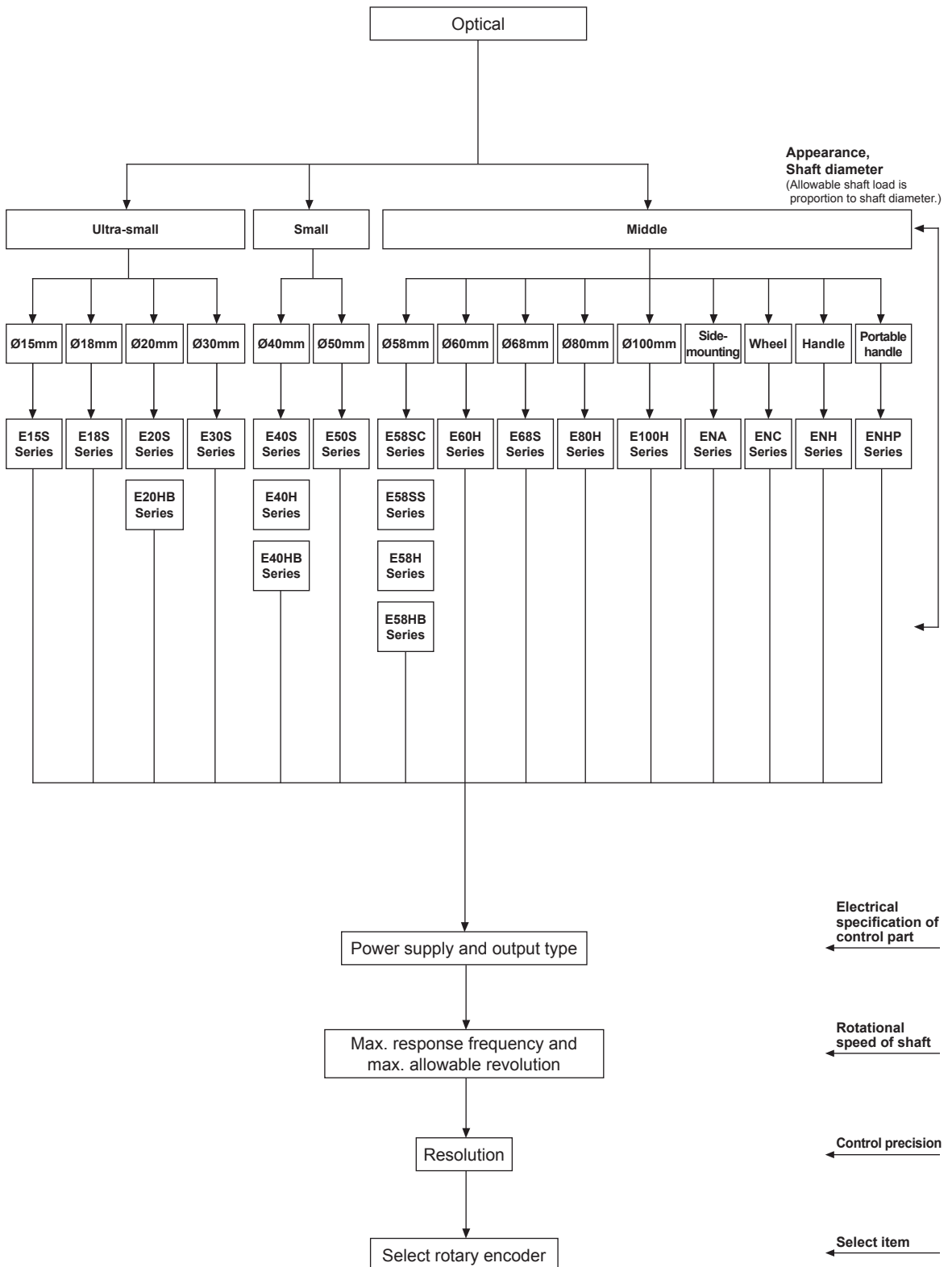


# Rotary Encoder Selection

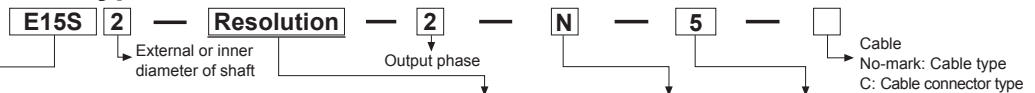
## Incremental Type Rotary Encoder Selection













