

EQUIPPED WITH MICROCOMPUTER CURRENT OUTPUT

TMR ELEMENT CONTACTLESS ROTARY ANGLE SENSOR

CP36U series

RoHS compliant



FEATURES

- Contactless Angle Sensor
- Effective Electrical Travel : $18^{\circ} \sim 360^{\circ}$
- Absolute Linearity : $\pm 0.2\%FS$ ($FS=360^{\circ}$)
- Dual wire 4 ~ 20 mA current output
- Teach-in function (Zero-Span adjustment, etc.) is available
- Robust Housing : IP67 type is available

OPTIONS

- Mounting plate type is available.

USEFUL TEACH-IN FUNCTION "ADJUSTING SWITCH UNIT (ASW-UNIT)"

The programmable type of CP36U Series provides the following user-adjustable functions by using the ASW-unit.



ASW-Unit

Offering two types of ASW-unit

[Fixed Cable type]: The ASW-unit has installed on the fixed wiring cable of the sensor. The unit is unremovable from the cable.

[Detachable Cable type]: The ASW-unit is removable from the wiring cable of the sensor, and it can be shared use with other programmable CP36U. The ASW-unit is available to be purchased separately.

- Teach-in Electrical Angle Range
 - ① Setting start (ST) and end (ED) to arbitrary positions.
The accuracy assurance range : $FS=18^{\circ}*1 \sim 360^{\circ}$
FS adjustable angle range : $1^{\circ} \sim 360^{\circ}*2$

- Zero/Span Adjustment
 - ② ZERO Adj. : 4 mA $\pm$ 1 mA Adj.
 - ③ SPAN Adj. : 20 mA $\pm$ 1 mA Adj.
Adjustable Resolution : 4.55 μ A approx.

- Output increase direction Setting
 - ④ Output increasing direction setting to CW
 - ⑤ Output increasing direction setting to CCW

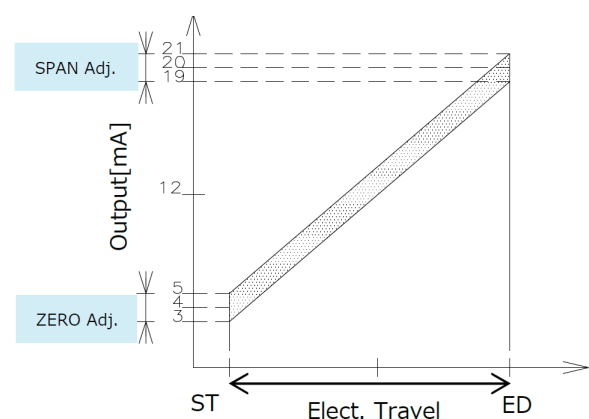
*1) Less than $FS=18^{\circ}$ is also a settable range, but out of the assurance range.

*2) If FS is set less than 1° or more than 359° , FS will be automatically reset to 360° .

Misoperation Prevention Function

To avoid the unintended output adjustment result, the setting will not be effective without pressing the "S (SET)" button. The protective cover to prevent accidentally press the buttons is also attached to the unit.

