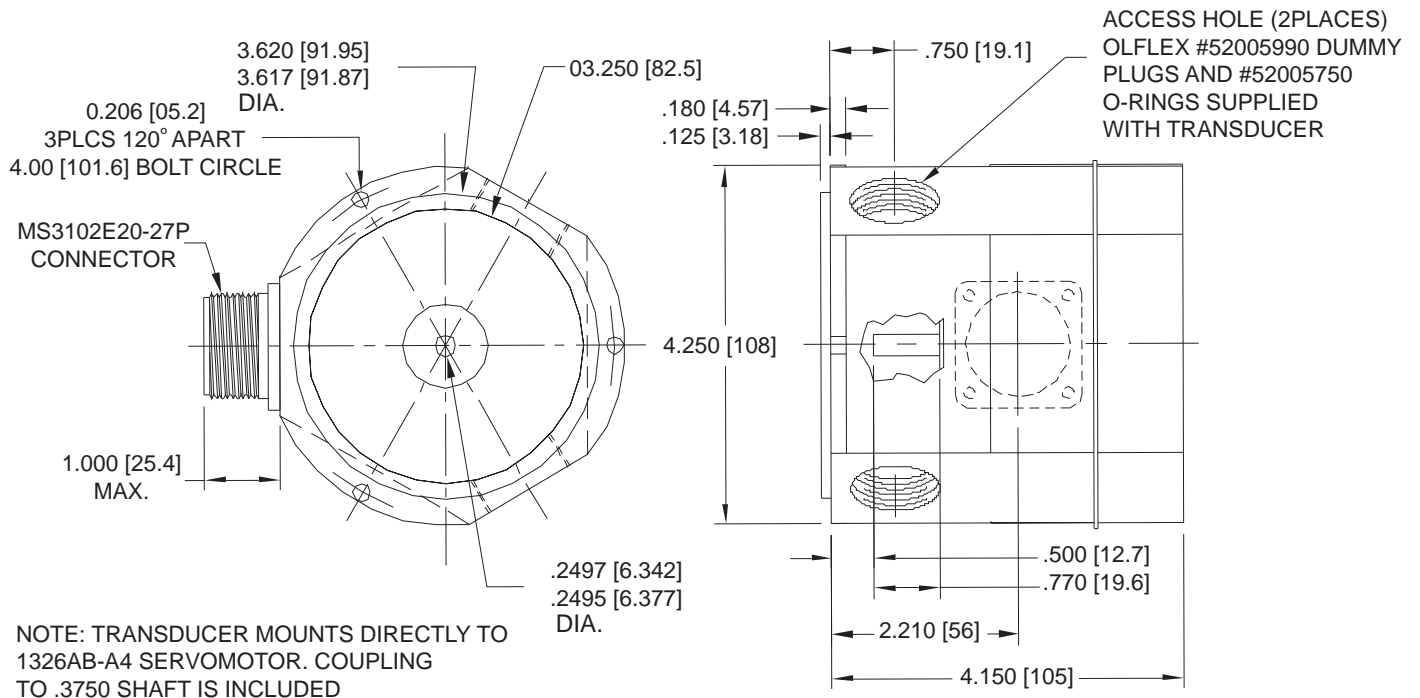
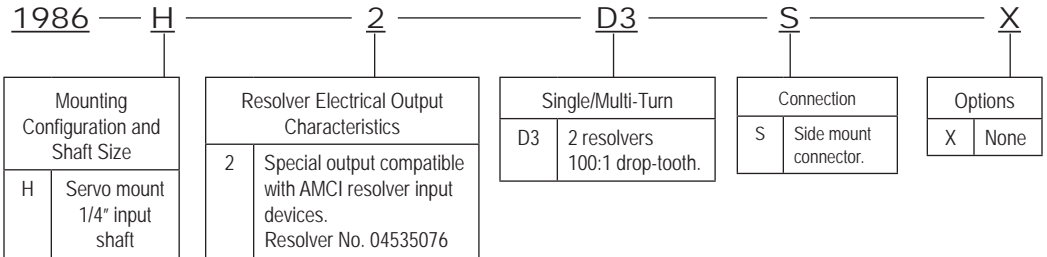


[] = DIMENSIONS IN MILLIMETERS

H Series



Wiring		
Resolver #1 (Fine)		
Pin #	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
G	S2	Yellow
H	S4	Blue
I	S3	Black
J	S1	Red
Resolver #2 (Coarse)		
A	R1	Red/White
B	R2	Yellow/White
C	S4	Blue
D	S2	Yellow
E	S3	Black
F	S1	Red
AMCI		



