



Smart encoders & actuators

AQ5x Series Programmable Incremental Encoders

Features

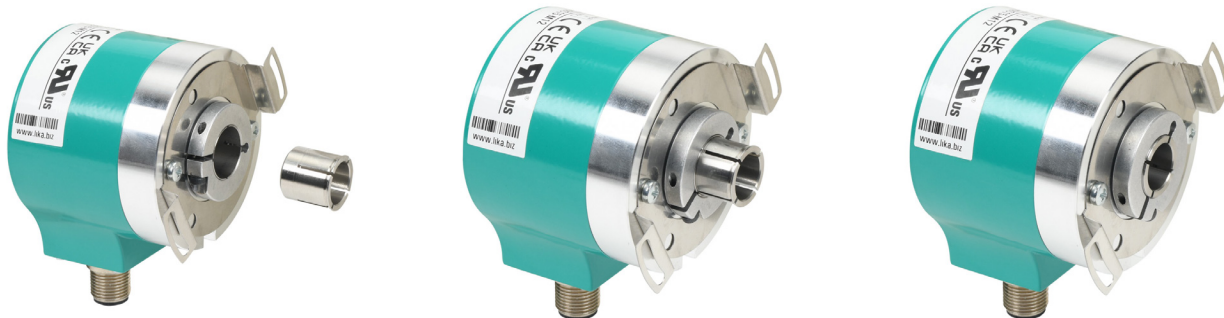
- Programmable incremental encoder
- Configurable resolution from 1 to 16,384 PPR (1024 default)
- Selectable index length of 90 or 180°
- Counting direction programmable CW or CCW
- Universal output circuit: 5–30 VDC Push-Pull (Totem Pole), or NPN/PNP open collector (HTL), or Line Driver (TTL)
- Quadrature output signals with index (ABZ, /ABZ)
- Programmable via USB cable and LIKA-IP-IQ software (free download at AutomationDirect on the AQ58S and AQ59H store pages)
- IP65 environmental rating



| AQ5x Series Medium Duty Incremental (Quadrature) Encoders | | | | | | | | |
|---|----------|-----------------------|---------------------|-------------------|---------------|---------------|----------|--|
| Part Number | Price | Pulses per Revolution | Dimensional Drawing | Shaft Type | Body Diameter | Input Voltage | Cable | Output |
| AQ58S-PRG-HZCP9-M12 | \$145.00 | Up to 16,384 (14-bit) | PDF | 3/8" solid | 58mm | 5-30 VDC | M12 male | Universal circuit: Push-Pull (Totem Pole), or NPN/PNP open collector (HTL), or Line Driver (TTL) |
| AQ59H-PRG-HZC15-M12 | \$145.00 | | PDF | 6 to 15 mm hollow | 59mm | | | |

Configurable Hollow Shaft Sizing

The AQ59H encoder features a hollow shaft that can be resized using removable bushings. The images below show the installation of a [BR1-12](#) bushing. See the "Accessories - AQ5x Series" on page tECD-9 for all available options.



How to Configure your Encoder

Use one of the following cable(s) to configure the encoder:

- [KIT-IP/IQ58-USB-M12](#) programming cable
- Combination of [KIT-IP/IQ58](#) and [EC-IP/IQ58-M12](#)
- Combination of [KIT-IP/IQ58](#) and [EC-M12F12-LKT12-05](#) or [EC-M12F12-LKT12-10](#)
- Download the software from the [AQ58S-PRG-HZCP9-M12](#) or [AQ59H-PRG-HZC15-M12](#) store page



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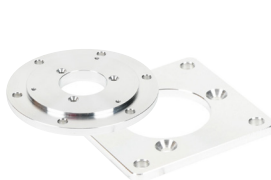
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Accessories - AQ5x Series

