

Sensor-Actuator-Interface (SAI) Cable for Robotic Applications



Weidmuller's high flex robotic cables are designed to meet a minimum of 5 million cycles without failure. In addition to rolling tests over a distance of 5 meters at a speed of 3.3 m/s and acceleration of 5 m/s², the Sensor-Actuator-Interface (SAI) high flex robotic cables are also subjected to a special torsion test that simulates the 360° torsion twisting motion of most demanding robotic applications. These cables also feature a special PUR jacket that provides protection against melting from weld slag, making them an optimal choice for robotic welding applications.

All of the new SAI High Flex cables are available in 3-, 4- and 5-pole versions as plug-and-play assemblies with M12 male or female connectors, for reduced installation and maintenance time. Weidmuller SAI High Flex cables are UL and CSA approved. They feature a neutral black jacket that is oil, grease and lubricant resistant, allowing them to be installed directly on the machine.

- Rated for over 5 million cycles
- Weld slag resistant
- 3-, 4- and 5-pole versions
- UL and CSA approved

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Weidmüller 

PUR Cable 3 x 0.34 mm² and 4 x 0.34 mm²

Technical data

| | |
|-------------------------|---|
| Primary insulation | Polyester |
| Outer jacket | PUR |
| Jacket color | black |
| Resistance | Excellent oil resistance |
| | Good resistance against acids, leach and solvents |
| | Weld slag resistant |
| | Very good abrasion resistance |
| | Flame resistant and self-extinguishing |
| Other Jacket properties | Recyclable |
| | Free of Cadmium and Silicone |
| | Free of paint wetting impairment substances |
| Bending radius | approx. 7.5 x cable OD for flexible application |
| Rated data | |
| Temperature rating | Static: -40 °C to + 90 °C |
| | Flexible: -30 °C to + 90 °C |
| Speed | max. 3.3 m/s at 5 m horizontal path length |
| Acceleration | max. 5 m/s ² |
| Cycles | min. 5 Million |
| Torsion | +/- 360 °/m |
| Approvals | |
| Standards | UL/CSA approval, CE Conform |
| Dimensions | |
| Cross section | 0.34 mm ² |
| Stranding | 42 x 0.10 mm |
| Jacket OD | 3- and 4-pole: 4.9 ± 0.2 mm |
| | 5-pole: 5.1 ± 0.2 mm |
| Note | |

Ordering data - Single End Cables

| Description | Type | Length | Part No. |
|----------------------------------|-------------------|-----------|------------|
| M12 straight Female 3-pole | SAIL-M12BG-3-1.5T | 1.5 Meter | 1968590150 |
| | SAIL-M12BG-3-3.0T | 3.0 Meter | 1968590300 |
| | SAIL-M12BG-3-5.0T | 5.0 Meter | 1968590500 |
| M12 straight Female 4-pole | SAIL-M12BG-3-10T | 10 Meter | 1968591000 |
| | SAIL-M12BG-4-1.5T | 1.5 Meter | 1968580150 |
| | SAIL-M12BG-4-3.0T | 3.0 Meter | 1968580300 |
| | SAIL-M12BG-4-5.0T | 5.0 Meter | 1968580500 |
| M12 straight Female 5-pole | SAIL-M12BG-4-10T | 10 Meter | 1968581000 |
| | SAIL-M12BG-5-1.5T | 1.5 Meter | 1021670150 |
| | SAIL-M12BG-5-3.0T | 3.0 Meter | 1021670300 |
| M12 right angle Female 3-pole | SAIL-M12BG-5-5.0T | 5.0 Meter | 1021670500 |
| | SAIL-M12BG-5-10T | 10 Meter | 1021671000 |
| | SAIL-M12BW-3-1.5T | 1.5 Meter | 1968560150 |
| M12 right angle Female 4-pole | SAIL-M12BW-3-3.0T | 3.0 Meter | 1968560300 |
| | SAIL-M12BW-3-5.0T | 5.0 Meter | 1968560500 |
| | SAIL-M12BW-3-10T | 10 Meter | 1968561000 |
| M12 right angle Female 5-pole | SAIL-M12BW-4-1.5T | 1.5 Meter | 1968570150 |
| | SAIL-M12BW-4-3.0T | 3.0 Meter | 1968570300 |
| | SAIL-M12BW-4-5.0T | 5.0 Meter | 1968570500 |
| M12 right angle Female 5-pole | SAIL-M12BW-4-10T | 10 Meter | 1968571000 |
| | SAIL-M12BW-5-1.5T | 1.5 Meter | 1021690150 |
| | SAIL-M12BW-5-3.0T | 3.0 Meter | 1021690300 |
| | SAIL-M12BW-5-5.0T | 5.0 Meter | 1021690500 |
| | SAIL-M12BW-5-10T | 10 Meter | 1021691000 |

Ordering data - Double End Extension Cord Sets

| Description | Type | Length | Part No. |
|---|----------------------|-----------|------------|
| M12 straight Male to M12 straight Female 3-pole | SAIL-M12GM12G-3-1.5T | 1.5 Meter | 1021710150 |
| | SAIL-M12GM12G-3-3.0T | 3.0 Meter | 1021710300 |
| | SAIL-M12GM12G-3-5.0T | 5.0 Meter | 1021710500 |
| | SAIL-M12GM12G-3-10T | 10 Meter | 1021711000 |
| M12 straight Male to M12 straight Female 4-pole | SAIL-M12GM12G-4-1.5T | 1.5 Meter | 1021730150 |
| | SAIL-M12GM12G-4-3.0T | 3.0 Meter | 1021730300 |
| | SAIL-M12GM12G-4-5.0T | 5.0 Meter | 1021730500 |
| | SAIL-M12GM12G-4-10T | 10 Meter | 1021731000 |
| M12 straight Male to M12 straight Female 5-pole | SAIL-M12GM12G-5-1.5T | 1.5 Meter | 1011970150 |
| | SAIL-M12GM12G-5-3.0T | 3.0 Meter | 1011970300 |
| | SAIL-M12GM12G-5-5.0T | 5.0 Meter | 1011970500 |
| | SAIL-M12GM12G-5-10T | 10 Meter | 1011971000 |
| M12 straight Male to M12 right angle Female 3-pole | SAIL-M12GM12W-3-1.5T | 1.5 Meter | 1021720150 |
| | SAIL-M12GM12W-3-3.0T | 3.0 Meter | 1021720300 |
| | SAIL-M12GM12W-3-5.0T | 5.0 Meter | 1021720500 |
| | SAIL-M12GM12W-3-10T | 10 Meter | 1021721000 |
| M12 straight Male to M12 right angle Female 4-pole | SAIL-M12GM12W-4-1.5T | 1.5 Meter | 1021740150 |
| | SAIL-M12GM12W-4-3.0T | 3.0 Meter | 1021740300 |
| | SAIL-M12GM12W-4-5.0T | 5.0 Meter | 1021740500 |
| | SAIL-M12GM12W-4-10T | 10 Meter | 1021741000 |
| M12 straight Male to M12 right angle Female 5-pole | SAIL-M12GM12W-5-1.5T | 1.5 Meter | 1011990150 |
| | SAIL-M12GM12W-5-3.0T | 3.0 Meter | 1011990300 |
| | SAIL-M12GM12W-5-5.0T | 5.0 Meter | 1011990500 |
| | SAIL-M12GM12W-5-10T | 10 Meter | 1011991000 |

Please reference the Business to Business (B2B) Center for information about additional configurations such as male connectors, LED versions, extension cord sets and different lengths.