[] = DIMENSIONS IN MILLIMETERS

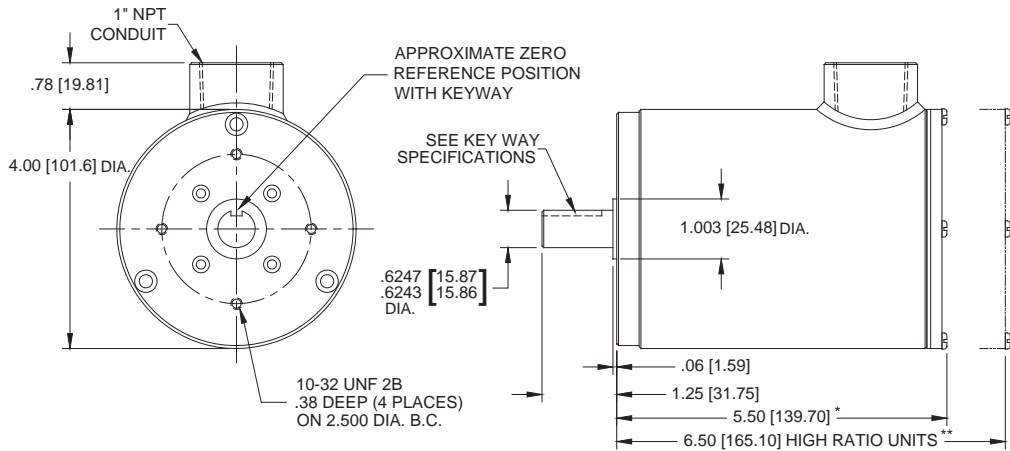
I Series



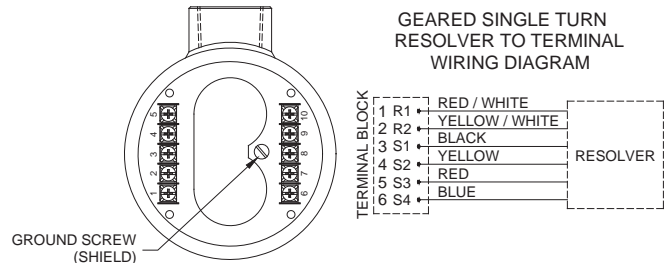
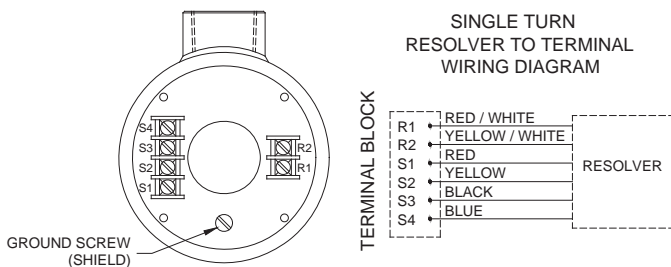
1986I		1	X	S	X
Mounting Configuration and Shaft Size I 4.00" round face mount 5/8" input shaft		Resolver Electrical Output Characteristics 1 Standard output compatible with all Gemco electronic modules & Autotech. Resolver No. 04535001 2 Special output compatible with AMCI resolver input devices. Resolver No. 04535076 3 Special output compatible with GE axis positioning modules. Resolver No. 04535044 4 Special output compatible with Modicon motion cards. Resolver No. 04535076 5 Special output compatible with Reliance resolver input card. Resolver No. 04535023 6 Special output compatible with Namco resolver input card. Resolver No. 04535053	Single/Multi-Turn X Single turn resolver. No gear reducer. GR_ Single turn resolver with internal gear reducer 1.5:1 to 520:1. Lengths may vary with gear reducer.	Options X None	
Connection S Side conduit entrance w/ terminal blocks Consult factory for other connector options.					

Single Resolver Gear Reducers							
1.5:1	7.5:1	15:1	24:1*	48:1	75:1	160:1	360:1
2:1	7.625:1	16:1	25:1	50:1	80:1	180:1	400:1
3:1	8:1	17:1	30:1	54:1	90:1	200:1	500:1
4:1	9:1	18:1	31.25:1	58:1	91:1	210:1	520:1
4.75:1	9.2:1	19:1	35:1	60:1	100:1	225:1	
5:1	9.5:1	19.5:1	36:1*	64:1	115:1	250:1	
6:1	10:1	20:1	38:1	65:1	120:1	270:1	
6.15:1	12:1	21.66:1	40:1	70:1	128:1	310:1	
7:1	14:1	23:1	42:1	73:1	150:1	350:1	

