

### **1986 RESOLVER CATALOG**

Absolute Rotary Sensing for the Most Demanding Applications







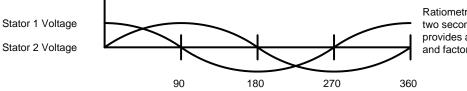


# **The Resolver Story**

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 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 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.

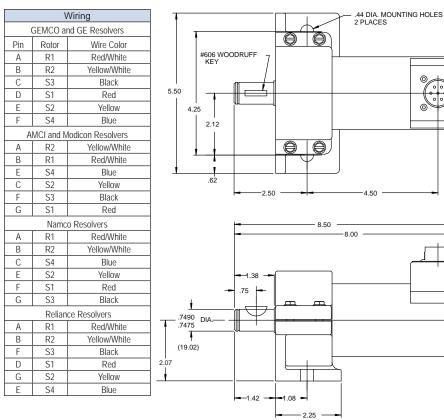


Ratiometric conversion of the two secondary coil voltages provides absolute position data, and factors out EMI.

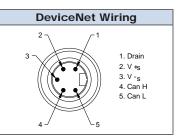
	Resolver Specifications											
1986	Α	В	С	D	E	F	G & GG	н	I	MD		
Shaft Loading Axial	150 lbs. Max.	45 lbs. Max.	45 lbs. Max.	150 lbs. Max.	125 lbs. Max.	200 lbs. Max.	200 lbs. Max.	20 lbs. Max.	50 lbs. Max.	50 lbs. Max.		
Shaft Loading Radial	100 lbs. Max.	45 lbs. Max.	45 lbs. Max.	100 lbs. Max.	75 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									
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		



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<u>1</u>	<u>986 — A</u> —	<u>1</u>		- <u>x</u>		<u></u>			- <u>X</u>	
Мо	unting Configuration and			Single/Multi-Turn		Connection			Options	
	Shaft Size Standard foot mount 3/4"		Х	Single turn resolver.	R	Standard rear mount con-	1 [	Х	None	
А	input shaft		No gear reducer.         nector.           GR_         Single turn resolver         S         Side mount connector.		F	Р	Additional protec- tive shaft seal			
				with internal gear	A_				for high pressure	
	Resolver Electrical Outp			reducer. Select ratio from list		bare leads.			washdown environ- ments.	
1	Standard output compatible wit modules and Autotech.	h all Gemco electronic		below, insert after GR.		Insert cable length in feet after A.		SA	All stainless steel	
	Resolver No. 04535001		GM	Single turn resolver	Β_	Side exit potted pigtail with	1		construction for mounting configura-	
2	Special output compatible with Resolver No. 04535076	AMCI resolver input devices.	GIVI_	with internal gear multiplier.		bare leads. Insert cable length in feet after B.			tion "A" includes stainless steel	
3	Special output compatible with Resolver No. 04535044	GE axis positioning modules.		Select ratio from list below, insert after	C_	Rear exit potted pigtail with	┤┝	E	mounting foot. Stainless steel	
4	Special output compatible with Resolver No. 04535051	Modicon motion cards.	D1	GM. 64 turn dual resolver.		standard connector on end of cable. Insert cable length in feet after C.		E	input shaft and corrosion resistant	
5	Special output compatible with Resolver No. 04535023	e with Reliance resolver input card.		128 turn dual resolver.	D_ Side exit potted pigtail with standard connector on end				epoxy coating on all exposed metal.	
DN	DeviceNet output, DeviceNet o Resolver No. 04535001	nly offered with rear connector.	* Lengt reduce	ths may vary with gear r		cable. Insert cable length in feet after D.			Gear Multipliers 1:2 1:5 1:9	
	NG301VEL NU. 04333001						ngle Res	solver	Gear Reducers	



