

<b>WOODWARD ACTUATOR AND VALVE SELECTOR</b>							
Product Type	Output	Input Power	Special Driver	Input Control Signal	Prod Spec	Man	Comments
<b>Steam Turbine Actuators</b>							
TG Actuator	Rotary, 37 Deg 17.5 Ft-Lb Max	1100 to 6000 rpm, Self-contained oil sump	None-Connects directly to controller	20-160 mA, Proportional See <b>APD</b>	04044	04045	
EG Actuator	Rotary, 37 Deg 10 Ft-Lb Max	1500 to 4000 rpm, 100 psi external supply oil	None-Connects directly to controller	20-160 mA, Proportional See <b>APD</b>	82516 (EG-3P/ 6P/ 10P)	82560, 82566	
UG Actuator	Rotary, 37 Deg 20 Ft-Lb Max	375 to 1500 rpm, Self-contained oil sump	None-Connects directly to controller	20-160 mA, Proportional See <b>APD</b>	37511	37512	
UG40 Actuator	Rotary, 37 Deg 63 Ft-Lb Max	350 to 1300 rpm, Self-contained oil sump	None-Connects directly to controller	20-160 mA, Proportional See <b>APD</b>	37516	37515	
PG Actuator	Rotary, 30 Deg 478 Ft-Lb Max	200 to 1600 rpm, Self-contained oil sump	None-Connects directly to controller	20-160 mA, Proportional See <b>APD</b>	36635	36637	
PGPL Actuator	Rotary, 30 Deg 58 Ft-Lb Max or 1"linear	1500 rpm Max, Self-contained oil sump, 18-32 Vdc to driver	8251-451 Use only with PGPL Actuators	0-200 mA, Proportional See <b>APD</b>	37520	37519	
TM25/200 Proportional Actuator	Linear, 1" Max stroke 2400 Lb Max; TM55 = Rotary, 45 Deg, 55 Ft-Lb, Max	80 to 1200 psig external supply oil, TM55 = 400 to 1000 psig external supply oil	None-Connects directly to controller	20-200 mA, Proportional See <b>APD</b>	82451 (TM 25/200) 82599 (TM55)	82450 (TM 25/200) 82400 (TM55)	
TM55 Integrating Actuator	Rotary, 45 Deg, 55 Ft-Lb, Max, position feedback = redundant RVDT/LVDT	400 to 1000 psig external supply oil	Requires an integrating driver	.+/-200 mA Integrating, See <b>AID</b>	82767	82768	
CPC Current to Pressure Converter "Control Valve"	14.5 to 203 psi control oil	250 psi external oil Max, 18-32 Vdc	None-Connects directly to controller	4-20 mA, Proportional See <b>APD</b>	85202	89543	
ProAct Analog Actuator Used primarily on Engine Applications	Rotary, 75 Deg, 2.5 to 5 Ft-Lb	18-32 Vdc, 14 A Max	None-Connects directly to controller, ProAct has an internal driver	PWM: 7-32 V, 150- 3199 Hz; 20-180 mA, 4-20 mA, 0.5- 4.5 Vdc, Proportional	03231	26147	
ProAct Digital Plus Actuator Used primarily on Engine Applications	Rotary, 75 Deg, 5 to 27 Ft-Lb	18-32 Vdc, 20 A Max	None-Connects directly to controller, ProAct has an internal driver	PWM: 7-32 V, 100- 3000 Hz; 20-180 mA, 4-20 mA, and J1939 over CAN, Proportional See <b>APD</b>	03231	26112	
Hydraulic Amplifier "Actuator"	Linear, 3" Max stroke, 7.25 " bore Max, 12,250 Lb force Max	100 to 500 psi external supply oil	None-Connects directly to controller	20-160 mA, Proportional, There are some 40-320 mA dual coil versions See <b>APD</b>	89007	89015	
EHPC Electrohydraulic Power Cylinder "Actuator"	Linear, 12" Max stroke, 10 " bore Max, 19,000 Lb force Max position feedback = 4 to 20 mA or 1 to 10 Vdc	80 to 250 psi external supply oil	Requires an integrating driver	.+/- 100 mA w/ 15 mA null, 0-200 mA w/ 100 mA null, Integrating See <b>AID</b>	85189	85186	Can use the EHPC's LDT or position feedback from the valve's position
EML 100	Linear, 1.5" Max stroke, 100 Lb force, feedback = Three turn Resolver (single or dual) with motor resolver	3 phase 24 V motor drive signal from driver to actuator, 18 to 32 Vdc, 20 A to driver	8200-177 Digital driver with single resolver 8200-176 Digital driver with dual resolver	4-20 mA, RS-485 (RT SI/O), Proportional See <b>APD</b>	40186	40183	3 phase 24 V drive signal with resolver for motor commutation along with resolver excitation and single or dual position feedback. Uses RS-232 DIP (driver interface program) for setup