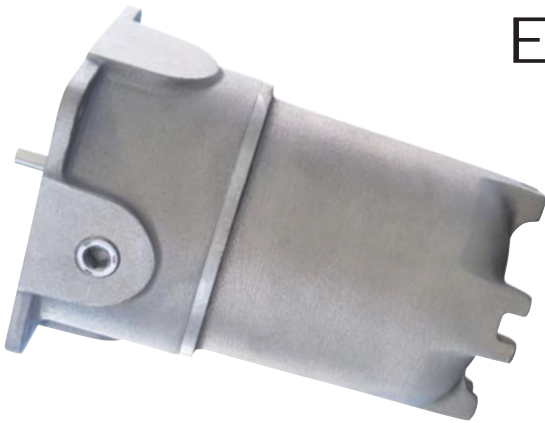
[] = DIMENSIONS IN MILLIMETERS



* Single Turn Models. Also 24:1 and 36:1 Ratios.
** Multi Turn Models.



Explosion Proof Resolver



1986 ——— XP ——— 1 ——— GR50

Mounting Configuration and Shaft Size	
XP	4.50" square mounting 3/8" input shaft

Resolver Electrical Output Characteristics	
1	Standard output compatible with all Gemco electronic modules. Resolver No. 04535001
2	Special output compatible with AMCI resolver input devices. Resolver No. 04535076
3	Special output compatible with GE axis positioning modules. Resolver No. 04535044
4	Special output compatible with Modicon motion cards. Resolver No. 04535051
5	Special output compatible with Reliance resolver input card. Resolver No. 04535023
6	Special output compatible with Namco resolver input card. Resolver No. 04535053

Single/Multi-Turn	
X	Single turn resolver. No gear reducer.
GR_	Single turn resolver with internal gear reducer. Select ratio from list below, insert after GR.
GM_	Single turn resolver with internal gear multiplier. Select ratio from list below, insert after GM.
D1	64 turn dual resolver.
D2	128 turn dual resolver.

Single Resolver Gear Reducers			
1.5:1	14:1	42:1	128:1
2:1	15:1	48:1	150:1
3:1	16:1	50:1	160:1
4:1	17:1	54:1	180:1
4.75:1	18:1	58:1	200:1
5:1	19:1	60:1	210:1
6:1	19.5:1	64:1	225:1
6.15:1	20:1	65:1	250:1
7:1	21.66:1	70:1	270:1
7.5:1	23:1	73:1	310:1
7.625:1	24:1	75:1	350:1
8:1	25:1	80:1	360:1
9:1	30:1	90:1	400:1
9.2:1	31.25:1	91:1	500:1
9.5:1	35:1	100:1	520:1
10:1	38:1	115:1	
12:1	40:1	120:1	

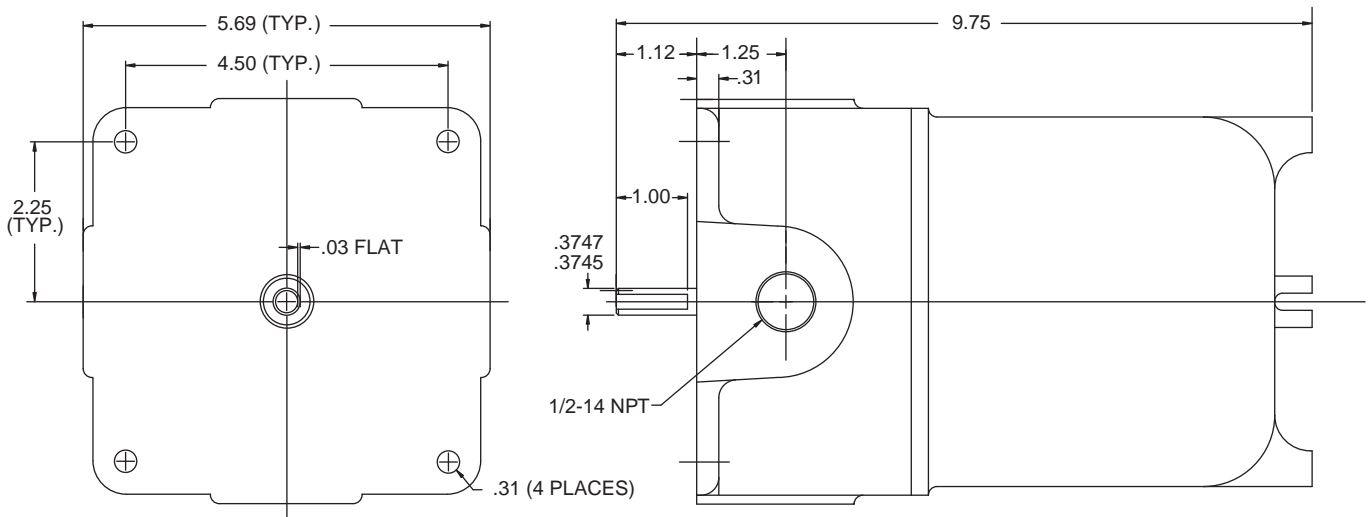
Certifications:

- UL Listed E10493
- CSA Certified LR27991

Compliance:

- NEC Class I, Division I, Groups C & D, Class II, Groups E, F & G
- UL Standard 886
- CSA Standard C22.2 No. 30

All resolver wiring is taken to a terminal strip inside the housing and is accessible through a 1/2" - 14 NPT conduit opening.



Mill-Duty Resolver Housing



*Resolver not included in the price of the housing.

1986MD

1

AR

1

VT1

Housing Configurations	
1	1/4" plate steel housing with plate steel bolted cover sized for single turn resolver. (see Figure 1MD)
2	1/4" plate steel housing with hinged 10 ga. sheet metal cover sized for single turn resolver. (see figure 2MD)
3	1/4" Plate steel housing with plate steel bolted cover sized for geared or multi-turn dual resolvers. (see figure 3MD)
4	1/4" plate steel housing with hinged 10 ga. sheet metal cover sized for geared or multi-turn dual resolvers. (see figure 4MD)

Geared or multi-turn dual resolvers are slightly longer than single turn resolvers and will require the larger housing. Single turn resolvers will mount in either size housing.

Shaft Configuration	
AR	Std. 3/4" input shaft exiting the right end of the housing
AL	Std. 3/4" input shaft exiting the left end of the housing.
B	Std. 3/4" input shaft exiting both ends of the housing.

Gear Ratio Between Input Shaft and Resolver	
1	Standard 1:1 gearing.
2	2:1 gear reduction.
3	3:1 gear reduction.
4	1:2 gear multiplier.
5	1:3 gear multiplier.

Options	
V	Vortex air cooler.
S1	All 304SS construction, housing and exposed parts.
S2	All 316SS construction, housing and exposed parts.
T1	Resolver cable is wired to terminal strip for single turn resolver.*
T2	Resolver cable is wired to terminal strip for multi-turn dual resolver.*

*This option includes a resolver cable wired to a terminal strip that is mounted in the enclosure. It does not include a resolver.

Housing for Single-Turn Resolver Shaft Shown Exiting Right End

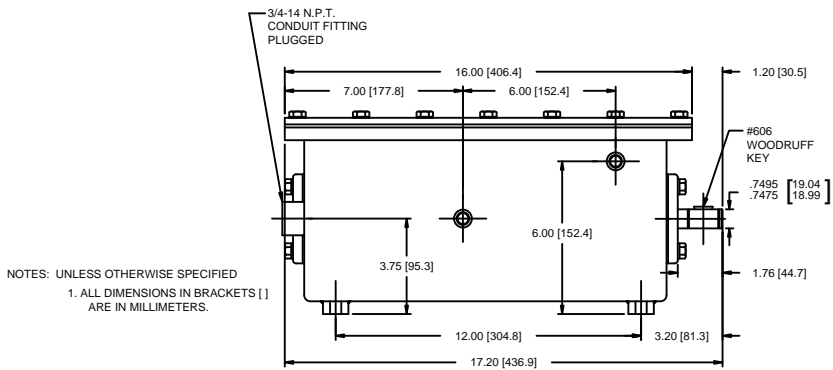
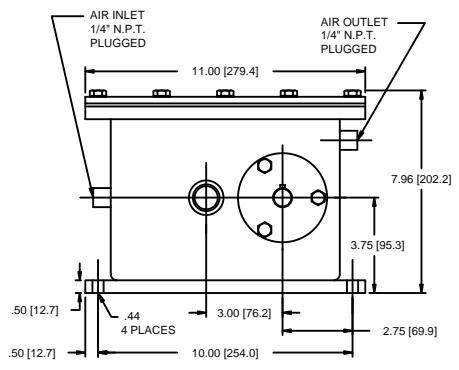


Figure 1MD



NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL DIMENSIONS IN BRACKETS [] ARE IN MILLIMETERS.

