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Smart encoders & actuators

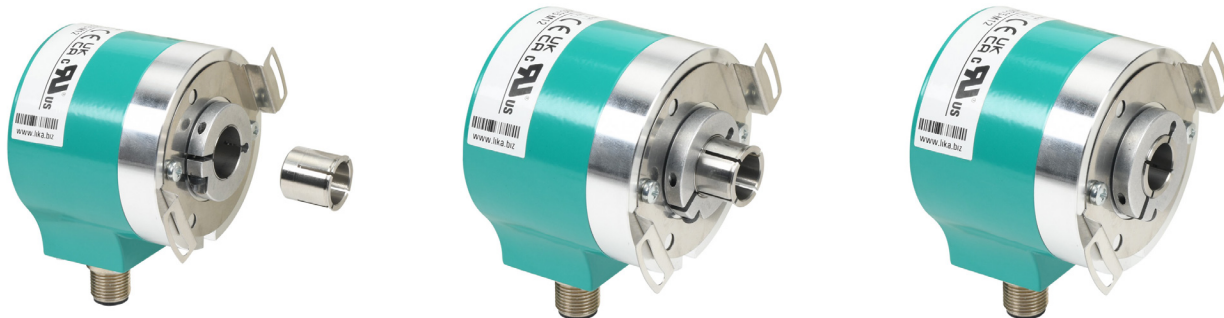# AQ5x Series Programmable Incremental Encoders

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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AQ5x Series Programmable Incremental Encoders

Accessories - AQ5x Series

Part Number	Price	Description
Accessories for AQ5x Series Encoders		
BR1-6	$7.00	Lika Electronic reducer bushing, 15mm to 6mm, metal. For use with Lika Electronic AQ59 series encoders.
BR1-6.35	$7.00	Lika Electronic reducer bushing, 15mm to 1/4in, metal. For use with Lika Electronic AQ59 series encoders.
BR1-8	$7.00	Lika Electronic reducer bushing, 15mm to 8mm, metal. For use with Lika Electronic AQ59 series encoders.
BR1-9.52	$7.00	Lika Electronic reducer bushing, 15mm to 3/8in, metal. For use with Lika Electronic AQ59 series encoders.
BR1-10	$7.00	Lika Electronic reducer bushing, 15mm to 10mm, metal. For use with Lika Electronic AQ59 series encoders.
BR1-11	$7.00	Lika Electronic reducer bushing, 15mm to 11mm, metal. For use with Lika Electronic AQ59 series encoders.
BR1-12	$7.00	Lika Electronic reducer bushing, 15mm to 12mm, metal. For use with Lika Electronic AQ59 series encoders.
BR1-12.7	$7.00	Lika Electronic reducer bushing, 15mm to 1/2in, metal. For use with Lika Electronic AQ59 series encoders.
PF4256	$35.00	Lika Electronic round mounting flange, 61mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
PF0408	$129.00	Lika Electronic spring-loaded encoder mount, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
PF4257	$19.00	Lika Electronic right angle bracket, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
PF4259	$22.00	Lika Electronic square mounting flange, 92mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
PF4274	$99.00	Lika Electronic round mounting flange, 70mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
PF4258	$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.
PF5000-A	$16.00	Lika Electronic square mounting flange, 70mm bolt hole circle, metal. For use with Lika Electronic AQ58 series encoders. Mounting hardware included.
LKM-386	$9.00	Lika Electronic servo mount clamp, metal. For use with Lika Electronic AQ58 and A41 series encoders. Mounting hardware included.
KIT-XX59	$9.00	Lika Electronic servo mount clamp, metal. For use with Lika Electronic AQ58 and AQ59 series encoders. Mounting hardware included.
KIT-IP/IQ58	$139.00	Lika Electronic programming cable, USB A to 4-position terminal block, 4.9ft/1.5m 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.
EC-IP/IQ58-M12	$29.00	Lika Electronic programming cable, M12 axial female to pigtail, 2ft cable length. For use with Lika Electronic AQ58 and AQ59 series encoders. Requires Lika Electronic KIT-IP/IQ58 programming cable.
KIT-IP/IQ58-USB-M12	$99.00	Lika Electronic programming cable, USB A to M12 axial female, 1.6ft/0.5m cable length. For use with Lika Electronic AQ58 and AQ59 series encoders.
EC-M12F12-LKT12-05	$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.
EC-M12F12-LKT12-10	$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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AQ5x Series Programmable Incremental Encoders

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	400×10^6 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