9	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					



1.21

2.50

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# **B** Series

Statil Size       None         B       2.25' square flange mount 30° input shall       X       None         C       Resolver Electrical Output Characteristics       None       R       Standard cuput compatible with all Gence electronic mound 30° input shall       X       None         1       Standard cuput compatible with all Gence electronic mound 30° input shall       GR       Single turn resolver, No part reducer.       R       Standard cuput compatible with AMCI resolver input devices. Select ratio from its below, insert atale flangth in feet after 8.       R       State east potted pigrail with bare leads.       R       State east potted pigrail with correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso correso cable.       R       State east potted pigrail with state flangt correso cable.       R	le turn resolver. lear reducer.       R       Standard rear mount con- nector.         S       Side mount connector.       A         A       Rear exit potted pigtali with bare leads. linsert cable length in feet after A.       P       Additional protec- tive shaft seal for high pressure washdown envi- ronments.         B       Side exit potted pigtali with bare leads. linsert cable length in feet after B.       S       All stainless steel construction including input shaft, bearing housing and can assembly.         C       Rear exit potted pigtali with standard connector on end of cable. insert cable length in feet after C.       E       Stainless steel input shaft and corrosion resistar epoxy coating on all exposed meta         Ver.       D       Side exit potted pigtali with standard connector on end of cable. insert cable length in feet after D.       E       Stainless steel input shaft and corrosion resistar epoxy coating on all exposed meta         .375       1.38       10       51       151       50.1       180.1         .375       1.38       10.1       19       64.1       20.1       20.1         .375       1.38       10.1       10.1       10.1       10.1       10.1         .375       1.38       10.1       10.1       10.1       10.1       10.1       10.1         .375       1.38       10.1       10.1       10.1 <th></th> <th><u>B</u></th> <th>T</th> <th></th> <th>Т</th> <th></th> <th><u>R</u></th> <th></th> <th></th> <th>Ť</th> <th></th>		<u>B</u>	T		Т		<u>R</u>			Ť	
B       Z.25* square flange mount 30° hipdi shall       A       Single turn resolver with high galar duck schedr allo tom list below, insert after reducer, Solect ratio from list below, inser after reducer, Solect ratio	ear reducer.       inector.         le turn resolver internal gear car.       A.       Rear exit potted pigtal with bare leads.         insert cable length in feet after A.       B.       Side exit potted pigtal with bare leads.         insert cable length in feet after B.       Side exit potted pigtal with bare leads.       S         insert cable length in feet after B.       C.       Rear exit potted pigtal with standard connector on end of cable. Insert cable length in feet after D.       E       Stalless steel input shaft and corrosion resists epoxy coaling on all exposed met         y vary with gear       D.       Side exit potted pigtal with standard connector on end of cable. Insert cable length in feet after D.       E       Stalless steel input shaft and corrosion resists epoxy coaling on all exposed met         375       1.38       12       1.51       1.91         375       1.38       1.92       1.92         376       1.38       1.21       1.51         377       1.38       1.21       1.51       1.91         376       1.38       1.92       1.92       1.92         376       1.38       1.91       1.91       1.91         377       1.92       1.91       64.1       200         376       1.92       1.92       1.91       1.91					Single/Multi-Turn		Connection	1		Option	۱S
mount 38 <sup>th</sup> input shaft         Side mount connector.         A         Resolver Electrical Output Connactificities           1         Standard output compatible with all Gence electronic modules and Autotech.         Seciel autput compatible with AMC1 resolver input devices.         Seciel autput compatible with AMC1 resolver input devices.         Single turn resolver with internal gear multiplier.         B         Site eaity path all gence input shaft, b         Site eaity path all gence input shaft, b         Site eaity path all gence input shaft, b           2         Special output compatible with AMC1 resolver input devices.         Site input shaft         Site eaity path all gence input shaft, b           3         Special output compatible with Modicon motion cards.         Site input shaft         C         Resolver No. 04535061           4         Special output compatible with Medicon motion cards.         C         Resolver No. 04535063         C         Resolver No. 04535063           N         DeviceNet output, DeviceNet only offer with rear connector.         ** devicent         ** devicent         C         Resolver No. 04535063         C         Resolver No. 04535064           N         DeviceNet output, DeviceNet only offer with rear connector.         ** deviceNet         ** deviceNet         C         Seciel apput compatible with Mitersol gear insolver         Seciel apput compatible with Mitersol gear insolver         Seciel apput compatible with Mitersol gear insolver         <	le turn resolver internal gear cer. traito from list w, insert after le turn resolver internal gear piler. ct ratio from list w, insert after le turn resolver internal gear piler. ct ratio from list w, insert after after A. B. Side exit potted pigtail with bare leads. Insert cable length in feet after B. C. D. Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D. D. Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D. D. Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D. D. Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D. D. Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D. Signet Resolver Gear Reducers 1.2 1.5 1.15.1 15.1 15.1 15.1 15.1 15.1 15.1 15.1				Х		R		ount con-	X	None	
Resolver Electrical Output Characteristics         1       Standard output compatible with all Cence electronic moduces.       Standard output compatible with all Cence electronic moduces.       Standard output compatible with AMCI resolver input devices.       Standard output compatible with AMCI resolver input devices.       Standard output compatible with AMCI resolver input devices.       Standard output compatible with Modicon motion cards.       Standard output compatible with Manco resolver input card.         5       Special output compatible with Manco resolver input card.       D1       64 turn dual resolver.       D2       25 turn dual resolver. No. 04535051       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       D.       Standard connection end of cable. Insert cable length in feet after C       Standard connection end of cable. Insert cable length in feet after C       Standard connection end of cable. Insert cable length in feet after C<	internal gear cer.       A.       Rear exit potted pigtali with bare leads. Insert cable length in feet after A.       for high pressur washdown environments.         Is un resolver internal gear piper.       B.       Side exit potted pigtali with bare leads. Insert cable length in feet after B.       S       All stainless stee construction including input shaft, bearing on thousing and car assembly.         Image: Cr.       Rear exit potted pigtali with bare leads. Insert cable length in feet after B.       C.       Rear exit potted pigtali with standard connector on end of cable. Insert cable length in feet after C.       E       Stainless steel input shaft and corrosion resists epoxy coaling o all exposed met         Ver.       D.       Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.       S       All stainless steel input shaft and corrosion resists epoxy coaling o all exposed met         375       1.00       Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.       Single Resolver Gear Reducers         374       1.01       1.00       1.01       1.01       1.02         374       0.6 x 45 CHAM.       Site X CHAM       Site X CHAM       Site X CHAM       Site X CHAM         1.12       1.12       1.01       1.02       1.01       1.02       1.01       1.02         374       0.6 x 45 CHAM       Site X CHAM       Site X CHAM	B 2. mo	25" square flange punt 3/8" input shaft		GR	-	S		ector	P		
Resolver Electrical Output Characteristics         1       Standard output compatible with all Gence electronic modules and Autotech.       Select ratio from list below, insert alter GR.       B       Side exit potted light in feet after A.       Side exit potted light with bere leads.       B       Side exit potted light with bere leads.       Side exit potted light with bere leads.       B       Side exit potted light with below, insert able light in feet after A.       B       Side exit potted light with bere leads.       E       Side exit potte	<ul> <li>bare leads. Insert cable length in feet after A.</li> <li>bare leads. Insert cable length in feet after B.</li> <li>Side exit potted pigtali with bare leads. Insert cable length in feet after B.</li> <li>C. Rear exit potted pigtali with standard connector on end of cable. Insert cable length in feet after C.</li> <li>D. Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.</li> <li>Side exit potted pigtali with standard connector on end of cable. Inser</li></ul>									-		