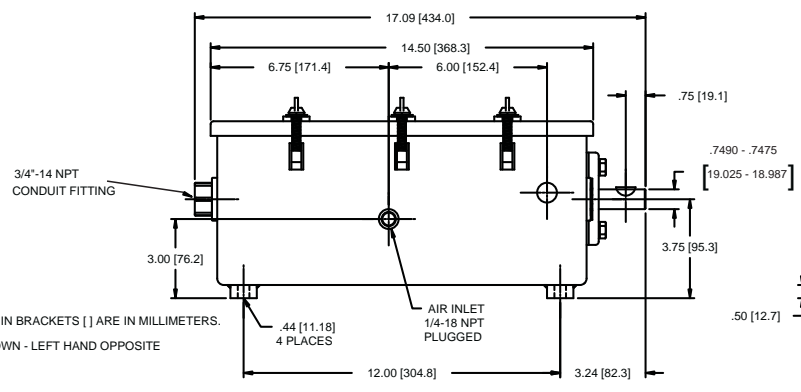
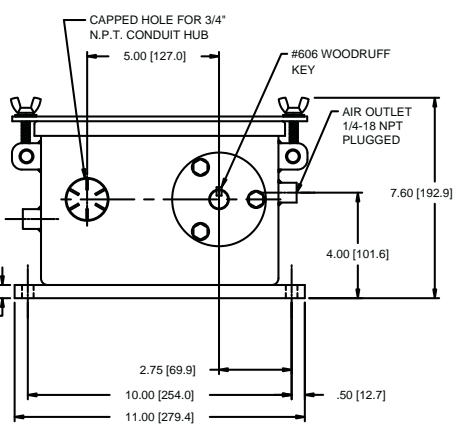


Figure 2MD

NOTE: ALL DIMENSIONS IN BRACKETS [] ARE IN MILLIMETERS.
NOTE: RIGHT HAND SHOWN - LEFT HAND OPPOSITE



Mill-Duty Resolver Housing



Housing for Geared or Multi-Turn Dual Resolver Shaft Shown Exiting Right End

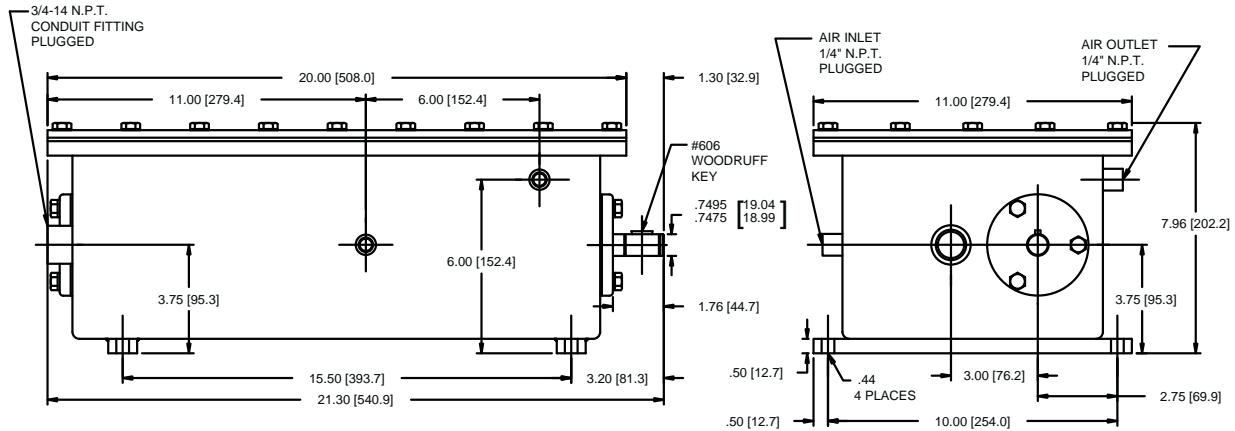
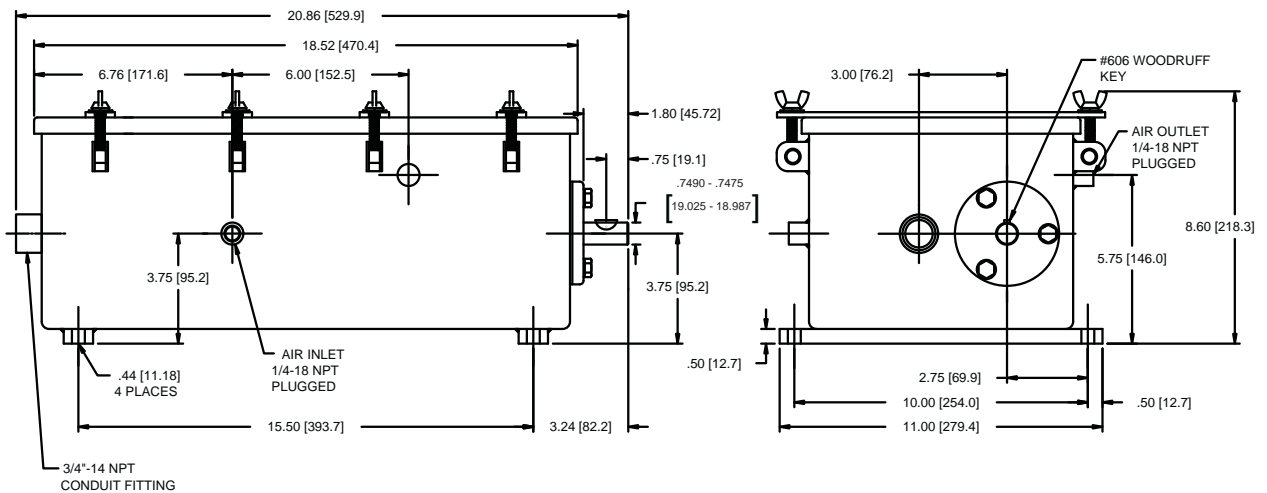