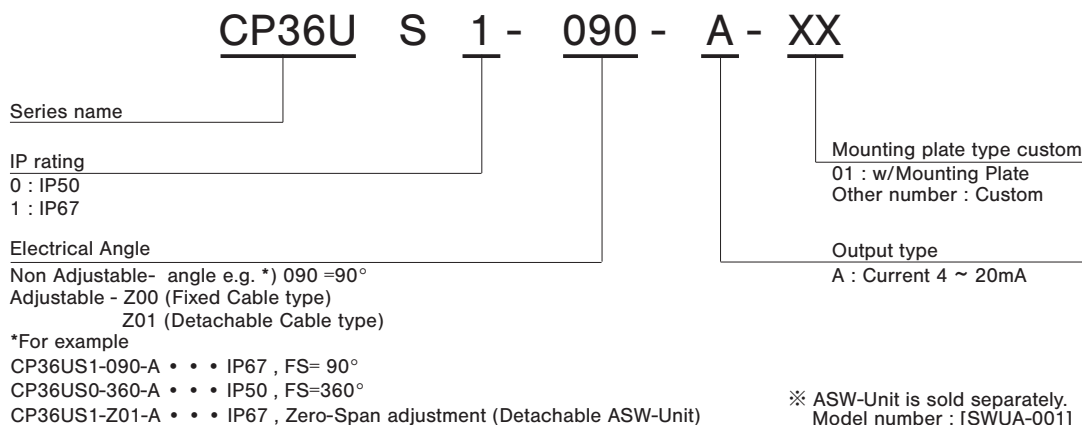
Zero-Span Adjustment



CP36U

POTENTIOMETERS

PART NUMBER DESIGNATION



STANDARD SPECIFICATIONS

Item	Non-Adjustable type				Adjustable type
Electrical Angle	360°	270°	180°	90°	360 ~ 18°
Absolute Linearity	±0.2%FS	±0.3%FS		±0.5%FS	±0.2%FS(FS=360°)
Input Voltage	24±8 VDC				
Output Range	4 ~ 20 mA				Resettable (4±1 mA, 20±1 mA, CW, CCW)
Load Resistance	600 Ω max. (Vin = @ 24 VDC)				
Update Cycle	1 kHz ±10%				
Resolution	4.55 μA Typ. (Calculation, 12bit approx.)				It depends on angle
Operating Temp. Range	-40 ~ 85°C				
Storage Temp. Range	-40 ~ 105 °C				
Temp. Drift (Operating Temp.)	±1.0°			±0.5°	±1.0° (FS=360°)
IP Grade	IP50 / IP67 (Except cable exit), ASW-Unit : IP54				
Rotational Torque	1 mN·m max. (IP50) / 10 mN·m max. (IP67)				
Vibration	200 m/s², 5 ~ 500 Hz / 20 min. 3 axis 2h each (JIS C 60068-2)				
Shock	1000 m/s², 6 ms 3 axis 6 directions 3 times each (JIS C 60068-2-27)				
EMS	100 V/m:10 kHz ~ 1 GHz (ISO 11452-2,3)				25V/m:10kHz ~ 1GHz (ISO11452-2,3)
EMI	CISPR25 CLASS2				
ESD	IEC 61000-4-2 Contact ±4 kV, Air ±8 kV, Criteria B				

※ For details on how to use the ASW-Unit, please refer the document which is called " How to use the ASW-Unit "

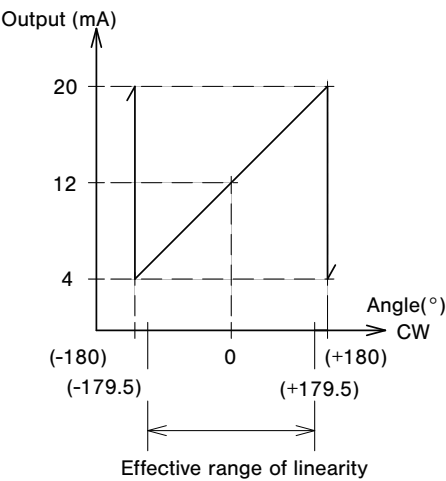
● Angle/Resolution/Linearity of w/ASW-unit type If the unit is adjusted by each user, the linearity and resolution will be changed as shown in the below.

Travel	Linearity	Resolution
FS=360°	0.2 %FS	12bit approx.
>FS=180°	0.3 %FS	12bit approx.
>FS=90°	0.5 %FS	12bit approx.
>FS=45°	0.9 %FS	11bit approx.
>FS=30°	1.3 %FS	10bit approx.
>FS=18°	2.1 %FS	9bit approx.

