

EA Series Actuators





Eurotherm



Series EA Actuators

For use with VB-7000 Series or VB-9000 Series valve bodies from Barber-Colman and many other commercially available rotary shaft valve bodies with crankarms. Also for use with HVAC and combustion air dampers

Used for two position floating and proportional control of dampers and valves in industrial applications. Typical applications are heat treat furnaces, ovens, heat recovery systems, water or oil cooling systems. These actuators provide the requirements of both damper control and valve control applications where it is desirable to move the load in either direction or to stop it at any point in the stroke, All models contain feedback slidewires for true position-proportional control.

Low Torque, Medium Torque, and Spring Return

(Series EA40, EA50, and EA60)

- Features:
 - Proportional Actuators with Built-in Feedback Potentiometer
 - Spring Return and Non-spring Return Models Available
 - 24 Vac, 120 Vac and 240 Vac Models Available
 - Oil Immersed Motor and Gear Train
 - SPDT Auxiliary Switch Standard

High Torque

(Series EA70)

Features:

- Proportional Actuators with Built-in Feedback Potentiometer
- 120 Vac and 240 Vac Models Available
- Die Cast Housings with Four 1/2" Conduit Openings
- Oil Immersed Motor and Gear Train
- SPDT Auxiliary Switch Standard

Current to Position Converters and Resistance to Position Converters for Electric Actuators

(Series 658, 659)

Features:

- Solid State Switching Output
- Fast Response
- Adjustable Zero, Span and Deadband
- Two Wire Input from Controller
- Operates with 90 to 1000 Ω Feedback Slidewire in Electric Actuator
- Burner Purge (Optional)

The Series 658 is a current to position converter which is typically located electrically between a primary controller and an electric actuator. The Series 659 is a resistance to position converter which is typically located electrically between a retransmitting slidewire and an electric actuator. Models 658A and 659A are designed for mounting directly to the side of the actuator; models 658B and 659B are designed with a mounting flange for securing it to any flat surface.

EA40 Series

EA40 Series

The spring return actuator will proportionally position a fuel valve, butterfly valve, damper and similar devices which require return to a normal position on power interruption. The output shaft is power operated in both directions. An internal electrical holding circuit maintains the proper damper position at setpoint. The enclosed spring drives the output shaft and gear train to return the damper to a normal position on power interruption. Power consumption is 28 W. Standard features includes 100 Ω internal feedback slidewire and single internal SPDT switch. Shipping weight, 8 lbs.





- Spring Return Actuator
- Low torque

Specifications

Control Action:	 Floating. Requires SPDT switch with floating (center off) position rated at 0.9 amps. Proportional, electric. Proportional, electronic. Requires 658A converter.
Connections:	Coded screw terminals.
Shaft Rotation:	Reversible proportional can stop at any point in the stroke.
Spring Return:	To normal position on power interruption.
Auxiliary Switch:	Adjustable SPDT snap acting. Factory set to close one contact and open the other at end of clockwise rotation.
Ambient Temperature Limits:	-40 to 136°F (-40 to 58°C).
Humidity:	5 to 95% rh, non-condensing.
Case:	Die cast aluminum with two 1/2" conduit knockouts each side.
Mounting:	Damper - upright.
	Valve - upright with actuator above centerline of valve body.
Dimensions:	7″ H x 5-3/8″ W x 8-1/8″ D (178 mm x 137 mm x 206 mm)