<ul> <li>Standard output compatible with all Gence electronic modules and Autolech. Resolver No. 04535001</li> <li>Special output compatible with AMCI resolver input devices. Resolver No. 04535001</li> <li>Special output compatible with MCI resolver input devices. Resolver No. 04535051</li> <li>Special output compatible with MCI resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Namco resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Namco resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Namco resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Namco resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Reliance resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Namco resolver input card. Resolver No. 04535051</li> <li>Special output compatible with Reliance resolver input card. Resolver No. 04535051</li> <li>Vere Color and GE Resolvers No. 04535051</li> <li>Vere Color And Read No.</li></ul>	w, insert after       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.         D_       Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.         D_       Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.         376       1.38         M       1.00         377       1.38         M       1.00         376       1.38         M       1.00         376       1.38         M       1.375         Side x4 c chaM.       Side x4 c chaM.         Side x4 c chaM.       Side x4 c chaM. <td></td> <td>Resolver Electrical Out</td> <td>put Characteristics</td> <td></td> <td></td> <td>A_</td> <td>bare leads.</td> <td>-</td> <td></td> <td></td> <td></td>		Resolver Electrical Out	put Characteristics			A_	bare leads.	-			
2       Special output compatible with AMC1 resolver input devices. Resolver No. 04535057       Single turn resolver within internal gear multiplier. Select ratio from list. below, insert after B.	le turn resolver internal gear iplier. ct ratio from list w, insert after       bare leads. Insert cable length in feet after B.       insert cable length in feet after B.       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.       E       Stainless steel input shaft and corrosion resists epoxy coating o all exposed met	modu	ules and Autotech.	ith all Gemco electronic		GR.	B	after A.		S	All stainle	ess ste
<ul> <li>3) Special output compatible with GE axis positioning modules. Resolver No. 04535041</li> <li>4) Special output compatible with Molicon motion cards. Resolver No. 04535051</li> <li>5) Special output compatible with Reliance resolver input card. Resolver No. 0453503</li> <li>6) Special output compatible with nanco resolver input card. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector.</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) DeviceNet Output. DeviceNet only offer with rear connector. Resolver No. 0453503</li> <li>7) Satisfies Account of the resolvers of the resolver of the resolver of the resolver of the resolvers of the resol</li></ul>	ct ratio from list w, insert after m dual resolver.       C       Rear exit potted pigtall with standard connector on end of cable. Insert cable length in feet after C.       E       Stainless steel input shaft and corrosion resist epoxy coating o all exposed met         D_       Side exit potted pigtall with standard connector on end of cable. Insert cable length in feet after D.       E       Stainless steel input shaft and corrosion resist epoxy coating o all exposed met	2 Spec	cial output compatible with	AMCI resolver input devices.	GM_	with internal gear	0_	bare leads. Insert cable lengt	-		shaft, bea	aring
4       Special output compatible with Modicon motion cards. Resolver No. 04535051       Imput sh Gold. Insert cable length in feet after C.       Imput sh Cable. Insert cable length in feet after C.         N       DeviceNet output. DeviceNet only offer with rear connector. Resolver No. 0453501       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.         N       DeviceNet output. DeviceNet only offer with rear connector. Resolver No. 0453501       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.         M       DeviceNet output. DeviceNet only offer with rear connector. Resolver No. 0453501       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.         M       Redor MWite E S2       Velow/Mhite E S2       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.         MACI and Motion Resolvers A Rit ReadWhite E S2       None Resolvers A Rel Nrite S Sta Black G S3 Black Ca S3       Imput sh Cable. Insert cable length in feet after D.       Imput sh Cable. Insert cable length in feet after D.         None Resolvers A Relation Resolvers A Relation Resolvers A Relation Resolvers A Relation Resolvers A Relatin ReadWhite F S3 Black G S3 Relatin Black Ca S3	Imput shaft and corrector of end of cable. Insert cable length in feet after C.       input shaft and corrosion resist epoxy coaling cable. Insert cable length in feet after D.         D_       Side exit potted pigtali with standard connector on end of cable. Insert cable length in feet after D.       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .375       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .376       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .376       1.38       Imput shaft and corrosion resist epoxy coaling call exposed me         .377       .374       Imput shaft and			GE axis positioning modules.		Select ratio from list below, insert after	C_	Rear exit potted			assembly	у.
5       Special output compatible with Relance resolver input card. Resolver. No. 0453053       D       Side exit potted pigrali with ser connector.       Side exit potted pigrali with ser connector.       Image: Solver. No. 0453053       Image: Solver. No. 0453053 <td< td=""><td>Unit dual Ver.       D_       Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable. Insert cabl</td><td></td><td></td><td>Modicon motion cards.</td><td>D1</td><td>-</td><td></td><td>cable. Insert cab</td><td></td><td></td><td>corrosion</td><td>n resist</td></td<>	Unit dual Ver.       D_       Side exit potted pigtail with standard connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable length in feet after D.       Image: Connector on end of cable. Insert cable. Insert cable length in feet after D.         .375       1.38       Image: Connector on end of cable. Insert cable. Insert cabl			Modicon motion cards.	D1	-		cable. Insert cab			corrosion	n resist
Resolver No. 04535053       reducer       feet after D.         DeviceNet output, DeviceNet only offer with rear connector.       Image: Connector connector.       Image: Connector connector.         Wiring       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         GEMCO and GE Resolvers       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         B       R2       Yellow/While       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         A       R1       Red/While       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         A       R1       Red/While       Red       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         A       R1       Red       Red       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.       Image: Connector connector.         A       R1       Red       Red       Red       Image: Connector connector.       Image: Connector connecton.       Image: Connector connecto	feet after D.         Gear Multipliers         1:2       1:5       1:5         1:2       1:5       1:5         1:2       1:5       1:6         375       1.38       1.51       50:1       180:         2:1       16:1       54:1       200:       3:1       17:1       58:1       210:         4:1       18:1       60:1       225:       4.75:1       19:1       64:1       250:         5:1       19:5:1       65:1       270:       6:1       20:1       70:1       310:         6.15:1       21.66:1       73:1       350:       7:1       23:1       175:1       360:         7.5:1       24:1       80:1       400:       7.625:1       25:1       90:1       500:         8:1       30:1       91:1       520:       91:1       31:25:1       100:1       1200:         9:1       31:25:1       100:1       120:0       10:1       42:1       150:1       21:60:         11:1       42:1       150:1       21:60:1       12:1       42:1       150:1       21:60:1         11:1       42:1       150:1       21:60:1       12:	Reso	olver No. 04535023	-		resolver.	D_	standard connect	tor on end of	-		
Resolver No. 04535001         Wiring         CEMCO and GE Resolvers         Pin       RedofWhile         R       R         R       RedofWhile         S2       Yellow/While         F       S4         B       R2         Yellow/While       C         F       S4         B       R2         Yellow/While       C         F       S4         B       R2         Yellow/While       C         F       S4         B       R1         Red       Red         S1       Red         S2       Yellow/While         F       S3         B       R1         R2       Yellow/While         F       S3         B       R2         Yellow/While       Kadd         F       S3         B       R2         Yellow/While       Kadd         F       S3         B       R2         Yellow/While       Kadd         F       S3         B ack       Red <td>1.2   1.5   1.5 <math display="block">1.2   1.5   1.5</math> <math display="block">1.2   1.5   1.5</math> <math display="block">1.38   1.00   1.00   1.00   3.11   15.1   50.1   180   2.1   16.1   54.1   200   3.1   17.1   58.1   210   4.1   18.1   60.1   225   4.75.1   19.1   64.1   250   5.1   19.51   65.1   270   6.1   20.1   70.1   310   6.15.1   21.66.1   73.1   350   7.1   23.1   75.1   360   7.51   24.1   80.1   400   7.625.1   25.1   90.1   500   8.1   30.1   91.1   520   9.1   31.25.1   100.1   1200   9.2.1   35.1   115.1   1500   9.51   38.1   120.1   2000   10.1   40.1   128.1   2150   121.1   42.1   150.1   2160   14.1   48.1   160.1   7760   14.1</math></td> <td></td> <td></td> <td>Namco resolver input card.</td> <td></td> <td></td> <td></td> <td></td> <td>le length in</td> <td></td> <td></td> <td></td>	1.2   1.5   1.5 $1.2   1.5   1.5$ $1.2   1.5   1.5$ $1.38   1.00   1.00   1.00   3.11   15.1   50.1   180   2.1   16.1   54.1   200   3.1   17.1   58.1   210   4.1   18.1   60.1   225   4.75.1   19.1   64.1   250   5.1   19.51   65.1   270   6.1   20.1   70.1   310   6.15.1   21.66.1   73.1   350   7.1   23.1   75.1   360   7.51   24.1   80.1   400   7.625.1   25.1   90.1   500   8.1   30.1   91.1   520   9.1   31.25.1   100.1   1200   9.2.1   35.1   115.1   1500   9.51   38.1   120.1   2000   10.1   40.1   128.1   2150   121.1   42.1   150.1   2160   14.1   48.1   160.1   7760   14.1$			Namco resolver input card.					le length in			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1:2 1:5 1:9 $1:2 1:5 1:9$ $1:2 1:5 1:9$ $1:2 1:5 1:9$ $1:2 1:5 1:9$ $1:2 1:5 1:9$ $1:2 1:5 1:9$ $1:5 1 1:5 1:9$ $1:5 1 1:5 1:9$ $1:5 1:$			only offer with rear connector.							Coor Multiplio	
Wiring         Status         Status<	.375 - 1.38 - 1.5:1 50:1 180 2:1 16:1 54:1 200 3:1 17:1 58:1 210 4:1 18:1 60:1 225 4.75:1 19:1 64:1 250 5:1 19:5:1 65:1 270 6:1 20:1 70:1 310 6.15:1 21.66:1 73:1 350 7:1 23:1 75:1 360 7:1 23:1 75:1 360 7:1 23:1 75:1 360 7:5:1 24:1 80:1 400 7.625:1 25:1 90:1 500 8:1 30:1 91:1 520 9:1 31.25:1 100:1 1200 9:1 31.25:1 100:1 1200 10:1 40:1 128:1 2156 12:1 42:1 150:1 216 14:1 48:1 160:1 776 <b>DeviceNet Wiring</b> 1. Drain 2. V t <sub>5</sub> 3. V t <sub>5</sub> 4. Can H	Reso	olver No. 04535001							1:2		
