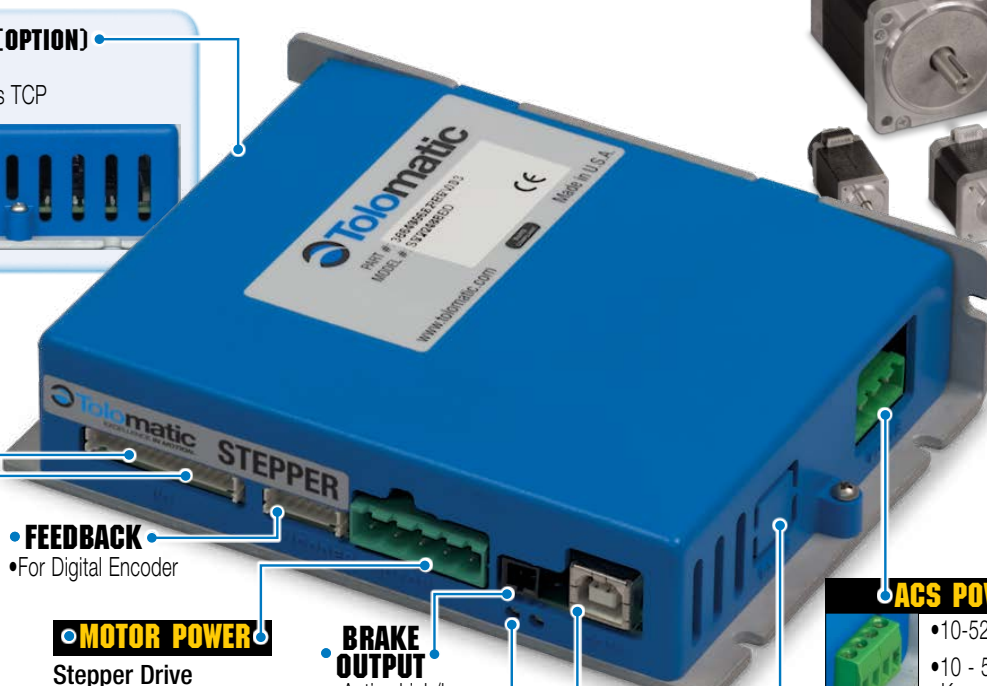


# ACS STEPPER DRIVE / CONTROLLER & STEPPER MOTORS

The ACS is an extremely easy-to-use stepper drive/controller and motor developed specifically to be used with electric actuators. Mounted, configured and tested as a complete motion system when ordered with any Tolomatic electric actuator. The ACS can be controlled with simple digital I/O, analog input or robust industrial ethernet.

# ACS



**ETHERNET (OPTION)**

**Protocols:**

- EtherNet/IP
- Modbus TCP

**DIGITAL I/O**

- 8 Digital Inputs
- 4 Digital Outputs
- 24 VDC Opto-Isolated
- Sourcing or Sinking
- Configurable Inputs

**ANALOG I/O**

- 0-10 VDC or 4-20mA
- 1 Analog Input
- 1 Analog Output (optional)

**FEEDBACK**

- For Digital Encoder

**MOTOR POWER**

Stepper Drive

- 10-52 VDC Stepper Motors

**BRAKE OUTPUT**

- Active high/low

**LED INDICATORS**

- Motor Power & Fault indicators

**COM PORT**

- USB Com Port

**ACS POWER**

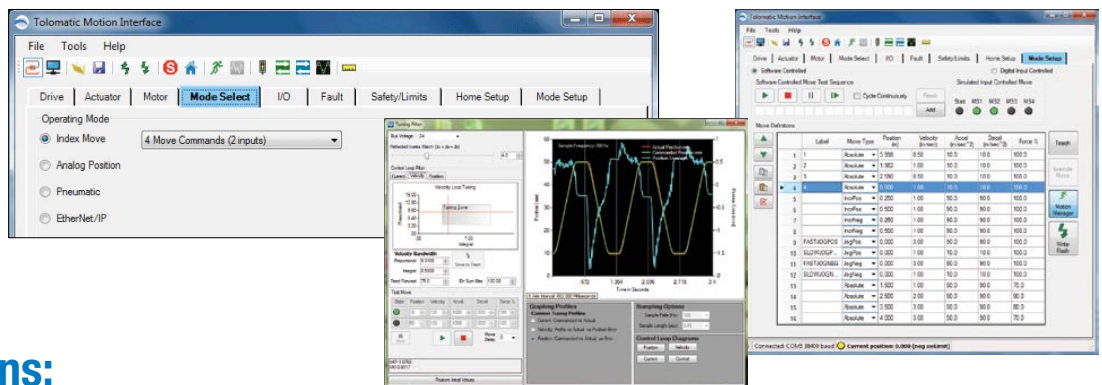
- 10-52 VDC
- 10 - 52 VDC Keep-alive Power
- 24 VDC Brake Power

**RS485 COM PORT**

- Modbus RTU (Base Model)

## Easy to Use Operating Modes & Configuration Software

- **OPERATING MODES**
- Index position via digital I/O
- Pneumatic Logic
- Analog Position
- Ethernet
  - EtherNet/IP
  - Modbus TCP
- Supports rotary actuator: position and velocity moves



The software interface includes a 'Mode Select' tab with options for Index Move, Analog Position, Pneumatic, and EtherNet/IP. It also features a 'Motion Definitions' table with columns for Label, Move Type, Position, Velocity, Acceleration, Deceleration, and Rate %.

