STR Series

- Sophisticated Current Control;
  - STR2: 2A/phase
  - STR4: 4A/phase
  - STR8: 8A/phase
- Anti-Resonance for Optimized Torque and Smoothness Over a Wide Speed Range
- Microstep Emulation for Creating Smooth Motion Even with Low-Resolution Step Signals
- Up to 20,000 Steps/Revolution
- Step and Direction or CW/CCW Pulse Operation
- Built-In Noise Filter on STEP and DIR Inputs
- Large Family of Compatible 2-Phase Stepper Motors

The STR series stepper drive is a compact, powerful, digital step and direction drive available in three power ranges: 2 A/phase, 4 A/phase and 8 A/phase. The STR series is ideal for applications requiring basic step and direction control of a 2-phase step motor.

All setup is done via dip switches and a rotary switch on the side of the drive, including motor selection, running current, idle current, and step resolution.

STR drives are available with a large family of compatible 2-phase step motors, selected to optimize performance of both the drive and motor.
RECOMMENDED MOTORS

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>RECOMMENDED MOTORS FOR STR2</td>
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</tr>
<tr>
<td>OMHT11-013</td>
<td>NEMA 11 stepper motor, 15 oz-in holding torque, 1.0 A/phase</td>
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<tr>
<td>OM5014-842</td>
<td>NEMA 14 stepper motor, 26 oz-in holding torque, 1.0 A/phase</td>
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<tr>
<td>OMHT17-075</td>
<td>NEMA 17 stepper motor, 62.8 oz-in holding torque, 1.7 A/phase, parallel connection</td>
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<tr>
<td>OMHT17-275</td>
<td>NEMA 17 stepper motor, 62.8 oz-in holding torque, 1.7 A/phase, parallel connection</td>
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<tr>
<td>RECOMMENDED MOTORS FOR STR4/STR8</td>
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<tr>
<td>OMHT17-075</td>
<td>NEMA 17 stepper motor, 62.8 oz-in holding torque, 1.7 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT17-275</td>
<td>NEMA 17 stepper motor, 62.8 oz-in holding torque, 1.7 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT24-100</td>
<td>NEMA 24 stepper motor, 123 oz-in holding torque, 2.8 A/phase</td>
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<tr>
<td>OMHT24-105</td>
<td>NEMA 24 stepper motor, 177 oz-in holding torque, 4.0 A/phase</td>
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<tr>
<td>OMHT24-108</td>
<td>NEMA 24 stepper motor, 354 oz-in holding torque, 4.0 A/phase</td>
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<tr>
<td>OMHT34-485</td>
<td>NEMA 34 stepper motor, 650 oz-in holding torque, 4.3 A/phase, series connection</td>
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<tr>
<td>OMHT34-486</td>
<td>NEMA 34 stepper motor, 1200 oz-in holding torque, 4.1 A/phase, series connection</td>
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<tr>
<td>OMHT34-504</td>
<td>NEMA 34 stepper motor, 396 oz-in holding torque, 3.18 A/phase, series connection</td>
</tr>
<tr>
<td>OMHT34-505</td>
<td>NEMA 34 stepper motor, 849 oz-in holding torque, 3.18 A/phase, series connection</td>
</tr>
<tr>
<td>RECOMMENDED MOTORS FOR STR8</td>
<td></td>
</tr>
<tr>
<td>OMHT34-485</td>
<td>NEMA 34 stepper motor, 650 oz-in holding torque, 8.6 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT34-486</td>
<td>NEMA 34 stepper motor, 1200 oz-in holding torque, 8.1 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT34-487</td>
<td>NEMA 34 stepper motor, 1845 oz-in holding torque, 9.01 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT34-504</td>
<td>NEMA 34 stepper motor, 396 oz-in holding torque, 6.3 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT34-505</td>
<td>NEMA 34 stepper motor, 849 oz-in holding torque, 6.3 A/phase, parallel connection</td>
</tr>
<tr>
<td>OMHT34-506</td>
<td>NEMA 34 stepper motor, 1260 oz-in holding torque, 5.6 A/phase, parallel connection</td>
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</tbody>
</table>

Note: Ratings are with motor connected in parallel.