MODEL	ΕA		0 0	E
Field No.	1 2 3 1 -	56789	10 11 12	13 1/ 15
riela no.	1 2 3 4 -	5 0 / 0 / -		13-14-15
Fields 1, 2. Mo	del Series		Fields 7, 8. Opti	ons
Fields 3, 4. Bas	e Model - Spring Re	eturn Actuator	- 00	None
	Travel Time	Torque	37 -	NEMA 4 weather resistant cover. This option
	Limit (Seco	nds) (Lbs./in.)		must be included if rain tight converter is
41 -	90° 45	50 (clockwise return)		ordered
42 -	180° 90	50 (clockwise return)	Field 9. Motor V	oltage/Frequency
44 -	180° 90	50 (counter-clockwise	0 -	120 Vac 60 Hz
		return)	3 -	240 Vac 60 Hz (not available with EA41)
			4 -	240 Vac 50 Hz (not available with EA41)
Fields 5, 6. Inp	ut		5 -	24 Vac 60 Hz (not available with EA41 or
Note: Model 6	58A is a current to p	position converter; model		658A or 659A)
659A is a resist	ance to position co	onverter.		
	Input Signal	Converter Model	E'	
00 - Co	ntact		Fields IU, II. Re	eserved
11 -	4 to 20 mAdc	658A-00001	Field 12. Feedba	ack Slidewire
12 -	4 to 12 mAdc	658A-00002	0 -	100 Ω
13 -	12 to 20 mAdc	658A-00003	1 -	135 Ω
14 -	2 to 12 mAdc	658A-00004	2 -	500 Ω
15 -	2 to / mAdc	658A-00005	3 -	1000 Ω
16 -	/ to 12 mAdc	658A-00006		
19 -	Other, Special	658A-00008-000-E-XX*	Fields 13 Reserv	ved
31 -	Slidewire	659A-00000	E	
The following of	codes are rain tight	input converters mounted to		
the series EA.	o order the series	EA weather resistant, you	Fields 14 15 Sr	pecial
must select co	/er option 37 (fields	5 /, 8).	00 -	None
04	Rain Tight Conve	erters:	00	None
21 -	4 to 20 mAdc	658A-00011		
22 -	4 to 12 mAdc	658A-00012		
23 -	12 to 20 mAdc	658A-00013		
∠4 - 25	2 to 12 mAdc	658A-UUU14		
25 -	2 to / mAdc	658A-00015		
20 -	/ to 12 mAdc	658A-00016		
29 -	Other, Special	658A-00018-000-E-XX*		
41 -	Slidewire	659A-00010		

*Consult factory.

EA50, EA60 Series

EA50 & EA60 Series

The medium torque actuator is ideal for proportional positioning of a fuel valve, butterfly valve, damper and similar applications. Units are available with either fixed or adjustable speed. Timing of adjustable speed units can be increased (decreasing the speed) by turning a slotted adjustment screw on the outside of the case. Adjust range is approximately ten times rated. Power consumption is 40 W. 100Ω feedback slidewire and a single SPDT switch are standard features. Shipping weight, 8 lbs.





- Medium Torque, Gear Train
- Non-Spring Return Actuator

Control Action:	1) Floating. Requires SPDT switch with floating (center off) position rated at 0.9 amps.
	2) Proportional, electric.
	3) Proportional, electronic. Requires 658A converter.
Connections:	Coded screw terminals.
Shaft Rotation:	Reversible proportional can stop at any point in the stroke.
Spring Return:	To normal position on power interruption.
Auxiliary Switch:	Adjustable SPDT snap acting. Factory set to close one contact and open the other at end of
	clockwise rotation.
Ambient Temperature	
Limits:	-40 to 136°F (-40 to 58°C)
Humidity:	5 to 95% rh, non-condensing.
Case:	Die cast aluminum with two 1/2" conduit knockouts each side
Mounting:	Damper - upright.
	Valve - upright with actuator above centerline of valve body.
Dimensions:	7″ H x 5-3/8″ W x 8-1/8″ D (178 mm x 137 mm x 206 mm)