Label	Move Type	Position	Velocity	Acceleration	Deceleration	Rate %
1	Rotate	10.000	10.000	10.000	10.000	100.0
2	Rotate	11.900	10.000	10.000	10.000	100.0
3	Rotate	12.780	10.000	10.000	10.000	100.0
4	Rotate	13.000	10.000	10.000	10.000	100.0
5	Rotate	13.000	11.000	10.000	10.000	100.0
6	Rotate	13.000	11.000	10.000	10.000	100.0
7	Rotate	13.000	11.000	10.000	10.000	100.0
8	Rotate	13.000	11.000	10.000	10.000	100.0
9	FASTSTOP	13.000	11.000	10.000	10.000	100.0
10	FASTSTOP	13.000	11.000	10.000	10.000	100.0
11	FASTSTOP	13.000	11.000	10.000	10.000	100.0
12	SLDRWDRG	13.000	11.000	10.000	10.000	100.0
13	Rotate	13.000	11.000	10.000	10.000	75.0
14	Rotate	13.000	11.000	10.000	10.000	75.0
15	Rotate	13.000	11.000	10.000	10.000	75.0
16	Rotate	13.000	11.000	10.000	10.000	75.0

## Available Options:

- Cables**  
3m, 5m or 10m lengths
- Planetary Gearboxes**  
Available ratios - 3:1, 5:1, 10:1
- Power Supply**  
48VDC; 5 Amp or 10 Amp

# ACS STEPPER DRIVE / CONTROLLER & STEPPER MOTORS

# ACS

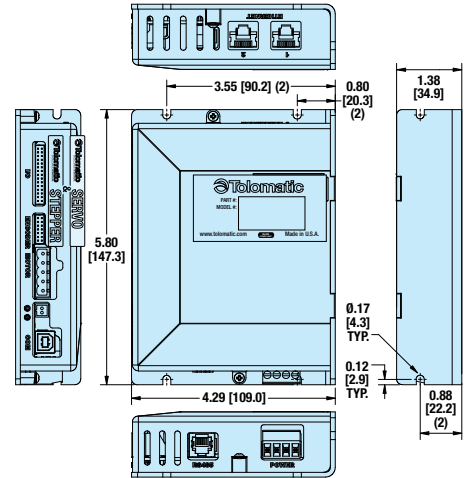
## Drive Specifications

DRIVE POWER	
Current - Max	10 Amps
Voltage Nominal	10 - 52V
Over Voltage	55V
Under Voltage	9V
Absolute Maximum Voltage	60V
Logic Current Draw (24V)	200 mA

OPERATING CONDITIONS	
Ambient Temperature	25°C Nominal
Operating Temperature	0 - 40°C
Storage Temperature	0-70°C
Humidity	0 - 90% non-condensing
Weight	0.27 kg

See ACS Hardware and Installation Guide (Stepper #3604-4183) for more details.

## Dimensions



## Motor Specifications

		NEMA 11	NEMA 17	NEMA 23		NEMA 34	
		AMS1A1	AMS1B1	AMS1C1	AMS1C2	AMS1D1	AMS1D2
<b>Resistance</b>	Ohms	3.5	2.4	1.5	0.39	0.138	0.188
<b>Inductance</b>	mH	2.3	4.5	3.7	1.53	1.13	2
<b>Rated Current</b>	Amps-Peak/ Phase	1	1.5	2	5	10	10
<b>Max. Torque</b>	N-m	0.21	0.59	0.85	1.51	2.75	6.0
<b>Maximum RPM</b>		1800	2000	1200	2000	2000	1850
<b>Degree per Step</b>		1.8°	1.8°	1.8°	1.8°	1.8°	1.8°
<b>Rotor Inertia</b>	kg-mm <sup>2</sup>	1.76	8.19	21.95	38.92	94.82	159.78
<b>Motor Weight</b>	kg	0.20	0.36	0.55	1.00	1.60	2.70
<b>Motor Type</b>		Bipolar Stepper, 1.8° per Step					
<b>Encoder</b>		Differential; 500 line/rev (2000 count post quad)/rev					



See ACS brochure (#3600-4185) for dimensions and more details.



3D CAD available at [www.tolomatic.com](http://www.tolomatic.com)  
Always use configured CAD solid model to determine critical dimensions



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