Encoder Selection Guide

SAE Dimension Encoders & Metric Dimension Encoders

Rotary Encoder Selection Guide

Type	Duty	Series	Encoder Diameter	Shaft Diameter	Shaft Type	Operating Voltage (VDC) and Electrical Output	IP Rating	Cable	Max Radial Load (N)	Max Axial Load (N)	Available Resolutions (PPR)	Brand
Incremental	Modular Kit	AMT	28mm, 42mm	2, 3, 4, 5, 6, 8 mm 3/16, 1/4, 3/8, 1/2, 5/8 inch	Hollow	5V Line Driver (TTL) or 5V Push-Pull (Totem Pole)	IP20	Custom cables sold separately	N/A	N/A	Programmable up to 4096	Same Sky
		MTRA	31mm	5mm 1/4", 3/8"	Hollow	5V Line Driver (TTL) or 5V Push-Pull (Totem Pole)	IP20	Custom cables sold separately	N/A	N/A	400, 1000	SureStep
	Light Duty	TRD-S(H)R	38mm, 40mm	8mm	Solid or Hollow	5V Line Driver (TTL) or 5–26V NPN/PNP Open Collector (HTL)	IP50 or IP65	Integral 2m pigtail cable	20	10	100, 200, 360, 500, 600, 1000, 1024, 2000, 2500	JTEKT
		A41	41mm	1/4"	Solid or Hollow	5–30 VDC Universal output circuit: Push-Pull (Totem Pole), or NPN/PNP Open Collector (HTL), or Line Driver (TTL)	IP64	Integral 2m pigtail cable	20	20	100, 200, 360, 500, 1000, 1024, 200, 2048, 3600, 4096	Lika
	Medium Duty	A50	50mm	1/4", 3/8"	Hollow		IP65	M12 cables sold separately	20	20	360, 1000, 1024, 2048	
		A80	80mm	30mm (reducer bushings available for 19 & 20mm, 5/8", 7/8", 1, and 1 1/8")	Hollow		IP64	M23 cables sold separately	30	30	1024	
		AQ58/59	58mm, 59mm	3/8" solid, 15mm hollow (reducer bushings available for 6, 8, 10, 11, 12 mm; 1/4, 3/8, 1/2 inch)	Solid or Hollow		IP65	M12 cables sold separately	100	100	Programmable from 1 to 16,384 (default 1024)	
		AR01	58mm	15mm	Solid Dual-shaft		IP65	M12 cables sold separately	50	50	250 (linear res: 0.36 deg/cts) 1250 (linear res: 0.072 deg/cts)	
		TRDA-20	2"	3/8"	Solid	5VDC Line Driver (TTL) or 5–30 VDC Push-Pull (Totem Pole)	IP50	Integral 2m pigtail cable	50	30	100, 360, 500, 1000, 1024, 2500	JTEKT
		TRDA-25	2.5" flange (w/2.0" body)	3/8"	Solid		IP65	Military Spec (MS) cables sold separately	50	30	100, 360, 500, 1000, 1024, 2500	
		TRD-N(H)	50mm	8mm	Solid or Hollow		IP65	Integral 2m pigtail cable	50	30	3, 4, 5, 10, 30, 40, 50, 60, 100, 120, 200, 240, 250, 300, 360, 400, 480, 500, 600, 750, 1000, 1024, 1200, 2000, 2500	
	Heavy Duty	WDGI 36J	36mm	10mm	Solid	4.75–30 VDC Universal (HTL or TTL, single-ended or differential)	**IP69K**	8-pin M12 A-coded cable	300	300	60, 100, 360, 500, 1000, 1024, 2000, 2500, 4096, 5000	Wachendorff
		WDG 58V	58mm	10mm	Solid	5–30 VDC universal (HTL or TTL, single-ended or differential) or 4.75–5.5 VDC Line Driver (Differential) or 10-30 VDC Push-Pull (Totem)	**IP69K**	Integral 5m pigtail	100	100	60, 100, 360, 500, 1000, 1024, 2000, 2500, 4096, 5000	
		TRD-GK	78mm	10mm	Solid	10–30 VDC Push-Pull (Totem Pole)	IP65	Integral 2m pigtail cable	100	50	30, 100, 120, 200, 240, 250, 300, 360, 400, 500, 600, 1000, 1200, 2000, 2500, 3600, 5000	JTEKT
Absolute	Medium Duty	TRD-NA	50mm	8mm	Solid	10–30V NPN/PNP Open Collector (HTL)	IP65	Integral 2m pigtail cable	50	30	32, 64, 128, 180, 256, 360, 512, 720, 1024 (Gray code)	
		AM5x[1]	58mm	6–15mm, 3/8"	Solid or Hollow	5–30 VDC, 10–30 VDC	IP65	M12 cables sold separately	40	40	Programmable up to 8192 ppr (13 bit), up to 16384 turns (14 bit)	Lika

1 - AM5x encoders have different versions supporting 4 different outputs - Ethernet/IP, Modbus TCP, EtherCAT, and Modbus RTU (RS485).

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Linear Encoder Selection Guide

Type	Duty	Sensing Technology	Series	Available Lengths	Tracking Width	Operating Voltage (VDC) and Electrical Output	IP Rating	Cable	Max Speed	Available Resolutions	Brand
Rotary Encoder + Wheel	Medium Duty	Optical	AR01	Unlimited	88mm (two wheels)	5–30 VDC Universal output circuit: Push-Pull (Totem Pole), or NPN/ PNP Open Collector (HTL), or Line Driver (TTL)	IP65	M12 cables sold separately	With 12.5in wheels: 34 ft/s With 250mm wheels: 8.3 m/s	250 PPR (linear res: 0.36 deg/cts) 1250 PPR (linear res: 0.072 deg/cts)	Lika
Linear Encoder + Tape (non-contact)	Medium Duty	Magnetic	AME95	Up to 20m (tape can cut in field)	10mm tape	5 VDC Line Driver (Differential) or 10–30 VDC Push-Pull (Totem Pole)	IP67	2m pigtail or 2m 8-pin M12 male A-coded	20 m/s	10µm (x4 quadrature=2.5µm/ ct)	
Linear Encoder + Rail (captured)	Heavy Duty	Magnetic	AMIG	Fixed lengths: 195, 220, 240, 300, 370, or 650 mm	25mm rail		IP65		1 m/s	50µm (x4 quadrature=12.5µm/ ct)	