Specifications

MOD	DEL	ΕA					E
Field	No	1 2 3 4	- 5	6789-	10 1	1 12	- 13- 14 15
1 Iola	110.	1 2 0 1	0	0,0,	10 1	2	
<u></u>					Fields	57, 8. Opt	tions
Fields	11, 2. Mc	del Series			Optic	ns 00-07	can't be combined with rain tight converters.
Fields	3, 4. Bas	se Model		-	Optio	n 37 mus	t be specified with rain tight converter.
		Iravel Im	e	lorque	00	-	None
Γ1		Limit (Se	conds)	(Lbs./in.)	01	-	Two auxiliary SPDT switches
51	-	90° IZ (adj)	60	02	-	Four auxiliary SPDT switches
5Z E 2	-	180° 25 (i	adj)	60	03	-	Rear shaft
55	-	70 IZ		60	04	-	100 Ω rear slidewire
54	-	180° 25	1.2	6U 220	05	-	100Ω rear slidewire with two switches
55	-	90° 40(a	idj)	220	06	-	1000 Q rear slidewire
56	-	180° 80(a	idj)	220	07	-	1000 Q rear slidewire with two switches
57	-	90° 40		220	31	_	One 100 O rear slidewire weather resistant
58	-	180° 80		220	32		Two 100 0 rear slidewires, weather resistant
60	-	90° 65		450	33	-	Three 100 Q rear slidewires, weather resistant
61	-	180° 130		450	37	-	NEMA 4 weather resistant cover. This option
					57		must be included if rain tight convertor is
Fields	5, 6. Inp	ut					ardered
Note:	Model 6	58A is a current t	o position	converter; model			ordered
659A i	is a resist	tance to position	converter		Field	0 Motor	Valta an /Fraguenay
		Input Signal	Conv	erter Model	n N	7. WOLOI	120 Vac 60 Hz
00	-	Contact			1	_	120 Vac 50 Hz (not available with EA52 EA54
11	-	4 to 20 mAdc	658A-	00001	3	-	240 Vac 60 Hz
12	-	4 to 12 mAdc	658A-	00002	4	-	240 Vac 50 Hz (not available with EA53
13	-	12 to 20 mAd	c 658A-	00003			EA58)
14	-	2 to 12 mAdc	658A-	00004	5	_	24 Vac 60 Hz (not available with EA51
15	-	2 to 7 mAdc	658A-	00005	0		
16	-	7 to 12 mAdc	658A-	00006			EA53, EA540r 658A or 659A J
19	-	Other, Specia	658A	-00008-000-E-XX*	Fields	10 11 T	ransformer
31	-	Slidewire	659A	-00000	00	5 10, 11. 1	Nono
The fo	llowing	codes are rain tig	ht input co	onverters mounted to	00	-	Built in 120 24 Vac (not available with
the se	ries EA. ⁻	To order the serie	s EA weat	ther resistant, you	01	-	6580 or 6500
must s	elect co	ver option 37 (fiel	ds 7, 8).		02		Built in 240 24 Vac (not available with
		Rain Tight Cor	nverters:		02	-	
21	-	4 to 20 mAdc	658A-	00011			656A 01 657A)
22	-	4 to 12 mAdc	658A-	00012		40 E II	
23	-	12 to 20 mAd	658A-	00013	Field	12. Feedl	back Slidewire
24	-	2 to 12 mAdc	658A-	00014	0	-	100 \2
25	_	2 to 7 mAdc	6584-	.00015	1	-	135 Ω
26	_	7 to 12 mAde	6584-	00016	2	-	500 \$2
29	-	Other Specia	658Δ.	-00018-000-F-XX*	3	-	1000 Ω
Δ1		Slidowiro	. <u>350</u> π ζεάλ	-00010			
*Conc	- ult factor	Sildewile	037A	00010	Field	13 Reser	ved
0013		· .			E		
					Fields	s 14, 15. S	Special

00 - None

EA70 Series

EA70 Series

The high torque actuator will position a heavy damper, globe valve, blast gate, air or gas valve. It can be used for vortex control and hydraulic coupling, and will drive a speed changing screw or slide gate requiring a torque proportional actuator. Power consumption is 190 W. Standard features include 100 Ω feedback slidewire and a single SPDT switch. Shipping weight, 30 lbs. Weather resistant models are NEMA 4.



• High Torque Actuator

Control Action:	Requires SPDT switch with neutral (floating) or two position and proportional
Connections:	Coded screw terminals.
Shaft Rotation	Reversible proportional can stop at any point in the stroke.
Auxiliary Switch:	Adjustable SPDT snap acting. Factory set to close one contact and open the other at end of clockwise rotation.
Ambient Temperature Limits:	-40 to 130 °F (-40 to 54 °C).
Humidity:	5 to 95% rh, non-condensing
Mounting:	Damper - upright recommended Valve - any upright position with actuator above centerline of valve body.
Dimensions:	9-9/16″ H x 9-1/2″ W x 10-1/2″D (243 mm x 241 mm x 267 mm)