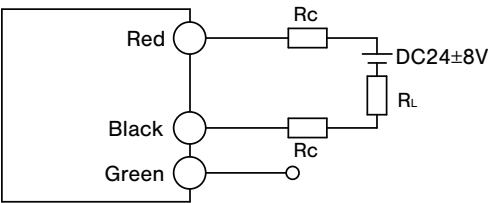
CP36U

POTENTIOMETERS

OUTPUT CHARACTERISTICS



SCHEMATIC



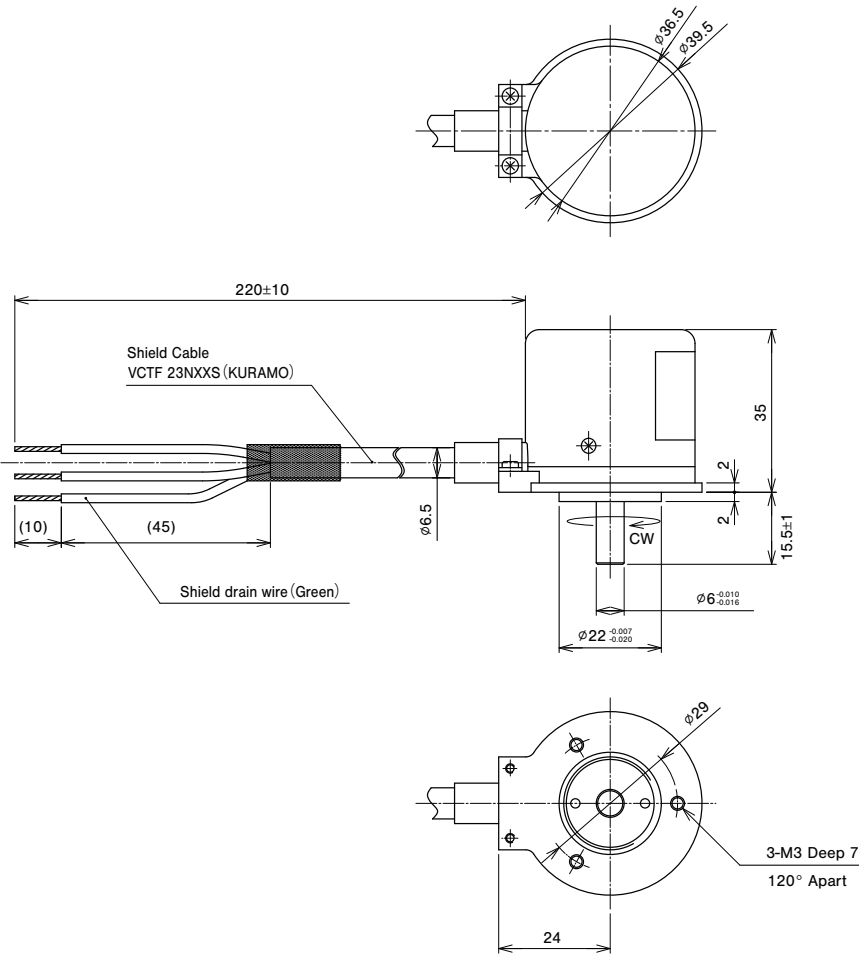
- Red, Black and Green indicate harness colors.
- Green is shield drain wire. Be grounded if necessary.
- Rc : Transmitting wire resistance
- RL : Load resistance

※ The output characteristics are typical examples of the 360° output type.