OMHT Series, visit omega.com/omht_series for details. All models shown smaller than actual size.
TORQUE-SPEED CURVES

HT17 with STR4
Connection: Parallel
24v Power Supply, 20,000 steps/rev

HT17 with STR4
Connection: Parallel
48v Power Supply, 20,000 steps/rev

HT24 with STR8
Connection: Parallel
24v Power Supply, 20,000 steps/rev

HT24 with STR8
Connection: Parallel
48v Power Supply, 20,000 steps/rev

HT34 with STR4
Connection: Parallel
Power Supply 48V, 20,000 steps/rev

HT34 with STR8
Connection: Parallel
Power Supply 48V, 20,000 steps/rev

HT34 with STR4
Connection: Series
Power Supply 48V, 20,000 steps/rev

HT34 with STR8
Connection: Parallel
Power Supply 60V, 20,000 steps/rev
OMRC-050 Regen Clamp—For Stepper Drive Power Supply Protection
- Voltage Range 24 to 80 Vdc
- 50 W Power Dissipation
- Regen Present LED
- Power LED
- 76 x 102 x 6.4 mm (3 x 4 x 2.5")

**SPECIFICATIONS**
- Input Power Cont: 50 W
- Input Power Peak: 800 W
- Voltage Range: 24 to 80 Vdc

**Recommended Power Supplies (Order Separately)**
- OMPS150A24: 24 Vdc at 6.3 A
- OMPS300A48: 48 Vdc at 6.7 A

**SPECIFICATIONS**
**POWER AMPLIFIER SECTION (STR4)**
- Amplifier Type: Mosfet, dual H-bridge, 4 quadrant
- Current Control: 4 state Pwm at 20 KHz
- Output Current: Up to 4.5 a/phase, depending on motor selection
- Switch Selectable % of Maximum Current: 100%, 90%, 80%, 70%
- Power Supply: External 24 to 48 Vdc power supply required
- Idle Current Reduction: Reduction to 50% or 90%, switch selectable

**POWER AMPLIFIER SECTION (STR8)**
- Amplifier Type: Mosfet, dual H-bridge, 4 quadrant
- Current Control: 4 state Pwm at 20 KHz
- Output Current: Up to 8 a/phase, depending on motor selection
- Switch Selectable % of Maximum Current: 100%, 90%, 80%, 70%

**Power Supply:** External 24 to 75 Vdc power supply required
**Idle Current Reduction:** Reduction to 50% or 90%, switch selectable

**CONROLLER SECTION**
- Mode Of Operation: Step and direction, Cw/Ccw
- Microstep Resolution: Switch selectable: 200, 200 smooth, 400, 400 smooth, 2000, 5000, 12800, 20000 steps/revolution
- Speed Range: Depends upon selected resolution amplifier is suitable for speeds up to 50 Rps
- Anti Resonance: Raises the system damping ratio eliminates midrange instability and allows stable operation to 50 Rps

**Wavelength:** Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range 0.25 to 1.5 Rps

**Digital Noise Filter:** Step pulse input: 150 KHz or 2 Mhz, jumper selectable
**Self Test Switch Selectable:** Rotates motor 2 revolutions in each direction

**Contoller Inputs:**
- Step, direction, enable, optically isolated; 4 to 30 Vdc, 5 to 15 ma.
- Step Input: Min pulse width = 250 Ns, max pulse frequency = 2 Mhz
- Fault Output: Photodarlington, 80 Ma, 30 Vdc max; voltage drop = 1.2 Vdc max at 80 Ma

**Ambient Temperature:** 0 to 50°C (32 to 122°F), humidity 90% non-condensing

**Recommended When Using:**
- NEMA 17 motors @ speeds > 30 rps
- NEMA 23 motors @ speeds > 10 rps
- NEMA 34 motors @ speeds > 4 rps

**Ordering Example:** STR4, step and direction stepper drive with 4.5 A output and OMPS150A24, 24 Vdc/6.3 A power supply.