## WOODWARD ACTUATOR AND VALVE SELECTOR

Product Type	Output	Input Power	Special Driver	Input Control Signal	Prod Spec	Man	Comments
Woodward Electronic Controls: 723, 733, 828, Peak 150, 2301-D family, 505, 505E, 505DE, 505CC-2, Atlas 8273-2xx/4xx, SPC 8200-224/225, MicroNet cards 5501-432 +/-245mA adjustable 5464-544 0-200 mA				APD Analog Proportional Drivers			Use a MicroNet 2 channel controller or 4 channel proportional card with no position feedback, Atlas (except older versions 8273-0xx) or an SPC
MicroNet cards 5501-432 +/-245mA adjustable, SPC 8200-224/226				AID Analog Integrating Drivers			Use a MicroNet 2 channel controller with integrating output and LVDT/RVDT excitation or an SPC
SPC Servo Position Control	+/-250 mA, +/-100 mA, +/-50 mA, +/-10 mA, 0-250 mA, 0-100 mA, 0-50 mA, 0-25 mA feedback LVDT/RVDT or 4-20 mA	18-32 Vdc to driver	8200-224 (standard) 8200-225 (marine) 8200-226 Updated	4-20 mA, Devicenet over CAN, Position demand signal.	03254	26236	Uses a proportional input signal for use with proportional or integrating actuators. Replaces the old DRFD, in most applications. Configurable through a RS-232 SPC Service Tool
Gas Turbine Valves							
Liquid Fuel Applications							
LQ3/LQ25/ LQ25T Liquid Valves with single turn resolver	80 to 26,000 lb/hr flow w/1200 psig inlet Max	18-32 Vdc, 20 A to driver	9907-135 Analog driver with single resolver	4-20 mA	40174	LQ3=26087, LQ25=26161, LQ25T=26162	LAT (Limited Angle Torque) Motor drive signal with single Resolver excitation and feedback
LQ25 Liquid Valves with three turn resolver	100 to 26,000 lb/hr flow w/1400 psig inlet Max	18-32 Vdc, 20 A to driver	8200-314 Digital driver with dual resolver for GAP 3.0 and above and 8200-170 for use with GAP 2.08	4-20 mA, RS-485 (RT SI/O)	40179	26162=valve 26159=driver	LAT Motor drive signal with a dual Resolver excitation and feedback.  Requires a 3 speed resolver, For GAP 3.xx; typically used on DLE applications.  Can also be used in single resolver applications Uses RS-232 DIP (driver interface program) for setup
1907/TM55 Proportional	150 to 25,000 lb/hr w/2500 psig inlet Max	400 to 1000 psig external supply oil	None-Connects directly to controller	20-200 mA, Proportional See APD	40125	45002	
1907/TM55 Integrating	150 to 25,000 lb/hr w/2500 psig inlet Max	400 to 1000 psig external supply oil	Requires an integrating driver	./-200 mA Integrating, See AID	40125	45002	
1907/EM35 with single resolver	150 to 25,000 lb/hr w/2500 psig inlet Max	18-32 Vdc, 25 A to driver	9907-127 Digital driver with single resolver 9907-067 Analog driver with single resolver	4-20 mA, Proportional See APD or signal from a MicroNet PCM (position control module)	40158	40159 = valve 40161 = digital driver 40152 = analog driver	3 phase motor field director and tach for commutation signal with single resolver excitation and single feedback  hard overcurrent shutdown, Non-preferred and Not for new applications Not CE
1907/EM35 with dual resolver	150 to 25,000 lb/hr w/2500 psig inlet Max	18-32 Vdc, 25 A to driver	9907-126 Digital driver w/ dual resolver	4-20 mA, Proportional See APD or signal from a MicroNet PCM (position control module)	40158	40159 = valve 40161 = digital driver	3 phase motor field director and tach for commutation signal with dual resolver excitation and single feedback
LSOV25 Liquid Shutoff Valve 25	30,000 lb/h, 1200psig max, closes in 0.1 s	24Vdc or 125Vdc nominal, on/off 20 W nominal	None-Connects directly to controller	On/Off Command	40169	40148	
Water Injection Applications							
3151A Water Valve with EML100 Actuator	78 US gal/min max. at 350 to 1500 psig	18-32 Vdc, 20 A to driver	8200-177 EM 24V Digital driver w/ single resolver 8200-176 EM 24 V Dig. dr. w/ dual resolver	4-20 mA, RS-485 (RT SI/O)	40187	40181 = valve 26159 = driver	3 phase 24 V drive signal w/ resolver for motor commutation along with resolver excitation & single or dual position feedback. Uses RS-232 DIP (driver interface program) for setup
3151A Water Valve with TM40 Actuator Proportional	78 US gal/min max. at 350 to 1500 psig	400-1200 psig hydraulic oil, 5.2 gal/min max	None-Connects directly to controller	20-160 mA, Proportional See APD	40119	40120 = valve	RVDT not required but used for confirmation