Figure 3MD



NOTE: ALL DIMENSIONS IN BRACKETS [] ARE IN MILLIMETERS.
NOTE: RIGHT HAND SHOWN - LEFT HAND OPPOSITE

Figure 4MD

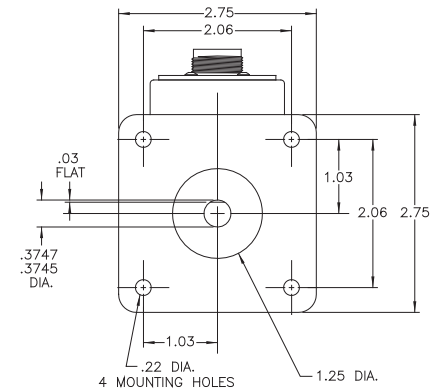
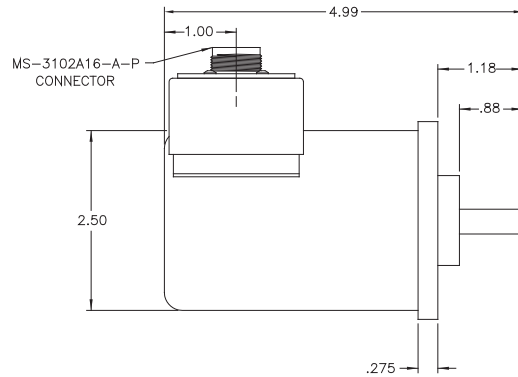
Other Resolver Options