Wiring         Status         Status<	.375 - 1.38 - 1.5:1 50:1 180 2:1 16:1 54:1 200 3:1 17:1 58:1 210 4:1 18:1 60:1 225 4.75:1 19:1 64:1 250 5:1 19:5:1 65:1 270 6:1 20:1 70:1 310 6.15:1 21.66:1 73:1 350 7:1 23:1 75:1 360 7:1 23:1 75:1 360 7:1 23:1 75:1 360 7:5:1 24:1 80:1 400 7.625:1 25:1 90:1 500 8:1 30:1 91:1 520 9:1 31.25:1 100:1 1200 9:1 31.25:1 100:1 1000 9:1 31.25:1 1000 9:1 31.25:1 1000 9:1 31.25:1											
GEMCU and GE Resolvers         A       R1       RedWhite         C       S3       Black         D       S1       Red         E       S2       Yellow/White         A       R1       RedWhite         B       R2       Yellow/White         F       S4       Blue         AMCI and Modicon Resolvers       Amage And Modicon Resolvers         A       R1       RedWhite         E       S4       Blue         MS3       Black       Blue         MCI and Modicon Resolvers       Maxmac Resolvers         A       R1       RedWhite         E       S4       Blue         Maxmac Resolvers       Massilization-P CONNECTOR         A       R1       RedWhite         B       R2       Yellow/White         E       S4       Blue         Maxmac Resolvers       Maxmac Resolvers         A       R1       RedWhite         B       R2       Yellow/White         F       S3       Black         Reliance Resolvers       A         A       R1       RedWhite         F       S3       Black	$\begin{array}{c c c c c c c c c c c c c c c c c c c $						- 1 20 -			•		1
Pin       Reldv       Wile Color       Art R       ReldWhile         B       R2       Yellow/While       Optional Side       Art I       RedWhile         D       S1       Red       Mount Connector       3747       S1       17.1       58.1         F       S4       Blue       Blue       S2       Yellow/White       51       195.1       65.1         F       S4       Blue       S3       Black       61       20.1       70.1         A       R2       Yellow/White       Mount Connector       3747       65.1       195.1       65.1         F       S4       Blue       Blue       Mosatozatosatosatosatosatosatosatosatosatosatos			1			.575					_	
B       R2       Vellow/White         C       S3       Black         D       S1       Red         E       S2       Yellow         F       S4       Blue         A       R2       Yellow/White         E       S2       Yellow/White         B       R1       Red/White         E       S4       Blue         C       S2       Yellow/White         F       S3       Black         G       S1       Red         Namco Resolvers       A         A       R1       Red/White         B       R1       Red/White         G       S1       Red         Namco Resolvers       A         A       R1       Red/White         B       R2       Yellow/White         G       S3       Black         G       S3       Black         Red       Go       S3         R1       Red/White       B         B       R2       Yellow/White         F       S3       Black         D       S1       Red         G       S3	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			1.21	<u> </u>		1.00					
CS3BlackDS1RedES2YellowAR2Yellow/WhiteBR1Red/WhiteCS2YellowFS3BlackCS2YellowFS3BlackGS1RedManco ResolversRed/WhiteAR1Red/WhiteES4BlueManco ResolversRedAR1Red/WhiteES2Yellow/WhiteES2Yellow/WhiteES2Yellow/WhiteBR2Yellow/WhiteFS1RedGS3BlackRed/MhiteBlackReliance ResolversRed/WhiteAR1Red/WhiteFS3BlackDS1RedGS2Yellow/WhiteFS3BlackDS1RedGS2Yellow/WhiteFS3BlackDS1Red/WhiteFS3BlackDS1Red/WhiteFS3BlackDS1Red/WhiteFS3BlackDS1Red/WhiteFS3BlackDS1Red/WhiteFS3BlackGS2Yellow/WhiteFS3BlackGS2Yellow/White	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			Ontional Si	de							
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							.3747	5:1	19.5:1	65:1	270
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       Yellow/White         F       S3       Black       G       S3.1       Red         Marco Resolvers       A       R1       Red/White       Namco Resolvers         A       R1       Red/White       P.5.1       38.1       120.1         G       S3       Black       D       S3.1       Red       D         G       S3       Black       D       S3.1       Red       D       S1       Red         G       S3       Black       D       S1       Red       D       S1       Red       D       S1       Red       D       S2       Yellow/White       Z25       3.00       S1       2.3.00       3.00       S1       1.1.12       3.00       1.1.12       3.00       1.1.12       1.1.12       1.1.12       1.1.12       1.1.12 <t< td=""><td>7:1       23:1       75:1       360         7.5:1       24:1       80:1       400         7.625:1       25:1       90:1       500         8:1       30:1       91:1       520         9:1       31.25:1       100:1       1200         9:5:1       38:1       120:1       2000         10:1       40:1       128:1       2160         11:1       48:1       160:1       7760         DeviceNet Wiring         1.12       3.V *g         4. Can H       4. Can H</td><td></td><td></td><td>2.50</td><td></td><td></td><td>_</td><td></td><td>6:1</td><td>20:1</td><td>70:1</td><td>310</td></t<>	7:1       23:1       75:1       360         7.5:1       24:1       80:1       400         7.625:1       25:1       90:1       500         8:1       30:1       91:1       520         9:1       31.25:1       100:1       1200         9:5:1       38:1       120:1       2000         10:1       40:1       128:1       2160         11:1       48:1       160:1       7760         DeviceNet Wiring         1.12       3.V *g         4. Can H       4. Can H			2.50			_		6:1	20:1	70:1	310
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         F       S3       Black         G       S1       Red         Namco Resolvers       A       R1         A       R1       Red/White         F       S1       Red         G       S3       Black         Reliance Resolvers       A       R1         A       R1       Red/White         B       R2       Yellow/White         F       S3       Black         Q       S3       Black         D       S1       Red         G       S2       Yellow/White         F       S3       Black         D       S1       Red         G       S2       Yellow         E       S4       Blue	.06 x 45 CHAM.       7.5:1       24:1       80:1       400         7.5:1       25:1       90:1       500         8:1       30:1       91:1       520         9:1       31.25:1       100:1       1200         9:5:1       38:1       120:1       2000         10:1       40:1       128:1       2150         10:1       40:1       128:1       2150         12:1       42:1       150:1       216         14:1       48:1       160:1       7760         DeviceNet Wiring         2.25       3.00       1. Drain         2.25       3.00       1. Drain       2. V ts         3. V 's       4. Can H       4. Can H								6.15:1	21.66:1	73:1	350
ES4BlueCS2YellowFS3BlackGS1RedNamco ResolversMs-3102A16-1-P CONNECTORAR1Red/WhiteBR2Yellow/WhiteES2Yellow/WhiteFS1RedGS3BlackReliance ResolversAAR1Red/WhiteBR2Yellow/WhiteFS1RedGS3BlackReliance ResolversAAR1Red/WhiteFS3BlackDS1RedGS2YellowES4BlueES4Blue	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							$\sim$	7:1	23:1	75:1	360
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						06 x 45	снам.	7.5:1	24:1	80:1	400
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								7.625:1	25:1	90:1	500
Namco ResolversAR1Red/WhiteBR2Yellow/WhiteCS4BlueES2YellowFS1RedGS2Yellow/WhiteFS3BlackDS1RedGS2Yellow/WhiteFS3BlackDS1RedGS2Yellow/WhiteFS3BlackDS1RedGS2Yellow/WhiteFS4Blue	9.2:1 35:1 115:1 1500 9.5:1 38:1 120:1 2000 10:1 40:1 128:1 2150 12:1 42:1 150:1 2160 14:1 48:1 160:1 7760 <b>DeviceNet Wiring</b> 1. Drain 2. V ts 3. V ts 4. Can H	F S	3 Black	← MS-3102A16-1-P CONNECT(	ЛК				8:1	30:1	91:1	520
Namco ResolversAR1Red/WhiteBR2Yellow/WhiteCS4BlueES2YellowFS1RedGS3BlackReliance ResolversAAR1Red/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	9.2:1 35:1 115:1 1500 9.5:1 38:1 120:1 2000 10:1 40:1 128:1 2150 12:1 42:1 150:1 2160 14:1 48:1 160:1 7760 <b>DeviceNet Wiring</b> 1. Drain 2. V ts 3. V ts 4. Can H								9:1	31.25:1	100:1	1200
AR1Red/WhiteBR2Yellow/WhiteCS4BlueES2YellowFS1RedGS3BlackReliance ResolversAAR1Red/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	9.5:1 38:1 120:1 2000 10:1 40:1 128:1 2150 12:1 42:1 150:1 2160 14:1 48:1 160:1 7760 DeviceNet Wiring 2.25 3.00 1.Drain 2. V ts 3. V s 4. Can H				3.0	00			9.2:1		115:1	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	10:1         40:1         128:1         2150           12:1         42:1         150:1         2160           14:1         48:1         160:1         7760           DeviceNet Wiring           2.25         3.00           3         -         -           4. Can H         -         -											
ES2YellowFS1RedGS3BlackDeviceNet WirinReliance ResolversAR1Red/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	12:1         42:1         150:1         2160           14:1         48:1         160:1         7760           DeviceNet Wiring         1.12         3         2.25         3.00           3         4.Can H         3.V *s         4.Can H					- 1.12					_	<u> </u>
FS1RedGS3BlackReliance ResolversRed/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	14:1         48:1         160:1         7760           DeviceNet Wiring         1.12					<u> </u>					_	
GS3BlackReliance ResolversAR1Red/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	DeviceNet Wiring										_	
A     R1     Red/White       B     R2     Yellow/White       F     S3     Black       D     S1     Red       G     S2     Yellow       E     S4     Blue	2.25 3.00 2.25 3.00 3 1. Drain 2. V +5 3. V -5 4. Can H						+		14:1	48: I	160:1	//60
AR1Red/WhiteBR2Yellow/WhiteFS3BlackDS1RedGS2YellowES4Blue	2.25 3.00 2.25 3.00 3 1. Drain 2. V +5 3. V -5 4. Can H	R			)—	$-\oplus +$			D	eviceN	let Wirin	a
BR2Yellow/WhileFS3BlackDS1RedGS2YellowES4Blue	2.25 3.00 3											3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1. Drain 2. V +5 3. V -5 4. Can H								2 -	\	$\int^{-1}$	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2. V +5 3. V -5 4. Can H				-	2.25	5 3.00		3 –	X	h 1. ۵	Drain
E S4 Blue	4. Can H								l X	$\langle \rangle$	)   2. V	√ +s
		D S'			$\mathbf{\lambda}$				((	( 🍋 🛛	3. V	/- <sub>S</sub> Can H
	5. Can L	D S' G Si			1							
		D S' G Si			, / ⊢					Y		