# Product Overview

## Incremental Type

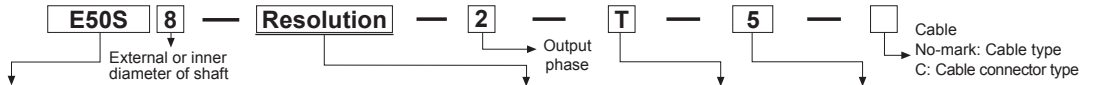








Appearance	Model	Resolution <sup>*1</sup>	Control output	Power supply	Reference			
 Ø15mm Shaft type	E15S2-Resolution-2-N-5	36PPR	T (1): Totem pole output	5: 5VDC ±5%	F-10 to 11			
 Ø18mm Shaft type	E18S2-Resolution-1-N-5 E18S2.5 V	100PPR 200PPR 300PPR 400PPR			F-12 to 13			
 Ø20mm Shaft type	E20S2-Resolution-3-N-5, 12 V -6-L-5	100PPR 200PPR 320PPR 360PPR			N (2): NPN open collector output	12: 12VDC ±5%	F-14 to 15	
 Ø20mm Blind hollow shaft type	E20HB2-Resolution-3-N-5, 12 E20HB2.5 V E20HB3 -6-L-5							
 Ø30mm Shaft type	E30S4-Resolution-3-T-5, 24 N V -6-L-5	100PPR 1000PPR 200PPR 1024PPR 360PPR 3000PPR 500PPR			V (3): Voltage output	24: 12-24VDC ±5%	F-16 to 17	
 Ø40mm Shaft type	E40S6-Resolution-2-T-5, 24 (standard item) N E40S8 V (option) -3-T-5, 24 N V -4-L-5 6	*1PPR 240PPR *2PPR 250PPR *5PPR 256PPR 10PPR 300PPR *12PPR 360PPR 15PPR 400PPR 20PPR 500PPR 23PPR 512PPR 25PPR 600PPR 30PPR 800PPR 35PPR 1000PPR 40PPR 1024PPR 45PPR 1200PPR 50PPR 1500PPR 60PPR 1800PPR 75PPR 2000PPR			L: Line driver output (except C <sub>E</sub> certification)			F-18 to 20
 Ø40mm Hollow shaft type	E40H8-Resolution-2-T-5, 24 (standard item) N E40H6 V E40H10 -3-T-5, 24 E40H12 N (option) V -4-L-5 6	100PPR 2048PPR 120PPR 2500PPR 125PPR 3000PPR 150PPR 3600PPR 192PPR 5000PPR 200PPR			※The number of ( ) is former name.			
 Ø40mm Blind hollow shaft type	E40HB8-Resolution-2-T-5, 24 (standard item) N E40HB6 V E40HB10 -3-T-5, 24 E40HB12 N (option) V -4-L-5 6							

※1: Not indicated resolutions are customizable.

※The 'w' marked pulse is only for A, B phase in resolution. (line driver output is for A,  $\bar{A}$ , B,  $\bar{B}$  phase.)

