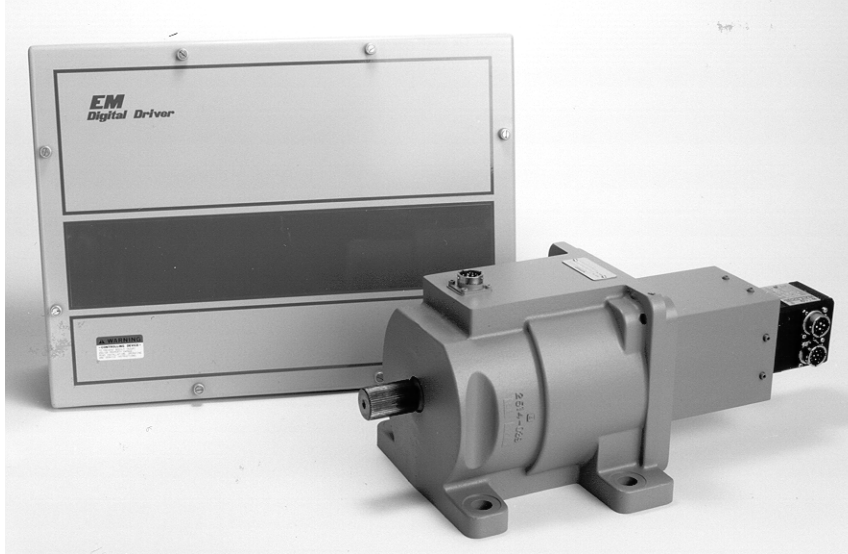


# EM-70 and EM-140

## Rotary Output Electric Actuators and EM Digital Driver



### Applications

The EM-70 and EM-140 Actuators, when driven by the EM driver, are designed to position engine fuel injection control linkage, flow control valves, and gas turbine variable geometry systems.

### Features

The EM-70 and EM-140 Actuators consist of a high-performance, rugged brushless servomotor and a precision planetary gearbox with case-hardened gears. High factors of safety are used throughout the design.

The EM Driver is a digital control using model-based control algorithms for robust control over a wide range of actuator load inertias, friction levels, and external return spring preloads. PC/Windows® based software facilitates setup. Several communication protocols are available for monitoring and control.

For performance and installation information, see Woodward manual number 26159.

### Specifications

Output type	rotary
Rated Stroke	10° to 320° rated (no mechanical stops)
System Input Voltage	90 to 150 Vdc input to the digital EM driver

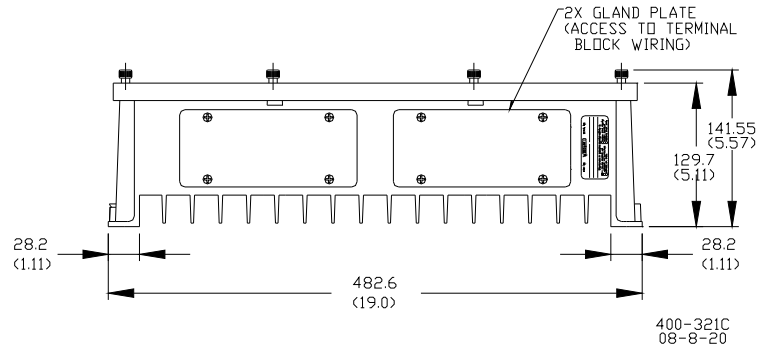
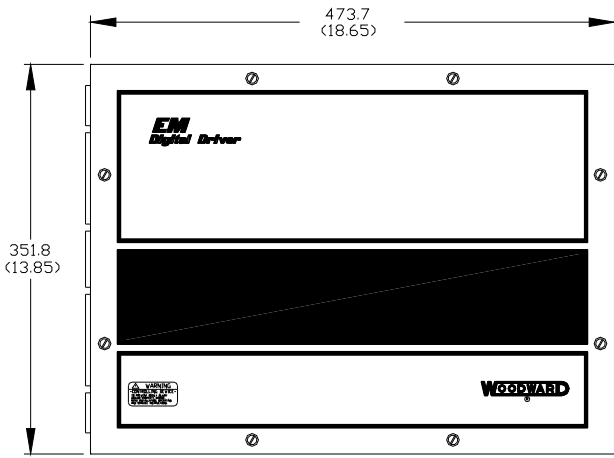
#### EM-70 Performance Summary