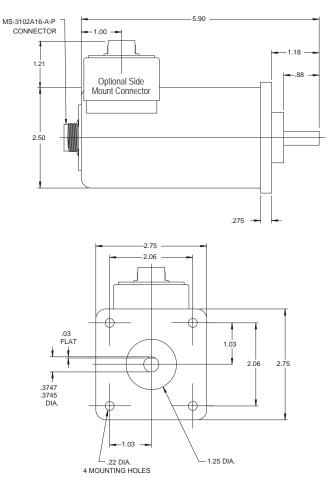




# **C** Series

<u>19</u> 8	<u>86</u> <u>C</u>	- <u>1</u>		<u> </u>		<u> </u>		<u> </u>	
Mo	Mounting Configuration and			Single/Multi-Turn		Connection	Options		
	Shaft Size	_		Single turn resolver.	R		X	None	
C	2.06" square flange mount 3/8" input shaft		GR	No gear reducer.	S	nector.           Side mount connector.	- P	Additional protec- tive shaft seal	
	· · · · ·		GK_	Single turn resolver with internal gear	-			for high pressure	
	Resolver Electrical Output Charac	teristics		reducer. Select ratio from list	A_	bare leads.		washdown envi- ronments.	
1	Standard output compatible with all Gemco electronic modules and Autotech.			below, insert after GR.		Insert cable length in feet after A.	S	All stainless steel	
2	Resolver No. 04535001 Special output compatible with AMCI reso Resolver No. 04535076	olver input devices.	GM_	Single turn resolver with internal gear multiplier.	B	Side exit potted pigtail with bare leads. Insert cable length in feet after B.		including input shaft, bearing housing and can	
3	Special output compatible with GE axis per Resolver No. 04535044	ositioning modules.		Select ratio from list below, insert after	C_	_ Rear exit potted pigtail with		assembly. Stainless steel	
4	Special output compatible with Modicon motion cards. Resolver No. 04535051		D1	GM. 64 turn dual resolver.		standard connector on end of cable. Insert cable length in feet after C.		input shaft and corrosion resistant	
5	Special output compatible with Reliance r Resolver No. 04535023	h Reliance resolver input card.		128 turn dual resolver.	D_			epoxy coating on all exposed metal.	
6	Special output compatible with Namco real Resolver No. 04535053	solver input card.	* Leng reduce	ths may vary with gear r		cable. Insert cable length in feet after D.			

	V	/iring				
	GEMCO ar	nd GE Resolvers				
Pin	Rotor	Wire Color				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S3	Black				
D	S1	Red				
E	S2	Yellow				
F	S4	Blue				
A	MCI and N	Iodicon Resolvers				
Α	R2	Yellow/White				
В	R1	Red/White				
E	S4	Blue				
С	S2	Yellow				
F	S3	Black				
G	S1	Red				
	Namo	o Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S4	Blue				
E	S2	Yellow				
F	S1	Red				
G	S3	Black				
	Relian	ce Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
F	S3	Black				
D	S1	Red				
G	S2	Yellow				
E	S4	Blue				



- 1.25 DIA.

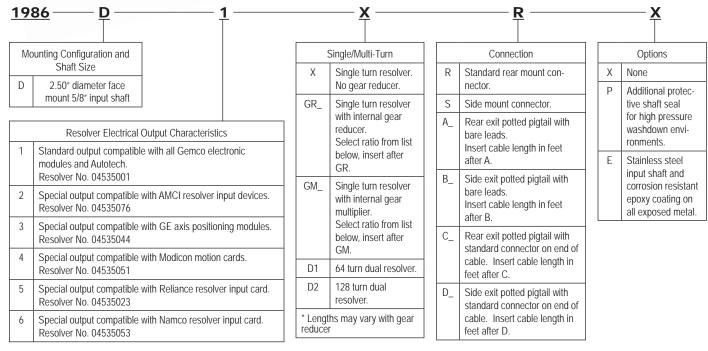
	Gear Multiplie	rs
1:2	1:5	1:9

:	Single Resolver	Gear Reducer	S
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

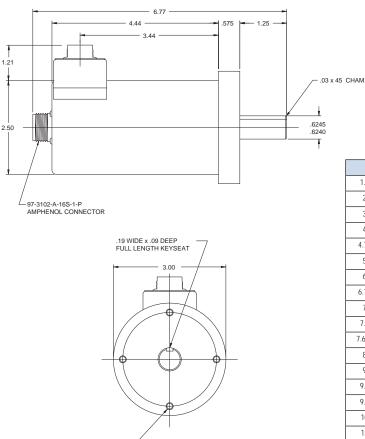




# **D** Series



	V	/iring				
	GEMCO a	nd GE Resolvers				
Pin	Rotor	Wire Color				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S3	Black				
D	S1	Red				
Е	S2	Yellow				
F	S4	Blue				
A	MCI and M	Iodicon Resolvers				
А	R2	Yellow/White				
В	R1	Red/White				
Ε	S4	Blue				
С	S2	Yellow				
F	S3	Black				
G	S1	Red				
	Namc	o Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S4	Blue				
Е	S2	Yellow				
F	S1	Red				
G	S3	Black				
	Relian	ce Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
F	S3	Black				
D	S1	Red				
G	S2	Yellow				
Е	S4	Blue				



#10-32 UNC-2B - .31 DEEP 4 PLACES EQUALLY SPACED ON A 2.50 DIA, BOLT CIRCLE.

