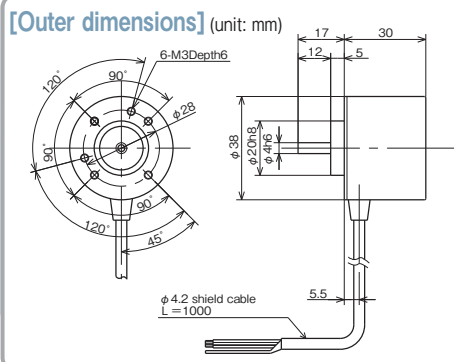
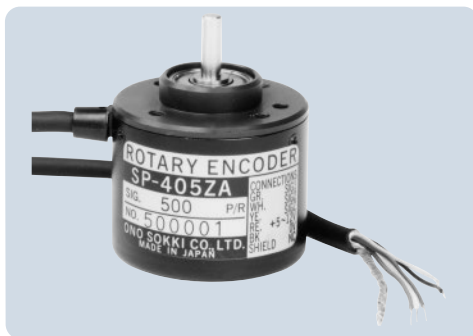


Ultra-compact
type

SP-405ZA series

Standard output pulses (P/R)	60	100	200	300
Optional output pulses (P/R)	360	500	600	
	40	50	250	400 800 900

Ultra-compact shaft type appropriate to the built-in assembly



[Features]

- Economical type to meet the needs of OEM
- Outer diameter $\phi 38$, the mass approx. 100 g ultra-compact and lightweight
- 2-phase square wave + zero-mark signal output
- Selectable the number of pulses from 13 kinds

[Electrical specification]

(*: an optional specification)

Output Waveform	: 2-phase square wave + zero-mark (timing optional)
Output Voltage	: Hi: supply voltage - 20 % or more, Lo: 0.5 V or less
Output type	: collector load resistance 10 k Ω or more *open collector: within DC30 V, 35 mA
Adjacent error	: $\pm 1/15$ P
Power supply	: DC5 to 12 V ± 10 %, 50 mA * Only open collector by an option, 24 VDC is possible.
Response frequency	: 100 kHz
Connection method	: direct cable 1 m (terminal: open)

[Mechanical specification]

The maximum rotation speed	: 6000 r / min
Allowable shaft load	: radial: 25 N thrust: 15 N
Starting torque	: 2 mN $\cdot$ m
Moment of inertia	: 6 g $\cdot$ cm ²
Weight	: approx. 0.1 Kg

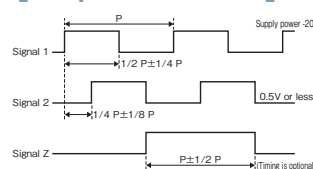
[General specification]

Operating temperature range	: -10 to 70 $^{\circ}$ C
Storage temperature range	: -20 to 80 $^{\circ}$ C
Humidity	: 90 %, with no condensation
Protection degree	: IP40
Vibration resistance	: 98 m/s ² (3 directions each 2 h)
Shock resistance	: 980 m/s ² (3 directions 3 times each, for axis : 98 m/s ²)

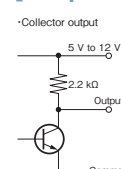
[Signal connection]

Green	White	Yellow	Shield	Red	Black
Signal 1	Signal 2	Signal Z	Case	5 to 12 V	0 V

[Output waveform]



[Output circuit]



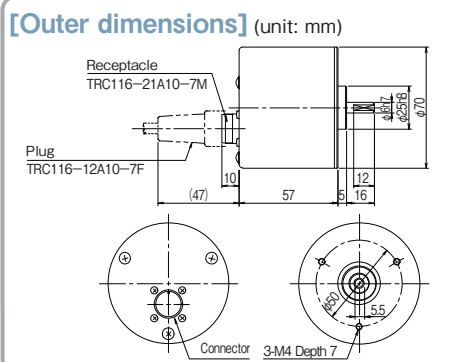
When turning clockwise (C/W), viewed from the axial direction (Inverted output diagram is omitted.)

General-purpose
compact type

RP-432Z series

Standard output pulses (P/R)	120	360	600	1000	1024
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General-purpose type that can be used for a wide range of applications



[Features]

- General-purpose type that can be used for a wide range of applications
- A low price by miniaturization and standardization.
- Suitable for OEM
- Both DC5 V/DC12 V available for power supply
- Easy-to-use connector system for signal output connection
- Outputs 2-phase square wave + zero-mark signal.

[Electrical specification]

Output waveform	: 2-phase square wave + zero-mark (timing is optional)
Output voltage	: when using 5 V power supply --- Hi: 4 V or more, Lo: 0.2 V or less when using 12 V power supply --- Hi: 10 V or more Lo: 0.3 V or less
Output method	: totem pole, load resistance: 1 k Ω or more
Adjacent error	: $\pm 1/20$ P
Power supply	: DC5 V ± 5 %, 100 mA or DC12 V ± 5 %, 100 mA
Response frequency	: 50 kHz
Connection method	: 7-core connector (cable side: TRC116-12A 10-7F)

[Mechanical specification]

Max. rotation speed	: 5000 r/min
Max. allowable shaft load	: radial: 20 N, thrust: 10 N
Starting torque	: 1.5 mN $\cdot$ m
Moment of inertia	: 24 g $\cdot$ cm ²
Weight	: approx. 0.25 kg

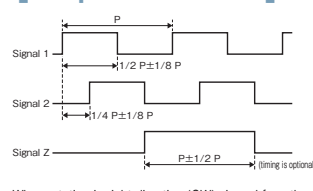
[General specification]

Operating temperature range	: 0 to 50 $^{\circ}$ C
Storage temperature range	: -20 to 80 $^{\circ}$ C
Humidity	: 85 % (40 $^{\circ}$ C, 8 h), with no condensation
Vibration resistance	: 49 m/s ² (3 directions 2 h each)
Shock resistance	: 490 m/s ² (3 directions 3 times each, for axis : 98 m/s ²)

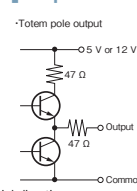
[Signal connection]

A	B	C	D	E	F	G
Signal 1	Signal 2	Signal Z	Common	5 V or 12 V	Common	Case

[Output waveform]



[Output circuit]



When rotating in right direction (CW) viewed from the axial direction