Specifications

MOD	EL	Е	А										-				-	E	Ξ	- 0)	0)	
Field	No.	1	2	3	4	-	5	6	7	8	9	-	10	11	12	-	13	3 -	- 14	11	5			
Fields ´	I, 2. Mod	lel S	erie	6									Fields Option	7, 8. ns 00	Optic -07 ca	ons an't k	be co	oml	bine	ed w	vith	ר ר +:	ain tight converte	ers.
Fields	R A Rase	Mc	امل										00	n 37 i	nust	be sp Nol	becin	iec	1 WIL	n ra	ain	τις	gnt converter.	
110103	, т . Dasc	Tra	vel	Т	Time		To	raue					01	_		Two	ישו אווב ר	vilia	arv C		τs	:\//	itches	
		lin	nit	(Se	conc	(2	(lb	s /in)				02	-		Foi	ir au	xili	arv ⁶	SPD)T <	sw/	vitches	
71	-	90)°	(00	20	,	55	0	/				03	_		Re	ar sh	aft		01 0				
72	-	18	N°	2	40		550)					04	-		100		ear	r slic	łew	vire			
73	-	90)°		3.3		110	0					05	-		100	Or	ear	r slic	lew	vire		vith two switches	
74	-	18	0°	ł	55		110	0					06	_		100	0 0	rea	ar sl	ide	wir	re.		
75	-	90)°	ŗ	57		130	0					07	-		100	0 0	rea	ar sl	ide	wir	P	with two switche	s
76	-	18	0°	1	15		130	0					41	_		One	- 100	0 0) rea	ar sl	lide	-v	vire, weather resis	stant
-					-								42	-		Two	5 100	ິດ) rea	ar sl	ide	ew.	vires, weather res	istant
Fields	5 6 Innu	t											43	-		Thr	ee 10	00	Ωre	ear s	slid	de	wires, weather	
Model	658A is a	a cui	rrent	ton	ositi	on c	onve	erter	: ma	odel	659A	is a				resi	stant	t						
resistar	nce to po	sitic	norm	nve	rter	Fith	ercc	nve	, rter	can l	he	10 0	37	-		NE	MA 4	łw	eath	neri	res	ist	tant cover	
mounte	ed on the	e sid	e of	the a	actua	ator.	allo	winc	a roc	om fo	or an													
option	on the re	ear c	of the	e act	uato	r.			,				Field 9	P. Mo	tor Va	oltad	e/Fre	eai	uen	cv				
-		In	put 9	Siana	al	(Conv	erte	r Mo	odel			0	-		120) Vac	: 60) Hz					
00	-	С	onta	ct									1	-		120) Vac	: 50) Hz	. (n	ot a	av	ailable with EA76	5)
11	-	4	to 20) mA	٨dc	6	58A	-000	21				3	-		240) Vac	: 60) Hz					,
12	-	4	to 12	2 mA	Adc	6	58A	-000	22				4	-		240) Vac	: 50) Hz	. (E/	A7	1,	EA73 and EA75	
13	-	12	2 to 2	20 m	Adc	6	58A-	-000	23							onl	/)			•		,		
14	-	2	to 12	2 mA	Adc	6	58A	-000	24							-	, ,							
15	-	2	to 7	mAc	dc	6	58A	-000	25				Fields	10.1	1. Tra	ansfo	rmei	r						
16	-	7	to 12	2 mA	٨dc	6	58A	-000	26				00	-		Nor	ne							
19	-	0	ther	, Spe	ecial	6	58A	-000)28-	000-	E-XX*		01	-		Buil	t-in ´	120) - 2	4 V	ac	(n	ot available with	
31	-	SI	idew	/ire		6	59A	-000)20							658	A or	- 65	59A))		`		
The fol	lowing co	ode	s are	rain	ı tigh	t inp	out c	onve	ertei	rs mo	ounted	d to	02	-		Buil	t-in 2	24() – 2	4 V	ac	(n	ot available with	
the seri	es EA. To	o or	der t	he s	eries	EA	wea	ther	resi	stant	t, you					658	A or	- 65	59A))				
must se	elect cove	er o	ptior	า 37	(field	ds 7,	8).												,					
Rain Tio	ght Conv	erte	ers:										Field 1	12. Fe	edba	ack S	lidev	wire	e					
21	-	4	to 20) mA	٨dc	6	58A	-000	31				0	-		100) Ω							
22	-	4	to 12	2 mA	٨dc	6	58A	-000	32				1	-		135	Ω							
23	-	12	2 to 2	20 m	Adc	6	58A-	-000	33				2	_		500)Ω							
24	-	2	to 12	2 mA	Adc	6	58A	-000	34				3	_		100	0 Ω							
25	-	2	to 7	mAc	dc	6	58A	-000	35				-											
26	-	7	to 12	2 mA	Adc	6	58A	-000	36				Field 1	13 R4	serve	-d								
29	-	0	ther	, Spe	ecial	6	58A	-000)38-	000-	E-XX*		F	10 110	550170	24								
41	-	SI	idew	vire		6	59A	-000)30				L											
*Consu	lt factory	<i>.</i>											<u> </u>	11 1	F ~									
	,												Fields	14, 1	5. Sp	ecial								