1986-2004 Resolver

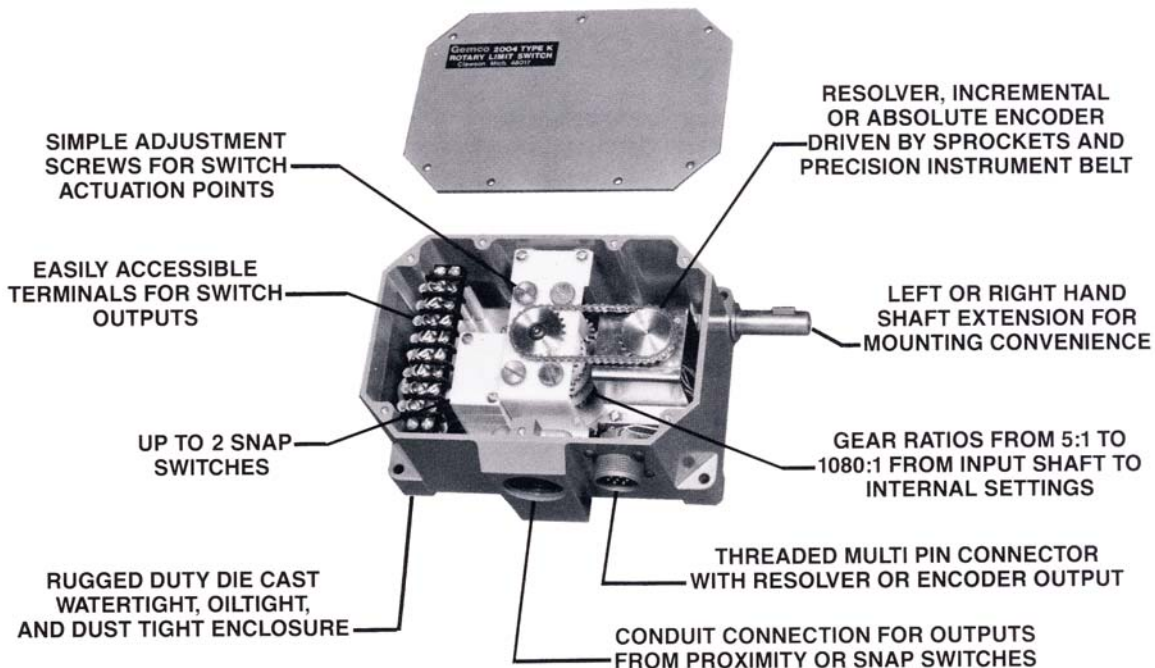


Mounting Configuration and Shaft Size
2.06" square flange mount 3/8" input shaft

Wiring		
GEMCO, GE, Modicon, and Reliance Resolver		
Pin	Rotor	Wire Color
A	R1	Red/White
B	R2	Yellow/White
C	S3	Black
D	S1	Red
E	S2	Yellow
F	S4	Blue



2006 Rotary Limit Switch with Resolver



Cable Assemblies & Components

Cable Assemblies for Single Turn Resolvers	
SD0481500L_	Resolver cable with straight connector for use with 1771 PLSs.
SD0481600L_	Resolver cable with right angle connector for use with 1771 PLSs.
SD0508200L_	Resolver cable with straight connector for use with 1746R Resolver Module or 2500 PLS.
SD0531400L_	Resolver cable with right angle connector for use with 1746R Resolver Module or 2500 PLS.
SD0284100L_	Resolver cable with straight connector for use with 1988 PLS.
SD0295500L_	Resolver cable with right angle connector for use with 1988, 1989, 1991 or 1992 PLSs.
SD0334200L_	Resolver cable with straight connector for use with 1989, 1991 or 1992 PLS's with single turn resolver input.
SD0399000L_	Resolver cable with straight connector for use with 2110 Shut Height Monitor or 2120 Interface Module with single turn resolver input.
SD0399100L_	Resolver cable with right angle connector for use with 2110 Shut Height Monitor or 2120 Interface Module with single turn resolver input.
SD0434300L_	Resolver cable with straight connector for use with AMCI resolver input modules. Color code matches AMCI and Modicon.
SD0501000L_	Resolver cable with right angle connector for use with AMCI resolver input modules. Color code matches AMCI and Modicon.
SD0401600L_	Resolver cable with straight connector for use with 1995 PLS.
SD0430800L_	Resolver cable with right angle connector for use with 1995 PLS.
Cable length in feet required at the end of the part number (SD0295500L15). Example shows 15 ft cable assembly.	
Cable Assemblies for Multi-Turn Dual Resolvers	
SD0334900L_	Resolver cable with straight connector for use with 1989 PLS with multi-turn dual resolver input.
SD0508300L_	Resolver cable with straight connector for use with 1746R2 Resolver Interface Module with multi-turn dual resolver input.
SD0365900L_	Resolver cable with right angle connector for use with 1989 PLS with multi-turn dual resolver input.
SD0448700L_	Resolver cable with straight connector for use with AMCI resolver input modules. Color code matches AMCI and Modicon.
Cable length in feet required at the end of the part number (SD0334900L15). Example shows 15 ft cable assembly.	
Mating Connectors and Bulk Cable for Field Fabrication of Cable Assemblies	
SD0296000	Mating connector, standard straight version for use with single turn resolver.
SD0370200	Mating connector, right angle version for use with single turn resolvers.
SD0352400	Mating connector, standard straight version for use with multi-turn dual resolvers.
SD0366000	Mating connector, right angle version for use with multi-turn dual resolvers.
01533002L_	Resolver cable for single turn resolvers, 22AWG, 4 twisted pairs with shield.
01533015L_	Resolver cable for multi-turn dual resolvers, 22AWG, 6 twisted pairs with shield.
Cable length in feet required at the end of the part number (01533015L15). Example shows 15 ft cable assembly.	