WOODWARD ACTUATOR AND VALVE SELECTOR							
Product Type	Output	Input Power	Special Driver	Input Control Signal	Prod Spec	Man	Comments
<b>Gas Fuel Applications</b>							
Electric SonicFlo Gas Valve (ESV)	1200 Cg at 450 psig, or 2000 Cg at 300 psig with Class IV shutoff	90 to 150 Vdc, 20 A	8200-216 EM 120 V Digital Driver	4-20 mA, RS-485 (RT SI/O)	03287	26177 = valve 26159 = driver	3 phase 120 V drive signal with resolver for motor commutation with resolver excitation and single position feedback. Uses RS-232 DIP (driver interface program) for setup
Hydraulic SonicFlo Gas Valve	1200 Cg at 450 psig, or 2000 Cg at 300 psig with Class IV shutoff	1200 to 1700 psig hydraulic oil. Triple Coil from GE controller	None-Connects directly to controller	Integrating control signal form a GE controller. +/- 8 mA with +.8 mA null control signal	03285	26094	Dual Coil LVDT feedback to GE controller.
Electric Globe Valves (EGV)	1060 psig max. with Class IV shutoff and min position switch	90 to 150 Vdc, 20 A	8200-216 EM 120 V Digital Driver	4-20 mA, RS-485 (RT SI/O)	03314	26186 = valve 26159 = driver 26180 = driver for Rolls Royce	3 phase 120 V drive signal with resolver for motor commutation with resolver excitation and single position feedback. Uses RS-232 DIP (driver interface program) for setup
Hydraulic Globe Valve	550 psig max. with Class IV shutoff	750 to 900 psig hydraulic oil	Integrating control signal form a Siemens controller.	Dual Coil from controller, +/-30 mA control signal	03314	26170	Single Coil DCDT feedback to controller
Stop Ratio Valve	Fisher Type Vee-Ball Design V300 or V300 Series B HD Metal	1200 to 1700 psig hydraulic oil. Triple Coil from GE controller	Integrating control signal form a GE controller.	Integrating control signal form a GE controller. +/- 8 mA with +.8 mA null control signal		26093 = valve 26230 = valve with elec. trip.	Dual Coil LVDT feedback to GE controller
GS3	10 to 5000 lb/hr, 100 to 750 psig	18-32 Vdc, 25 A to driver	9907-135 GS3/LQ Analog Driver with single resolver	4-20 mA	45021	40146 = valve 40175 = driver	LAT Motor drive signal with single Resolver excitation and feedback. Single speed resolver only.
GS10	25 to 15,000 lb/hr, 100 to 750 psig	18-32 Vdc, 25 A to driver	9907-186 GS10 Analog Driver with single resolver feedback	4-20 mA	45021	40167	Motor drive signal with Resolver excitation and single feedback.
GS6 with single or dual position resolver GS16 with single position resolver	GS6 10 to 15,000 lb/hr, 100 to 759 psig GS16 50 to 30,000 lb/hr, 50 to 750 psig	18-32 Vdc, GS6 = 7 A to driver GS6 = 7 A to driver	No external driver needed. Internal valve actuator connects directly to controller with proportional output.	4-20 mA, Devicenet over CAN to an internal driver to control a LAT motor	GS6 = 03256 GS16 = 03284	GS6 = 26171 GS16 = 26228	Uses RS-232 for set-up Note: The RS-485 connections shown in the manual are not active.
3103/EM35 with single resolver NOT FOR NEW APPLICATIONS	50 to 40,000 lb/hr, 900 psig Max	18-32 Vdc, 25 A to driver	9907-127 EM35 Digital driver with single resolver feedback 9907-067 EM35 Analog driver with single resolver feedback	4-20 mA or signal from a MicroNet PCM (position control module)	40156	40154 = valve 40161 = digital driver 40152 = analog driver	3 phase motor field director and tach for commutation signal with single resolver excitation and single feedback hard overcurrent shutdown, Non-preferred and Not for new applications Not CE
3103/EM35 with dual resolver NOT FOR NEW APPLICATIONS	50 to 40,000 lb/hr, 900 psig Max	18-32 Vdc, 25 A to driver	9907-126 EM35 digital driver with dual resolver feedback	4-20 mA or signal from a MicroNet PCM (position control module)	40156	40154 = valve 40161 = digital driver	3 phase motor field director and tach for commutation signal with single resolver excitation and single feedback hard overcurrent shutdown, Non-preferred and Not for new applications Not CE
3103/EM35MR Gas Valve with single resolver feedback MR = motor resolver	50 to 40,000 lb/hr, 900 psig Max	18-32 Vdc, 37 A to driver	8200-177 EM 24V Digital Driver with single resolver excitation and feedback	4-20 mA, RS-485 (RT SI/O)	03209	40185 = valve 26159 = driver	3 phase 24 V drive signal with resolver for motor commutation along with resolver excitation and single position feedback Uses RS-232 DIP (driver interface program) for setup
3103/EM35MR Gas Valve with dual resolver feedback MR = motor resolver	50 to 40,000 lb/hr, 900 psig Max	18-32 Vdc, 37 A to driver	8200-176 EM 24V Digital Driver with dual resolver excitation and feedback	4-20 mA, RS-485 (RT SI/O)	03209	40185 = valve 26159 = driver	3 phase 24 V drive signal with resolver for motor commutation along with resolver excitation and dual position feedback Uses RS-232 DIP (driver interface program) for setup