# Product Overview









Appearance	Model	Resolution*	Control output	Power supply	Reference
<b>Ø50mm Shaft type</b> 	<b>E50S8</b> - Resolution -2-T-5, 24 N V -3-T-5, 24 N V -4-L-5 6  ※Cable CR: Axial connector type CS: Radial connector type	*1PPR 75PPR 600PPR *2PPR 100PPR 800PPR *5PPR 120PPR 1000PPR 10PPR 125PPR 1024PPR 12PPR 150PPR 1200PPR 15PPR 192PPR 1500PPR 20PPR 200PPR 1800PPR 23PPR 240PPR 2000PPR 25PPR 250PPR 2048PPR 30PPR 256PPR 2500PPR 35PPR 300PPR 3000PPR 40PPR 360PPR 3600PPR 45PPR 400PPR 4000PPR 50PPR 500PPR 5000PPR 60PPR 512PPR 6000PPR 800PPR	<b>T (1): Totem pole output</b>		<b>F-21 to 23</b>
<b>Ø58mm Shaft type</b> 	<b>E58SC10</b> - Resolution -2-T-5, 24 (shaft clamping) N <b>E58SS6</b> (shaft synchro) -3-T-5, 24 N V -4-L-5 6  ※Cable CR: Axial connector type CS: Radial connector type	*1PPR 250PPR *2PPR 256PPR *5PPR 300PPR 10PPR 360PPR *12PPR 400PPR 15PPR 500PPR 20PPR 512PPR 23PPR 600PPR 25PPR 800PPR 30PPR 1000PPR 35PPR 1024PPR 40PPR 1200PPR 45PPR 1500PPR 50PPR 1800PPR 60PPR 2000PPR 75PPR 2048PPR 100PPR 2500PPR 120PPR 3000PPR 125PPR 3600PPR 150PPR 5000PPR 192PPR 6000PPR 200PPR 8000PPR 240PPR	<b>N (2): NPN open collector output</b>		
<b>Ø58mm Hollow shaft type</b> 	<b>E58H12</b> - Resolution -2-T-5, 24 N V -3-T-5, 24 N V -4-L-5 6	25PPR 600PPR 30PPR 800PPR 35PPR 1000PPR 40PPR 1024PPR 45PPR 1200PPR 50PPR 1500PPR 60PPR 1800PPR 75PPR 2000PPR 100PPR 2048PPR 120PPR 2500PPR 125PPR 3000PPR 150PPR 3600PPR 192PPR 5000PPR 200PPR 6000PPR 240PPR 8000PPR	<b>V (3): Voltage output</b>	<b>5:</b> 5VDC ±5%	<b>F-24 to 27</b>
<b>Ø58mm Blind hollow shaft type</b> 	<b>E58HB12</b> - Resolution -2-T-5, 24 N V -3-T-5, 24 N V -4-L-5 6  ※Cable CR: Axial connector type CS: Radial connector type		<b>L: Line driver output (except CE certification)</b>	<b>24:</b> 12-24VDC ±5%	
<b>Ø60mm Hollow shaft type</b> 	<b>E60H20</b> - Resolution -3-T-5, 24 N V -6-L-5	100PPR 1024PPR 5000PPR 8192PPR	※The number of ( ) is former name.		<b>F-28 to 30</b>
<b>Ø68mm Shaft type</b> 	<b>E68S15</b> - Resolution -6-L-5	500PPR 600PPR 1024PPR			<b>F-31 to 32</b>

- (A) Photoelectric Sensors
- (B) Fiber Optic Sensors
- (C) Door/Area Sensors
- (D) Proximity Sensors
- (E) Pressure Sensors
- (F) Rotary Encoders
- (G) Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets
- (H) Temperature Controllers
- (I) SSRs / Power Controllers
- (J) Counters
- (K) Timers
- (L) Panel Meters
- (M) Tacho / Speed / Pulse Meters
- (N) Display Units
- (O) Sensor Controllers
- (P) Switching Mode Power Supplies
- (Q) Stepper Motors & Drivers & Controllers
- (R) Graphic/ Logic Panels
- (S) Field Network Devices
- (T) Software

※1: Not indicated resolutions are customizable.  
 ※The '\*' marked pulse is only for A, B phase in resolution. (line driver output is for A,  $\bar{A}$ , B,  $\bar{B}$  phase.)