Automation Solution Products



1980 Rotating Cam Limit Switch

- Micro-adjust cams provide easy adjustment at any shaft position
- 2 to 40 Circuits
- Wide range of gear ratios available from stock
- Available in NEMA 1, 12, 4, 7, 9 (IP 23, 55, 66) and mill-duty plate steel enclosures
- Resolver cam switch packages combine continuous position output with hard contact over-travel limits

PLC Encoder Modules and Programmable Limit Switches (PLS)

- Provides monitoring of resolver or Linear Displacement Transducers (LDTs) from a remote, safe location
- Converts sensor signal to compatible digital, analog, or limit switch outputs
- High-speed output update times improve control resolution and repeatability



925 Mill-Duty Cable Reel Sensor

- Converts linear machine motion to rotary motion to turn rotary position or velocity sensors
- Provides absolute, incremental, analog, or cam switch outputs
- Outputs are electrically compatible with all existing control circuitry
- Stainless steel cable, large dual springs, and 12 gauge steel housings survive the mill environment
- Stroke Length to 100 ft



950 MD Mill-Duty Linear Transducer

- All 304 stainless steel construction
- Adjustable trunion and swivel ball mount standard
- Air purge fittings are standard on all units with Vortex coolers available for high temperature applications
- Custom water-cooled versions available
- Repeatability to +/- 0.001" (+/- 0.025 mm)



955 BRIK Low Profile Linear Transducer

- Aluminum extruded channel provides easy mounting
- Low cost linear position sensor
- Lengths to 180 inches
- Green/red status LED indicator
- Analog, digital pulses & quadrature outputs available



953 Linear Displacement Transducer

- Magnetostrictive LDT for high shock and vibration areas (toughest in the industry)
- Resolution to 1 micron
- Lengths up to 300" in 0.1" increments also available with:
- Voltage, Current, Digital, PWM, Start/Stop & SSI Outputs
- Programmable Zero & Span
- Diagnostic LED
- IP 68 rated

Bus Cards

- Resolver & Linear Transducer Interface Cards
- A/B SLC-500 and PLC-5 Cards (Resolver and LDT)



Resolver/Encoder Packages for GEC Gem 80 Drive Systems

- Direct bolt-in replacement for OEM supplied sensor package
- Designed for improved input shaft load resistance
- 316 stainless steel housing, dual shaft seals, and mill-duty cable connectors for high moisture/corrosive environments
- Outputs compatible with most Gem 80 drive systems
- Custom variations available



1990DN Network Module

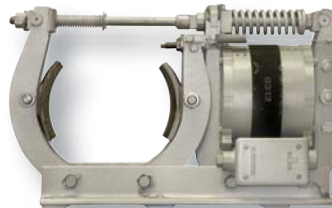
- Interfaces standard resolvers to DeviceNet networks
- 12-Bit resolution
- Eight user programmable set-points transmitted over the network
- Continuous position data and RPM over DeviceNet



Other Products

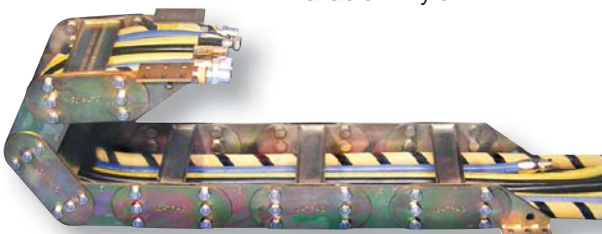
GEMCO Industrial Brake Systems

- Hydraulic Brakes, AISE electric brakes
- Custom brakes engineered to requirement
- Self-adjustment feature available on electro-thrust brakes
- Competitive pricing and lead times



CATRAC® Cable and Hose Carrier Systems

- Double welded, box beam, bolted construction
- Full line of standard sizes
- Special materials of construction and coatings available
- Custom designs are a specialty
- Available in nylon



When All Others Fail!



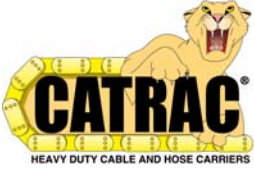


AMETEK Automation and Process Technologies markets, engineers and manufactures sensors and controls for demanding and harsh industrial environments. Products include GEMCO linear and rotary position sensors and controls, industrial brakes systems, CATRAC® cable and hose carriers, and B/W™ liquid level controls. AMETEK APT has more than 60 years of application experience and markets its products globally.



B/W Liquid Level Control

- Full line of point level controls - conductive and float
- State-of-the-art continuous level instruments and control
- EPA approved leak detection in below ground tanks



AMETEK APT Products		
	 <ul style="list-style-type: none">LINEAR DISPLACEMENT TRANSDUCERSPLC INTERFACE PRODUCTSROTARY POSITION PRODUCTSPROGRAMMABLE LIMIT SWITCHESEXTREME DUTY CABLE REEL PRODUCTSROTARY LIMIT SWITCHESRESOLVERSMILL DUTY ENCLOSURESULTRA HIGH SPEED PLSSAFETY PRODUCTS	
		

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