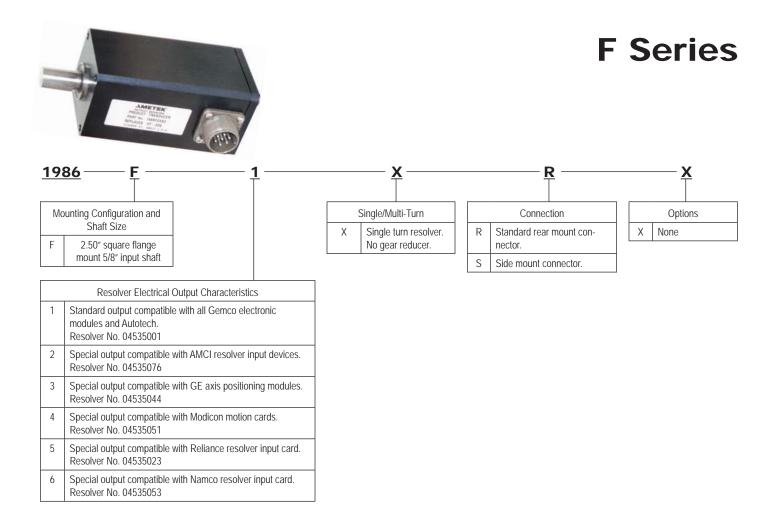
	Gear Multiplie	rs
1:2	1:5	1:9

:	Single Resolver	Gear Reducer	s
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

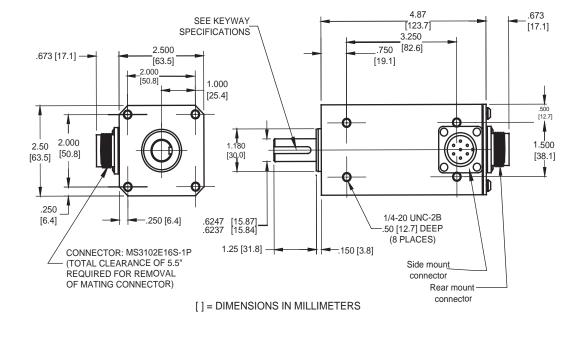


		Experience of the second						E	E S	eri	es
<u>198</u>	<u> 86</u> —	— <u>E</u> ——	<u>1</u>		<u> </u>		<u>R</u> -			—_ <u>X</u>	
Мо	unting Co	nfiguration and			Single/Multi-Turn		Connection			Optior	ns
	Shat	t Size		Х	Single turn resolver.	R	Standard rear mou	ınt	Х	None	
E		m face mount input shaft		GR_	No gear reducer. Single turn resolver with internal gear		connector.		P	Additionative shaft for high p	t seal pressure
		esolver Electrical Ou			reducer. Select ratio from list					washdov ronments	
1	modules	output compatible v and Autotech. No. 04535001	vith all Gemco electronic	CM	below, insert after GR.				S	All stainle construc	tion
2	Resolver	No. 04535076	h AMCI resolver input devices.	GM_	Single turn resolver with internal gear multiplier.					including shaft, be housing	aring and can
3	Resolver	No. 04535044	h GE axis positioning modules.		Select ratio from list below, insert after GM.				E	Stainless input sha	steel
4		No. 04535051	n wouldon motion carus.	D1	64 turn dual resolver.					corrosior	n resistant
5		output compatible wi No. 04535023	h Reliance resolver input card.	D2	128 turn dual resolver.					epoxy co all expos	ed metal.
6		output compatible wi No. 04535053	h Namco resolver input card.	* Lengt reduce	ths may vary with gear r						
Pin A B C D	GEMCO an Rotor R1 R2 S3 S1	Viring ad GE Resolvers Wire Color Red/White Yellow/White Black Red	.06 FLAT (1.52mm) .625 (15.88mm) .75 (19.05mm)		)		AMPHENOL #MS-3102E-16S-1P			Gear Multiplie	rs
E F	S2 S4	Yellow Blue	.97						1:2	1:5	1:9
A	AMCI and M R2	lodicon Resolvers Yellow/White	.20 -		J.				Single Resolver	Gear Reducer	'S
В	R1	Red/White		■.69 ■ 17.53mm)				1.5:1	15:1	50:1	180:1
E C	S4 S2	Blue Yellow			6.69 (169.93mm)			2:1	16:1 17:1	54:1 58:1	200:1
F	S3	Black		t	■ 3.94		-	4:1	18:1	60:1	225:1
G	S1 Namc	Red D Resolvers	-		(100.08mm)			4.75:1	19:1	64:1	250:1
A	R1	Red/White			(80.01mm)			5:1	19.5:1	65:1	270:1
B	R2 S4	Yellow/White Blue	-					6:1	20:1	70:1	310:1
E	S2	Yellow				$\bigcirc$		6.15:1 7:1	21.66:1 23:1	73:1 75:1	350:1 360:1
F	S1 S3	Red Black	-			<b>9</b>	N -	7:1	23:1	80:1	400:1
		ce Resolvers	-	-8				7.625:1	25:1	90:1	500:1
A	R1	Red/White	-	1				8:1	30:1	91:1	520:1
B	R2 S3	Yellow/White Black	-		<u>∖ X I</u> ,	//	/	9:1	31.25:1	100:1	1200:1
D	S1	Red						9.2:1	35:1	115:1	1500:1
G	S2 S4	Yellow Blue	-		$/ \checkmark$	*	Ļ	9.5:1	38:1	120:1	2000:1
ĹĹ	J 34	Diud		L	<ul> <li>M6 x 1.00 TAP -6 PLACES EQUALLY SPACED ON A</li> </ul>		ŀ	10:1	40:1	128:1 150:1	2150:1 2160:1
					EQUALLY SPACED ON A 2.7559 (70mm) B.C.		-	14:1	42.1	160:1	7760:1





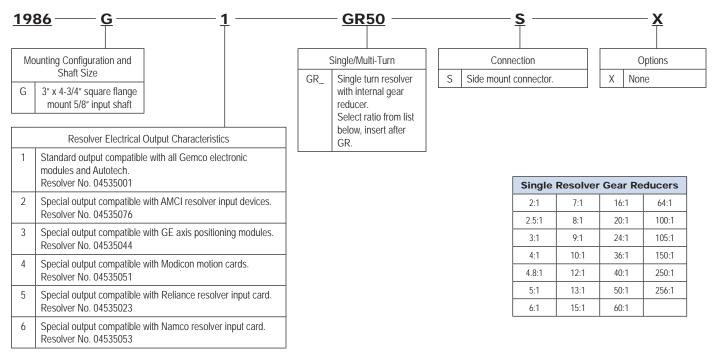
	Wiring					
GEMCO and GE Resolvers						
Pin	Rotor	Wire Color				
А	R1	Red/White				
В	R2	Yellow/White				
С	S3	Black				
D	S1	Red				
Е	S2	Yellow				
F	S4	Blue				
A	MCI and N	Iodicon Resolvers				
Α	R2	Yellow/White				
В	B R1 Red/White					
Е	E S4 Blue					
С	C S2 Yellow					
F	F S3 Black					
G	S1	Red				
	Namc	o Resolvers				
А	R1	Red/White				
В	R2	Yellow/White				
С	S4	Blue				
E	S2	Yellow				
F	S1	Red				
G	S3	Black				
	Relian	ce Resolvers				
А	R1	Red/White				
В	R2	Yellow/White				
F	S3	Black				
D	S1	Red				
G	S2	Yellow				
Е	Blue					