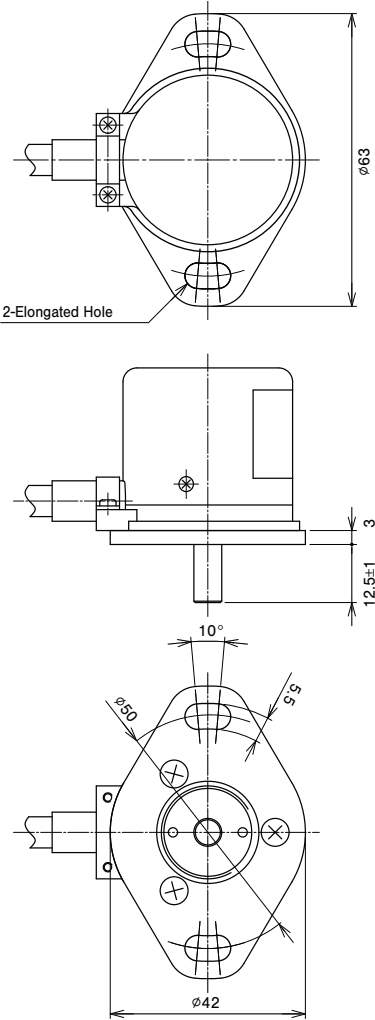
OUTLINE DIMENSIONS

(Unit:mm)