Torque Output	84 N·m (62 lb-ft) max continuous 130 N·m (96 lb-ft) for 2.0 second transient
Slew Time	0.112 seconds max for 42° travel at 84 N·m, above 10 °C 0.210 seconds max for 42° travel at 84 N·m, below 10 °C

#### EM-140 Performance Summary

Torque Output	168 N·m (124 lb-ft) max continuous 260 N·m (192 lb-ft) for 2.0 second transient
Slew Time	0.225 seconds max for 42° travel at 168 N·m, above 10 °C 0.250 seconds max for 42° travel at 168 N·m, below 10 °C

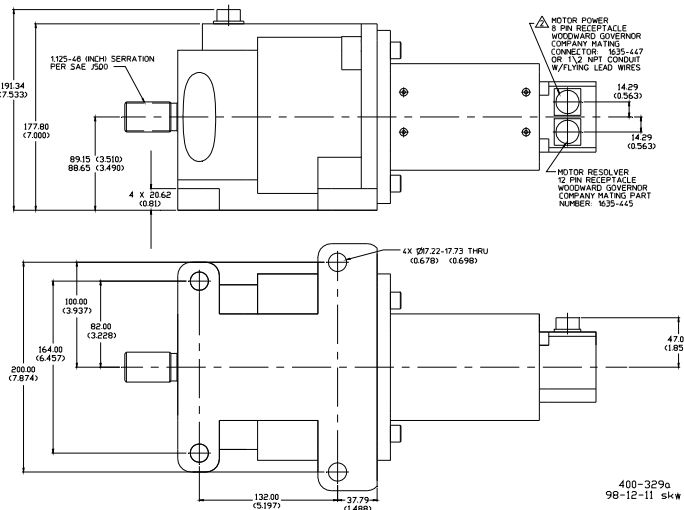
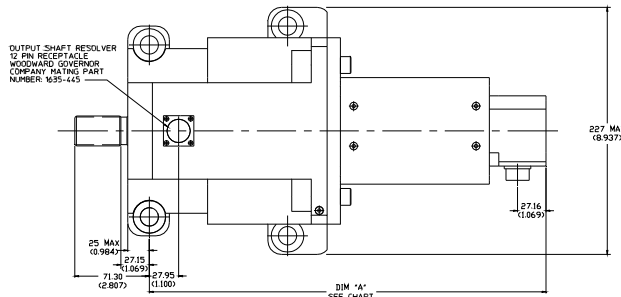
- 6 Hz bandwidth
- Fast slew times
- Position accuracy within 19 arc minutes
- Fault monitoring
- RS-232, RS-485, CAN Bus, 4–20 mA input and readback
- Model-based control
- IP56
- Actuator Listings: CE Marking; CSA version available
- Driver Listings: CE Marking, UL, cUL, and DEMKO
- Actuator tested to 25 G; vibration to 2000 Hz
- Actuator models for –30 to +100 °C or 0 to +125 °C
- Driver –20 to +68 °C
- Precision gearbox, high stiffness, low backlash
- High back drive efficiency for spring return
- Lock-in-last position option
- Brushless servomotor and resolvers



**EM-70/140 Driver**

NOTE:  
SEE 9971-502 FOR PLANT WIRING.

PART NUMBER	DIM 'A'	MOTOR POWER
8256-200	278.64 (14.92)	CIRCULAR RECEPTACLE
8256-201	425 (16.63)	
8256-202	425 (16.63)	
8256-203	425 (16.63)	CONDUIT W/FLYING LEADS
9908-689	398.4 (15.67)	
9908-690	398.4 (15.67)	
9908-703	299.1 (11.77)	
9908-704	299.1 (11.77)	
9908-766	398.4 (15.67)	
9908-767	398.4 (15.67)	



**EM-70/140 Outline Drawing**  
(Do not use for construction)



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