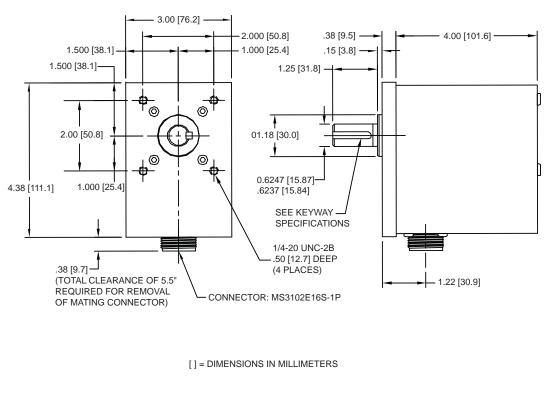




# **G** Series



	Wiring					
		nd GE Resolvers				
Pin	Rotor	Wire Color				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S3	Black				
D	S1	Red				
Е	S2	Yellow				
F	S4	Blue				
A	MCI and N	Iodicon Resolvers				
Α	R2	Yellow/White				
В	R1	Red/White				
Е	S4	Blue				
С	S2	Yellow				
F	S3	Black				
G	S1	Red				
	Namc	o Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S4	Blue				
Е	S2	Yellow				
F	S1	Red				
G	S3	Black				
	Relian	ce Resolvers				
Α	R1	Red/White				
В	R2	Yellow/White				
F	S3	Black				
D	S1	Red				
G	S2	Yellow				
Е	S4	Blue				

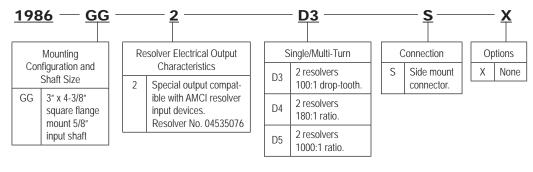


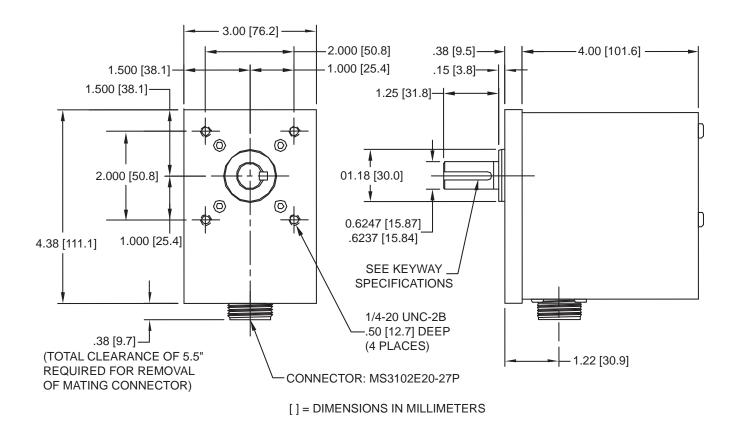


# **GG Series**



Wiring						
	Resolver #1 (Fine)					
Pin #	Rotor	Wire Color				
A	R1	Red/White				
В	R2	Yellow/White				
G	S2	Yellow				
Н	S4	Blue				
1	S3	Black				
J	S1	Red				
	Resolver #	2 (Coarse)				
A	R1	Red/White				
В	R2	Yellow/White				
С	S4	Blue				
D	S2	Yellow				
E	S3	Black				
F	S1	Red				
	AN	ICI				





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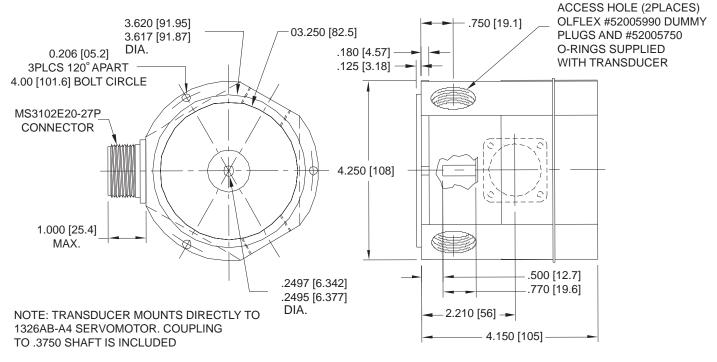


## **H** Series



AMCI

	Wii	ring	<u>198</u>	<u>86 — H</u>		<u> </u>		— <u>D3</u> ——		<u>s</u> —		<u> </u>																
	Resolver	#1 (Fine)																										
Pin #	Rotor	Wire Color	м	Mounting		Mounting		Mounting		Mounting		Mounting		Mounting		Mounting Resolver Electrical Output		Single/Multi-Turn		Connection		Options						
А	R1	Red/White	Config	guration and		Characteristics		D3 2 resolvers		Side mount		X None																
В	R2	Yellow/White	Sł	haft Size	2 Special output compatible			100:1 drop-tooth.		connector.		X None																
G	S2	Yellow	н   :	Servo mount		with AMCI resolver input					_																	
Н	S4	Blue		1/4" input			devices.																					
1	S3	Black		shaft		Resolver No. 04535076																						
J	S1	Red																										
	Resolver #	<sup>#</sup> 2 (Coarse)																										
A	R1	Red/White																										
В	R2	Yellow/White																										
С	S4	Blue																										
D	S2	Yellow																										
E	S3	Black																										
F	S1	Red																										



[] = DIMENSIONS IN MILLIMETERS



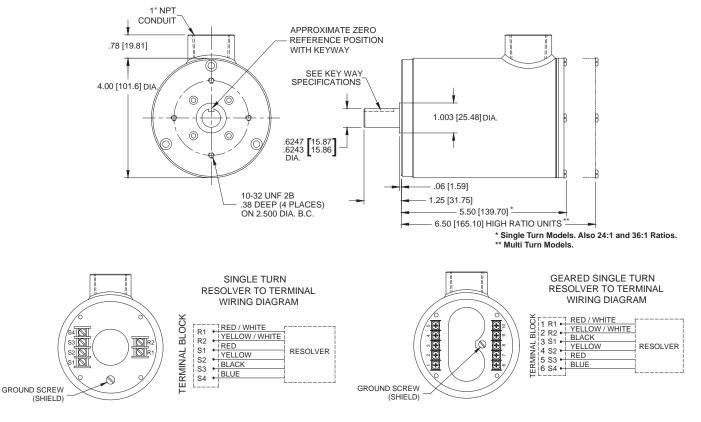
11

# I Series



	<u>1986I</u>	- 1		— <u>X</u> —					<u>s</u> —	— <u>X</u>	
Mounting			Resolver Electrical Output		Single/Multi-Turn					0	ptions
	onfiguration and Shaft Size	1	Characteristics Standard output compatible with	X Single turn resolver. No gear reducer.				X	None		
Ι	4.00" round face mount 5/8" input shaft		all Gemco electronic modules & Autotech. Resolver No. 04535001	GR	Single tu internal	ırn resolv gear redu			-	onnectio	-
	AMO Res 3 Spe GE		Special output compatible with	1.5:1 to 520:1.Lengths may vary with gear reducer.			- 1		Side conduit entrance w/ terminal blocks		
			AMCI resolver input devices. Resolver No. 04535076					Consult factory for othe connector options.			
			Special output compatible with GE axis positioning modules. Resolver No. 04535044								
		4	Special output compatible with Modicon motion cards.	Single Resolver Gear Reducers							
		4		1.5:1	7.5:1	15:1	24:1*	48:1	75:1	160:1	360:1
			Resolver No. 04535076	2:1	7.625:1	16:1	25:1	50:1	80:1	180:1	400:1
		5	Special output compatible with	3:1	8:1	17:1	30:1	54:1	90:1	200:1	500:1
			Reliance resolver input card.	4:1	9:1	18:1	31.25:1	58:1	91:1	210:1	520:1
			Resolver No. 04535023	4.75:1	9.2:1	19:1	35:1	60:1	100:1	225:1	
		6	Special output compatible with	5:1	9.5:1	19.5:1	36:1*	64:1	115:1	250:1	
			Namco resolver input card.	6:1	10:1	20:1	38:1	65:1	120:1	270:1	
			Resolver No. 04535053	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