## WOODWARD ACTUATOR AND VALVE SELECTOR

Product Type	Output	Input Power	Special Driver	Input Control Signal	Prod Spec	Man	Comments
3103/TM55 Proportional with single resolver	50 to 40,000 lb/hr, 900 psig Max	400 to 1000 psig external supply oil	None-Connects directly to controller	20-200 mA, Proportional See <b>APD</b>	40106	40104	
3103/TM55 Integrating with single resolver	50 to 40,000 lb/hr, 900 psig Max	400 to 1000 psig external supply oil	Requires an integrating driver	.+/-200 mA Integrating, See <b>AID</b>	40106	40103	
3171/EM35MR Gas Valve with single or dual resolver feedback	25 to 20,000 lb/hr, 500 psig Max. self cleaning metering port	18-32 Vdc, 37 A to driver	EM 24V Digital Driver with single (8200-177) or dual (8200-176) resolver excitation and feedback	4-20 mA, RS-485 (RT SI/O)		26118 = valve 26159 = driver	
3171/EM35 Gas Valve with single resolver <b>NOT FOR NEW APPLICATIONS</b>	25 to 20,000 lb/hr, 500 psig Max. self cleaning metering port	18-32 Vdc, 25 A to driver	9907-127 Digital driver with single resolver 9907-067 Analog driver with single resolver	4-20 mA, Proportional See <b>APD</b> or signal from a MicroNet PCM (position control module)	40158	40153 = valve 40161 = digital driver 40152 = analog driver	3 phase motor field director and tach for commutation signal with single resolver excitation and single feedback hard overcurrent shutdown, Non-preferred and Not for new applications Not CE
3171/TM-55 (Integrating) Gas Valve	25 to 20,000 lb/hr, 500 psig Max. self cleaning metering port	400 to 1000 psig external supply oil	Requires an integrating driver	.+/-200 mA Integrating, See <b>AID</b>		40115	
Swift Valves	50 to 695 lb/hr, 85 to 300 psia	18-32 Vdc, 48 W to driver	Swift Valve Driver which provides stepping motor drive signal	4-20 mA, Devicenet over CAN, and PWM 500-2kHz	03252	26202	Configured on the test stand to work with a particular valve, i.e. single or dual valves and user interface.
Gas Shutoff Valve GSOV25 (-20 to +150 C) and GSOV25HT (-20 to +177 C)	Up to 40,000 lb/hr, 900 psig, with Class VI shutoff	Internal gas pressure	None-Connects directly to controller	24 or 125 Vdc (On/Off) 10 W nominal	40176 = GSOC25 03286 = GSOV25 HT	40172 = GSOC25 26190 = GSOV25 HT	



PO Box 1519, Fort Collins CO, USA 80522-1519  
Ph: +1 (970) 482-5811

1000 East Drake Road, Fort Collins CO 80525  
Fax: +1 (970) 498-3058

[www.woodward.com](http://www.woodward.com)

This document is distributed for informational purposes only. It is not to be construed as creating or becoming part of any Woodward contractual or warranty obligation unless expressly stated in a written sales contract.

© Woodward 2005, All Rights Reserved