| Accessories for AQ5x Series Encoders | | |
|--|----------|--|
| Part Number | Price | Description |
| <u>BR1-6</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 6mm, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-6.35</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 1/4in, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-8</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 8mm, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-9.52</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 3/8in, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-10</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 10mm, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-11</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 11mm, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-12</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 12mm, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>BR1-12.7</u> | \$7.00 | Lika Electronic reducer bushing, 15mm to 1/2in, metal. For use with Lika Electronic AQ59 series encoders. |
| <u>PF4256</u> | \$35.00 | Lika Electronic round mounting flange, 61mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF0408</u> | \$129.00 | Lika Electronic spring-loaded encoder mount, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF4257</u> | \$19.00 | Lika Electronic right angle bracket, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF4259</u> | \$22.00 | Lika Electronic square mounting flange, 92mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF4274</u> | \$99.00 | Lika Electronic round mounting flange, 70mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF4258</u> | \$19.00 | Lika Electronic round mounting flange, 75mm and 100mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>PF5000-A</u> | \$16.00 | Lika Electronic square mounting flange, 70mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included. |
| <u>LKM-386</u> | \$9.00 | Lika Electronic servo mount clamp, metal. For use with Lika Electronic AQ58 and A41 series encoders. Mounting hardware included. |
| <u>KIT-XX59</u> | \$9.00 | Lika Electronic servo mount clamp, metal. For use with Lika Electronic AQ58 and AQ59 series encoders. Mounting hardware included. |
| <u>KIT-IP/IQ58</u> | \$139.00 | Lika Electronic programming cable, USB A to 4-position terminal block, 0.9ft/0.3m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. Requires Lika Electronic EC-IP/IQ58-M12 programming or EC-M12F12-LKT12-xx encoder cable. |
| <u>EC-IP/IQ58-M12</u> | \$29.00 | Lika Electronic programming cable, M12 axial female to pigtail, 0.9ft/0.3m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. Requires Lika Electronic KIT-IP/IQ58 programming cable. |
| <u>KIT-IP/IQ58-USB-M12</u> | \$99.00 | Lika Electronic programming cable, USB A to M12 axial female, 0.9ft/0.3m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. |
| <u>EC-M12F12-LKT12-05</u> | \$55.00 | Lika Electronic encoder cable, M12 axial female to pigtail, shielded, 16.4ft/5m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. |
| <u>EC-M12F12-LKT12-10</u> | \$75.00 | Lika Electronic encoder cable, M12 axial female to pigtail, shielded, 32.8ft/10m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. |



Bore Reducers



Mounting Flanges



PF0408



LKM-386



PF4257



KIT-IP/IQ58



EC-IP/IQ58-M12



KIT-IP/IQ58-USB-M12



EC-M12F12-LKT12-05



KIT-XX59



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Specifications - AQ5x Series

| Electrical Specifications | |
|--------------------------------------|--|
| Resolution (PPR) | Programmable from 1 to 16,384 (default 1024 PPR) |
| Accuracy | ± 0.15° |
| Output Signals | Quadrature output signals with index (ABZ, /ABZ) |
| Counting Frequency | 500kHz maximum |
| Output Circuits | Universal circuit: Push-Pull (Totem Pole), or NPN/PNP open collector (HTL), or Line Driver (TTL) |
| Power Supply | +5VDC to +30VDC |
| Consumption | 60mA (typical) |
| Output Current (each channel) | 40mA maximum |
| Protection | Against inversion of polarity and short circuit |
| EMC | Electro-magnetic immunity according to EN61000-4-2 and EN61000-4-4 |
| Mechanical Specifications | |
| Shaft Diameter | Ø 9.52 mm (3/8") |
| Hollow Shaft Diameter | Ø 15mm (available bore reducer sleeves for 6mm, 1/4", 8mm, 3/8", 10mm, 11mm, 12mm, 1/2") |
| Shaft Loading (axial, radial) | 100N maximum |
| Shaft Rotational Speed | Typical 6000 rpm, temporary 12000 rpm maximum |
| Starting Torque (@20°C) | AQ58: 0.15 Ncm AQ59: 0.4 Ncm |
| Bearings Life | 400 x 10 ⁶ rev. min (10 ⁹ rev. min. with shaft loading limited to 20N) |
| Electrical Connections | M12 |
| Weight | 200g (7 oz) |
| Materials | |
| Flange | Anticorodal, UNI EN AW-6082 |
| Housing | Anticorodal, UNI EN AW-6082 |
| Bearings | ABEC 5 |
| Shaft | Stainless steel, non-magnetic, UNI EN 4305 |
| Environmental Specifications | |
| Shock | 100g, 6ms acc. |
| Vibrations | 10g, 5-2000 Hz acc. |
| Protection | IP65 |
| Operating Temperature Range | -40°C to 85°C (-40°F to 185°F) |
| Storage Temperature Range | -40°C to 100°C (-40°F to 212°F) (98% relative humidity without condensation) |
| Approvals | CE, UKCA, _c UR _{us} , RoHS |