## **Explosion Proof Resolver**

<u>1986</u> — <u>XP</u> –

Мс	ounting Configuration and Shaft Size
ХP	4.50" square mounting
	3/8" input shaft

Singl	e Resolver	Gear Red	lucers
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	

	Resolver Electrical Output Characteristics				
1	1 Standard output compatible with all Gemco electronic modules. Resolver No. 04535001				
2	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	5 Special output compatible with Reliance resolver input card. Resolver No. 04535023				
6					

1

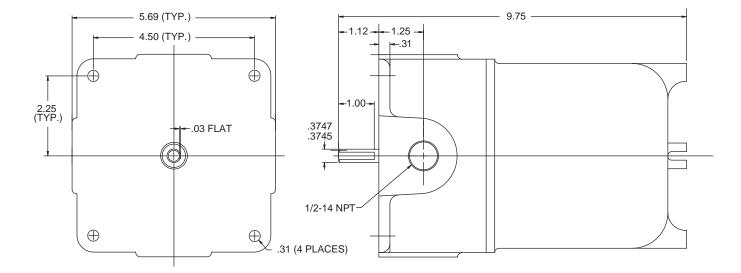
	<u>GR50</u>					
	Single/Multi-Turn					
X Single turn resolver. No gear reducer.						
GR_ Single turn resolver with internal gear reducer. Select ratio from list below, insert after GR.						
GM_	GM_ Single turn resolver with internal gear multiplier. Select ratio from list below, insert after GM.					
D1	64 turn dual resolver.					
D2	128 turn dual resolver.					

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.







1

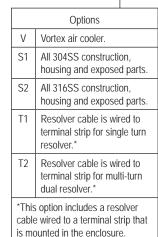
# Mill-Duty Resolver Housing

\*Resolver not included in the price of the housing.

### <u>1986MD</u>

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

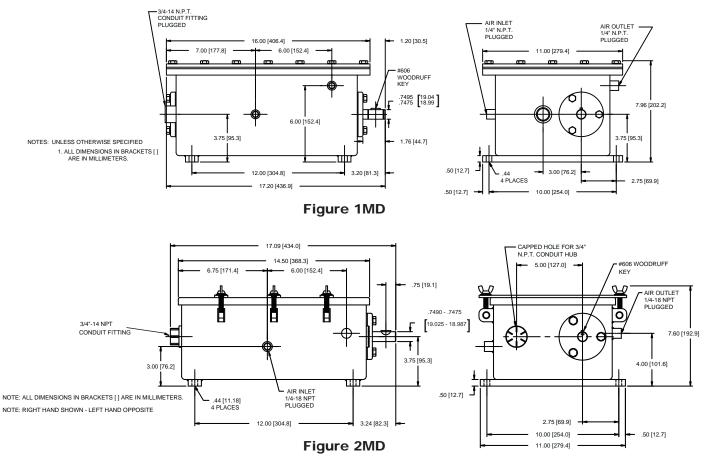
	<u>AR</u>		<u> </u>			
	Shaft Configuration		ar Ratio Between Input			Ор
AR	Std. 3/4" input shaft exiting		Shaft and Resolver		V	Vortex air
the right end of the housing		1	Standard 1:1 gearing.		S1	All 304SS
AL	AL Std. 3/4" input shaft exiting the left end of the housing.		2:1 gear reduction.		housing a	
			3:1 gear reduction.	S2	All 316SS	
В			1:2 gear multiplier.			housing ar
	both ends of the housing.	5	1:3 gear multiplier.		T1	Resolver of terminal st resolver.*
					Т2	Resolver



VT1

Is mounted in the enclosure. It does not include a resolver.

### Housing for Single-Turn Resolver Shaft Shown Exiting Right End

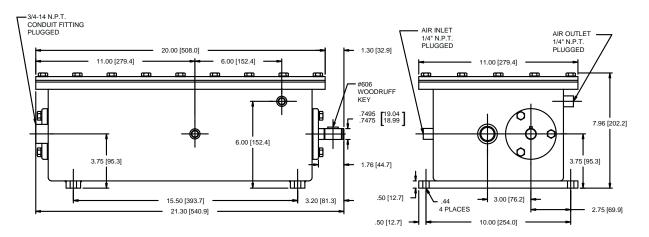




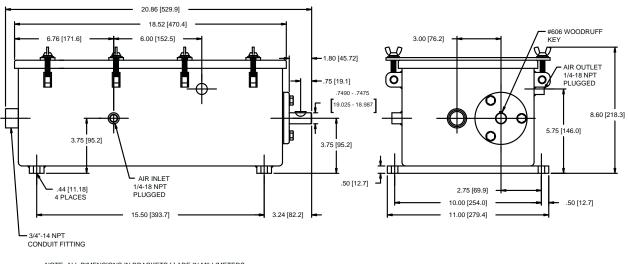




Housing for Geared or Multi-Turn Dual Resolver Shaft Shown Exiting Right End







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

Figure 4MD



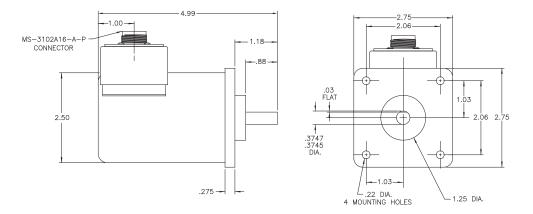
## **Other Resolver Options**

### 1986-2004 Resolver

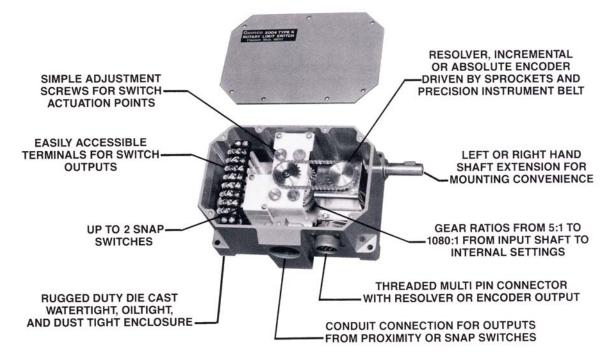
	Wiring					
GEMCO, GE, Modicon, and Reliance Resolver						
Pin	Rotor	Wire Color				
Α	R1	Red/White				
В	R2	Yellow/White				
С	S3	Black				
D	S1	Red				
E	S2	Yellow				
F	S4	Blue				

16

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



### 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 singe 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 f	eet 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 f	eet 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.
	Resolver cable for multi-turn dual resolvers, 22AWG, 6 twisted pairs with shield.
01533015L_	eet 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
- 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



- All 304 stainless steel construction
- Adjustable trunnion 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
- Repeatable to +/- 0.001" (+/- 0.025 mm)



#### 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
- Programable Zero & Span
- Diagnostic LED
- IP 68 rated

- 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



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### **Bus Cards**

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





### **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

#### **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



### 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<sup>™</sup> liquid level controls. AMETEK APT has more than 60 years of application experience and markets its products globally.



### **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
- Available in nylon



### **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



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- Custom designs are a specialty





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