Non-Adjustable type



Mounting plate type / Option

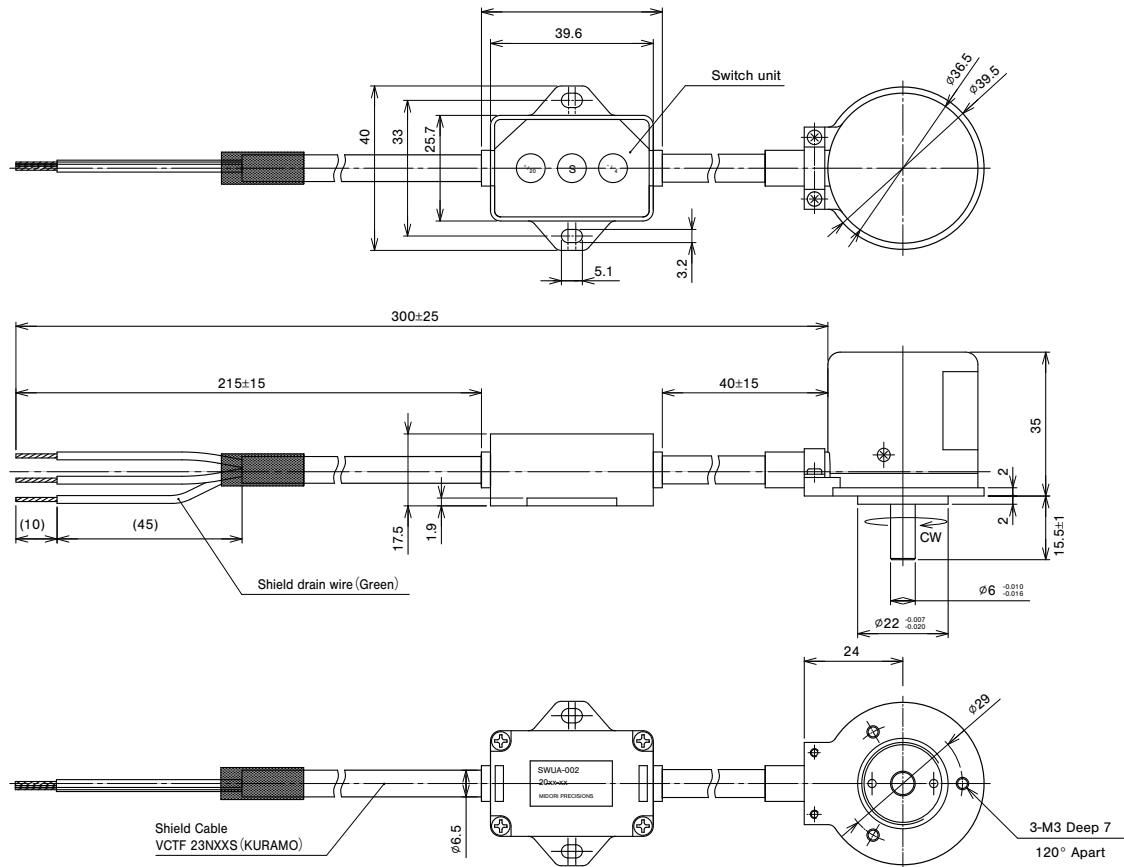


CP36U

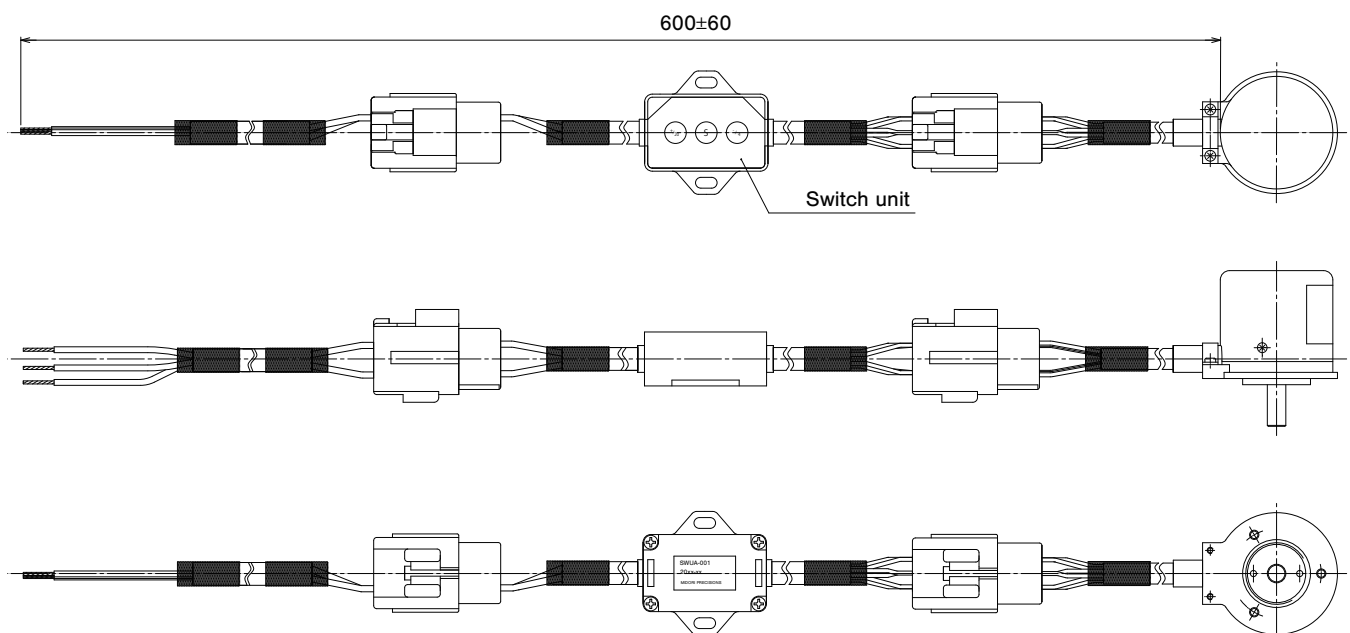
POTENTIOMETERS

● Adjustable type / Fixed Cable type

(Unit:mm)