# Product Overview

Appearance	Model	Resolution <sup>*1</sup>	Control output	Power supply	Reference
 <p>Ø80mm Hollow shaft type</p>	<b>E80H30</b> - Resolution -3-T-5, 24 (standard item) N <b>E80H32</b> (option) -6-L-5	60PPR 100PPR 360PPR 500PPR 512PPR 1024PPR 3200PPR	T (1): Totem pole output		F-33 to 35
 <p>Ø100mm Hollow shaft type</p>	<b>E100H35</b> - Resolution -3-T-5, 24 N V -6-L-5	512PPR 1024PPR 10000PPR			F-36 to 38
 <p>Side-mounting type</p>	<b>ENA</b> - Resolution -2-T-5, 24 N V -3-T-5, 24 N V  ※ENA - Resolution -2- □ - □ : Output the A, B phase ※ENA - Resolution -3- □ - □ : Output the A, B, Z phase	*1PPR 60PPR 512PPR *2PPR 75PPR 600PPR *5PPR 100PPR 800PPR 10PPR 120PPR 1000PPR 12PPR 150PPR 1024PPR 15PPR 192PPR 1200PPR 20PPR 200PPR 1500PPR 23PPR 240PPR 1800PPR 25PPR 250PPR 2000PPR 30PPR 256PPR 2048PPR 35PPR 300PPR 2500PPR 40PPR 360PPR 3000PPR 45PPR 400PPR 3600PPR 50PPR 500PPR 5000PPR	N (2): NPN open collector output  V (3): Voltage output	5: 5VDC ±5%	F-39 to 41
 <p>Measuring wheel type</p>	<b>ENC-1</b> - Resolution -T-5, 24 N V (output phase: A, B)	1: 1mm/1Pulse 2: 1cm/1Pulse 3: 1m/1Pulse 4: 0.01yd/1Pulse 5: 0.1yd/1Pulse 6: 1yd/1Pulse	L: Line driver output (except CE certification)	24: 12-24VDC ±5%	F-42 to 43
 <p>Manual handle type</p>	<b>ENH</b> - Resolution -1-T-5, 24 2 -1-V-5, 24 2 -1-L-5 2	25PPR 100PPR	※The number of ( ) is former name.		F-44 to 45
 <p>Portable encoder with handle</p>	<b>ENHP</b> - Resolution -1-T-5, 24 2 -1-L-5 2	100PPR		F-46 to 47	






※1: Not indicated resolutions are customizable.

※The '\*' marked pulse is only for A, B phase in resolution. (line driver output is for A,  $\bar{A}$ , B,  $\bar{B}$  phase.)

## ■ Absolute Type (Single-turn)

**EP50S** — **8** — **Resolution** — **1** **R** — **P** — **5**


External or inner diameter of shaft      Revolution direction\*1

Appearance	Model	Resolution (-division)	Output code	Control output	Power supply	Reference	
Ø50mm Shaft type 	<b>EP50S8 - Resolution</b> -1R-N (P)-5, 24 2R 3R 1F 2F 3F	6    48	P (1): PNP open collector output  N (2): NPN open collector output  ※The number of ( ) is former name.	P (1): PNP open collector output  N (2): NPN open collector output	5: 5VDC ±5%  24: 12-24VDC ±5%	F-48 to 52	
		8    64					
		10   90					
		12   128					
		16   180					
20   256							
24   360							
32   512							
40   720							
45   1024							
Ø50mm Shaft type 	<b>EP50SP- Resolution</b> -3F-N-5, 24 R	180 360	1: BCD code			F-53 to 55	
Ø58mm Shaft type  	<b>EP58SC10 - Resolution</b> -1R-N (P)-5, 24 (shaft clamping) 2R <b>EP58SS6</b> (shaft synchro) 3R 1F 2F 3F	45 64 90 128 180 256 360 512 1024	2: Binary code 3: Gray code (customizable)			F-62 to 65	
		<b>EP58HB8 - Resolution</b> -1R-N (P)-5, 24 2R 3R 1F 2F 3F					
		Ø58mm Blind hollow shaft type 					

※1: R-CCW as from the shaft, F-CW as from the shaft.