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None

Option Kits

(Fields 7 and 8 of Actuator Model No.)

All kits mount in place of the back plate on the actuator. The following optiare available for the high torque, medium torque and low torque actuators.

Actuator	Kit for	Kit for				
Option	90° Unit	180° Unit				
02	Å-9280					
05	A-9284	A-9283				
07	n/a.	71-589				

Ā	ctuator	Kit for	Kit for				
	Option	90° Unit	180° Unit				
Γ	01	ļ	A-9279				
Γ	04	A-9282	A-9281				
Γ	06	71-586	71-588				

NEMA 4 Weather Resistant Cover Kit:

Kit No. AM-369 (option 37) for EA70 Series; Kit No. A-9301 for EA 40, 50 and 60 Series.

Rear Slidewire:

(Retransmitting Slidewire)

5 W variable resistor for driving other actuators in parallel. Slidewire housing is weather resistant. Plate size for all kits is 4-1/'8" W x 6-7/8" H. Box depth as shown in photo caption.

When ordering rear slidewire kit (actuator model no. option 31, 32, 33, 41, 42 or 43), write complete part number as shown.

Ordering Information

MODEL	A- 1	0	9	4	6 -		E		
Field No.	4 - 5	6	7	8	9 -	10 11	12 -	13 - 14	15

Fields 4 through 9. Model Series

Fields 10, 11. Actuator Torque 10 -Low and medium 20 -High Field 12. Reserved Е Field 13. Number of Slidewires 1 -One slidewire (actuator option 31 or 41) 2 -Two slidewires (actuator option 32 or 42) 3 -Three slidewires (actuator option 33 or 43) Fields 14, 15. Slidewire Value 01 -100 Ω, 90° 02 -100 Ω, 180° 03 -135 Ω, 90° 1 kΩ, 90° 07 -- 80 1 kΩ, 180°



Auxiliary Switch:

A built-in, cam operated, snap acting, SPDT switch is normally included. The point of switch actuation is readily adjustable, but is factory set to close one contact and open the other at the end of the clockwise stroke. The auxiliary switch housing is not weather resistant.

Rating:	120 Vac	240 Vac					
Running Current	5.8 Amps	2.9 Amps					
Locked Rotor	34.8 Amps	17.4 Amps					
Non-Inductive	12 Amps	6 Amps					
Maximum total load not to exceed 2000 VA							

tal load not to exceed 2000 VA.



One Slidewire. 1-7/8" deep



Two Slidewire. 2-7/8" deep



Three Slidewire. 3-7/8" deep

Accessories

Medium Torque, Low Torque and Spring Return Actuators

High Torque Actuators



For Millimeters multiply inchs by 25.4 (Inches x 25.4 = Millimeters)

Mounting Dimensions

MEDIUM TORQUE AND LOW TORQUE

Side View

Bottom View



Low and medium torque and spring return output shafts have a standard 12 tooth spline. Reference ANSIB5.15. Mounting should be upright for the longest life. Models with adjustable speed must not be mounted upside down or with the output shaft upward.



For Millimeters multiply inches by 25.4 (inches x 25.4 = Milimeters).

SPRING RETURN

Side View

Bottom View



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658 Series

658 Series Current to Position Converters for Electric Actuators

The Series 658 is a current to position converter which is typically located electrically between a primary controller and an electric actuator. Model 658A is designed for mounting directly to the side of the actuator; model 658B is designed with a mounting flange for securing it to any flat surface.