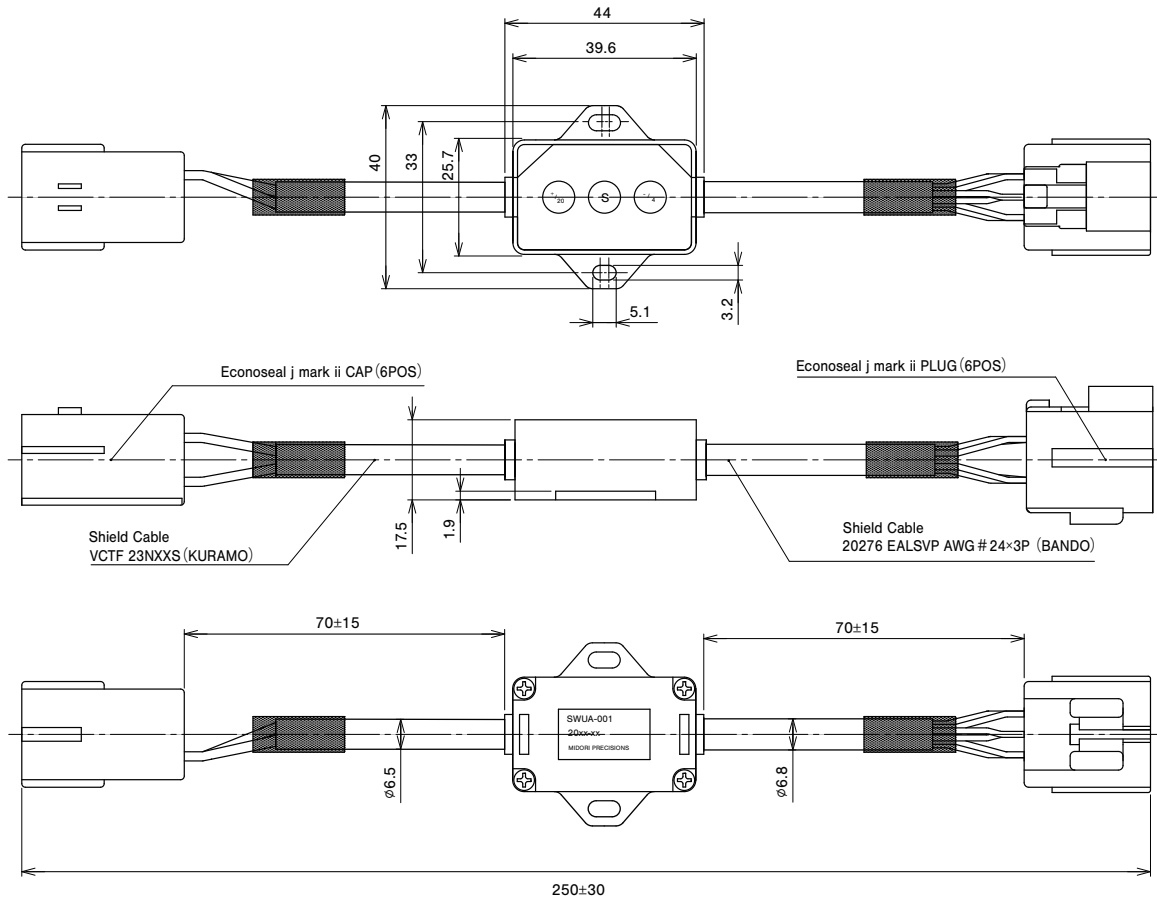
- (Unit:mm)



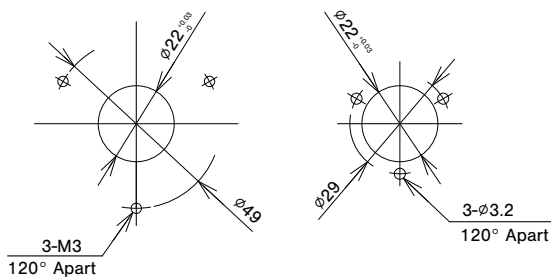
CP36U POTENTIOMETERS

■ ASW-Unit (Selling separately)

(Unit:mm)



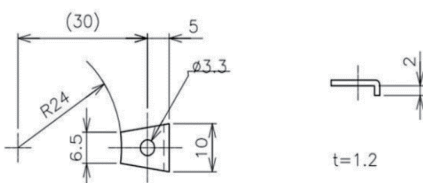
■ Mounting



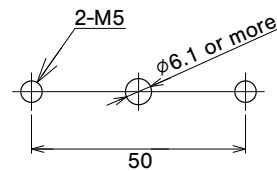
Servo mount

Screw mount

Accessories: Cleats 3 pcs.

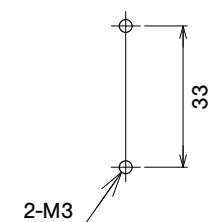


■ Mounting plate type / Option



Accessories: Flat-Washers 2 pcs.

■ Mounting For ASW-Unit



Accessories: Protection Cover 1 pcs.