**ENP** — **1** **1** **1** **R** — **Resolution** — **P**

Output\*1      Revolution direction\*2

Appearance	Model	Output code	Power supply	Resolution (-division)	Control output*3	Reference	
Ø60mm Shaft type 	<b>ENP-111R- Resolution</b> -P 111F	1: BCD code	1: 12-24VDC ±5%	6	P (1): PNP open collector output  N (2): NPN open collector output	F-66 to 69	
				8			
	<b>ENP-101R- Resolution</b> -N 101F		12	0: 5VDC ±5% ※only for 360-division of resolution.	360		P (1): PNP open collector output  N (2): NPN open collector output
			16				
	<b>ENP-110R-360-P</b> 110F		24	1: 12-24VDC ±5%			
	<b>ENP-111R-360-P</b> 111F						
<b>ENP-100R-360-N</b> 100F							
<b>ENP-101R-360-N</b> 101F							

※1: 0-Negative logic, 1-Positive logic

※2: R-CCW as from the shaft, F-CW as from the shaft.

※3: The number of ( ) is former name.

(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

(T) Software


# Product Overview

## ■ Absolute Type (Multi-turn)

EPM50S 8 — 10 13 — B — PN — 24 —  

External diameter of shaft → 8     
 → 10 13     
 → B     
 → PN     
 → 24     
 →  


Cable  
 No-mark: Axial cable type  
 C: Radial cable type

Appearance	Single-turn	Multi-turn	Output code	Control output	Power supply	Reference
Ø50mm Shaft type 	10bit (1024-division)	13bit (8192-revolution)	Binary code	PN: Parallel NPN open collector output  S: SSI	12-24VDC ±5%	F-70 to 74

## ■ Absolute Type (Magnetic, Single-turn)

MGA50S 8 — 1024 — 1 R — N — 5


External diameter of shaft → 8     
 → 1024     
 → 1 R     
 → N     
 → 5

Appearance	Resolution (-division)	Output code	Revolution direction	Control output	Power supply	Reference
Ø50mm Shaft type 	32      128 40      180 45      256 48      360 64      512 90      720 1024	1: BCD code 2: Binary code 3: Gray code	F: Output value increases at CW direction  R: Output value increases at CCW direction	N: NPN open collector output	5: 5VDC ±5% 24: 12-24VDC ±5%	F-56 to 61

## ■ Absolute Type (Magnetic, Multi-turn)



MGAM50S 8 — 10 10 — B F — PN — 24

External diameter of shaft → 8     
 → 10 10     
 → B F     
 → PN     
 → 24

Appearance	Single-turn	Multi-turn	Output code	Revolution direction	Control output	Power supply	Reference
Ø50mm Shaft type 	10bit (1024-division)	13bit (8192-revolution)	Binary code	F: Output value increases at CW direction  R: Output value increases at CCW direction	PN: Parallel NPN open collector output  S: SSI Line driver output	12-24VDC ±5%	F-75 to 79

# Product Overview

## Flexible Coupling

Model	ERB-F-19C- <input type="checkbox"/>	ERB-F-19S- <input type="checkbox"/>	ERB-F-26C- <input type="checkbox"/>	ERB-F-26S- <input type="checkbox"/>
Appearance				
Connection type	Clamp	Set screw	Clamp	Set screw
Max. revolutions	8000rpm	20000rpm	6000rpm	15000rpm
Max. torque	1.2 N·m (12.17kgf·cm)		3.0 N·m (30.42 kgf·cm)	
Rated torque	0.6 N·m (6.08kgf·cm)		1.5 N·m (15.21 kgf·cm)	
Max. allowable misalignment	Angular misalignment	2.5°		
	Parallel misalignment	0.15mm	0.2mm	
	End-play	±0.3mm	±0.4mm	
Standard bore diameter (tolerance h7)	Ø4, Ø5, Ø6mm		Ø6, Ø8mm	
Material	Aluminum (AL 7075-T6), Alumite surface			
Reference	<b>F-80 to 81</b>			

(A) Photoelectric Sensors

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(C) Door/Area Sensors

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Connector Cables/  
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