The electric actuator's position is proportional to the input current from the primary controller. A built-in potentiometer in the electric actuator, with wiper arm driven by the output shaft, provides a feedback signal to the Series 658 to produce the proportional action. A change in current from the source driv the electric actuator in a direction to restore balance and return the process to the setpoint.

The signal input ordered is factory set, but is adjustable in the field to accept spans such as 4 to 20, 2 to 12, 7 to 12, 4 to 12, and 12 to 20mA. The Series 658 has a standard input impedance of 250 Ω for current output primary controllers.

A special option (65 or 66 in the model number) is available on Model 658A that provides an extra input lead (white) for activation of the purge option used on a burner control. A dry contact closure between the purge input and the input+ (red) wires will drive the actuator full open to provide 100% flow for air purge of a gas burner.

Converters with special "option 65" are wired for mounting on the left side of the actuator; converters with "option 66" are wired for the right side of the actuator.

Specifications

Input Signal:	Adjustable to controller spans ranging from 4 to 16 mAdc. Input circuit is isolated from both output circuit and ground.
Input Signal Zero:	Adjustable from 2 to 16 mAdc.
Input Impedance:	250 Ω. Other impedances obtained by adding external series or parallel resistors.
I/O Connections:	Color coded pigtail leads on Model658A. Numbered barrier terminal strip on Model 658B.
Load:	Low, medium or high torque electric actuators.
Feedback Slidewire Inputs:	90 to 1000. Ω
Grounded Input:	Grounding any input wire will not cause damage.
Open Circuit Input:	Will drive actuator to low position.
Series Operation:	No offset in control point when operated in tandem.



Model 658B with in-Panel Flange mounts



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UL recognized under the Components Program (except specials)

- Solid State Switching Output
- Adjustable Zero, Span and Deadband
- Two Wire Input from Controller
- Operates with 90 to 1000 $\Omega\,$ Feedback Slidewire in Electric Actuator
- Burner Purge (Optional Feature)

Overranging:	No effect from 100% overrange signal.
Deadband:	Deadband is the difference betwee the input signal which will drive the motor one way and the level which will drive it the other way. The percent of deadband adjustment is dependent on the input signalspan. For example, 2 to 12 mA – 2% to 8% of input span; 4 to 20 mA – 1.2% to 4.8% of input span.
Linearity:	0.15% of slidewire.
Ambient Temperature Limits:	-25 to 58°C.
Power Consumption:	7.0 VA at 120 or 240 Vac, 50 or 60 Hz.
Maximum Continuous Output Current Rating:	2.0 Amp at 24 to 240 Vac rms.
Line Regulation:	120 or 240 Vac, ±10% variation, with fixed input signal offset of 1% maximum.
Mounting:	Upright recommended (as shown) for Model 658A, but other positions are acceptable.
Shipping Weight:	Series 658 only, three pounds.

MODEL 658 000 - 000 - E -Field No. 1234-56789 - 101112 - 13-1415

Fields 1, 2, 3. Base Model

Field 4. Mounting Style:

A - Actuator

B - In-panel (flange)

Fields 5, 6, 7. Reserved

Field 8. Enclosure

- 0 Standard Mount, Standard Housing
- 1 Standard Mount, Rain TightHousing (658A only)
- 2 EA7X Mount, Standard Housing (658A only)
- 3 EA7X Mount, Rain Tight Housing (658A only)

Field 9. Input Signal

- 1 4 to 20 mAdc
- 2 4 to 12 mAdc
- 3 12 to 20 mAdc
- 4 2 to 12 mAdc
- 5 2 to 7 mAdc
- 6 7 to 12 mAdc
- 8 Other. See "special" fields 13, 14, 15.

Fields 10, 11, 12. Reserved

Fields 13 Reserved E

Fields14, 15. Special

,		
0 - 00	None	
0 - 50	1 to 5	mAdc into 1 kΩ
0 - 51	0 to 5	mAdc into 250 Ω
0 - 52	2 to 42	mAdc into 100 Ω
0 - 53	5 to 10	mAdc into 250 Ω
0 - 54	16 to 20	mAdc into 250 Ω
0 - 55	0 to 5	Vdc input signal
0 - 56	1 to 5	Vdc input signal
0 - 57	6 to 9	Vdc input signal
0 - 58	3 to 15	Vdc input signal
0 - 59	0 to 10	mAdc input signal into 250 Ω
0 - 60	10 to 50	mAdc input signal into 100 Ω
0 - 62	0 to 10	Vdc input signal
0 - 63	4 to 14	mAdc input signal into 250 Ω
0 - 64	10 to 20	mAdc input signal into 250 Ω
0 - 65	Purge op	ption, left side mount (Model 658A only)
0 - 66	Purge op	otion, right side.mount (Model 658A only
0 - 67	Right sid	e mount, no purge (Model 658A only)

Typical Applications



Dual output heat/cool controllers with outputs of 2 to 12 mAdc or 4 to 20 mAdc constant current and on/off.



One promarey controller can drive up to 12 electric actuators by means of the Series 658, special 56 converters. Input impedance is 127 Ω

A only) Mounting Dimensions 8A only) (see page 15)

659 Series

659 Series Resistance to Position Converters for Electric Actuators

The Series 659 is a resistance to position converter which is typically located electrically between a retransmitting slidewire and an electric actuator. The primary application of the Series 659 is in tandem operation of electric actuators.

Triac switching in the Series 659 drives the actuator through an angular direction corresponding to the position of the master control slidewire. A built-in potentiometer in the actuator, with wiper arm driven by the output shaft, provides a correctional feedback signal to the Series 659 to provide proportional action. The triac switching and feedback continues until balance is reached. Deadband, which is the difference between the input signal which will drive the motor one way and the level which will drive it the other way, is adjustable from 0.1% to 8% of the master control slidewire span. A deadband is recommended for less critical processes, since it will reduce mechanical wear on the actuator.





Model 659B with in-Panel Flange mounts Model 659A mounted on the left side (standard) of an electric actuator



UL recognized under the Components Program (except specials)

- Solid State Switching Output
- Fast Response
- Adjustable Deadband
- Input from 100 to 1000 Ω Slidewire

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-	М	C	CI.		ca	u	115

Input Signal:	100 to 1000 Ω slidewire			
Zero and Span:	no adjustment			
Input/Output Connections:	Color coded pigtail leads on Model 659A. Numbered barrier terminal strip on Model 659B.			
Load:	Low, medium or high torque electric actuators.			
Feedback Slidewire Inputs:	100 to 1000 Ω to match input resistance.			
Grounded Input:	Grounding either or both input wires will not cause damage.			
Deadband:	Adjustable from 0.1% to 8% of input signal span			
Linearity:	0.15% of slidewire.			
Ambient Temperature Limits:	-25 to 58°C.			
Power Consumption:	7.0 VA at 120 or 240 Vac, 50 or 60 Hz.			
Maximum Continuous Output Current Rating:	2.0 Amp at 24 to 240 Vac rms.			
Line Regulation:	120 or 240 Vac, $\pm 10\%$ variation, with fixed input signal offset of 0.5% maximum.			
Mounting:	Upright position recommended (as shown) for Model 659A, but other positions are acceptable.			

MODEL 6 5 9 0 0 0 0 0 E Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Fields 1, 2, 3. Base Model

Field 4. Mounting Style:

- A Actuator
- B In-panel (flange)

Fields 5, 6, 7. Reserved

Field 8. Enclosure

- 0 Standard Mount, Standard Housing1 Standard Mount, Rain TightHousing
- (659A only) 2 - EA7X Mount, Standard Housing
- (659A only)
- 3 EA7X Mount, Rain Tight Housing (659A only)

Fields 9-12. Reserved

Field 13. Reserved E

Fields 14 ,15. Reserved

Mounting Dimensions for 658 Current to Position Converters and 659 Resistance to Position Converters

Overall Dimensions: in millimeters (inches). 136.52[5.375] H x 139.7 [5.5] W x 69.85 [2.75] D.





75.90 [5.550]**−**|

Note: Dimensions slightly different on units designed for mounting to high torque actuators

Models 658B and 659B



Typical Application

Two actuators driven in tandem. Position limiting resistors are on the second actuator.







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FD60

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