

Contactless Angle Sensor

CP36U Series

TMR Element Contactless Angle Sensor
Equipped with Microcomputer



- Contactless Angle Sensor
- Effective Electrical Travel : 18°~360°
- Absolute Linearity : $\pm 0.2\%$ FS(FS=360°)
- 2 wire type Current Output
- Teach-in function (Zero-Span adjustment, etc.) is available
- Robust Housing : IP67 type is available
- 【Option】
- 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 SWU-unit.



ASW-unit

~Offering two types of ASW-unit~

[Fixed Cable type]---The ASW-Unit is 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 CP-36U. 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°*¹ ~360°

FS adjustable angle range : 1°~360°*²

• Zero/Span Adjustment

- ② ZERO Adj.:4mA±1mA Adj.

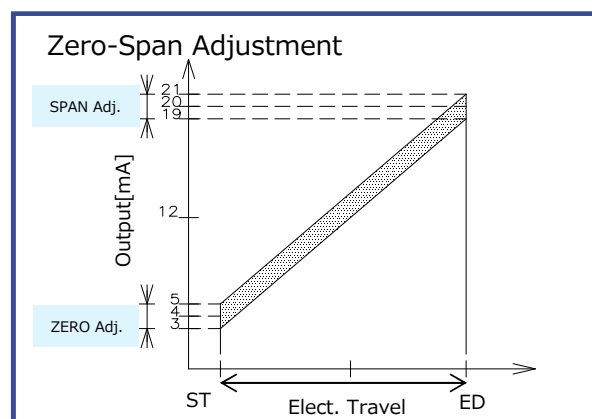
- ③ SPAN Adj.:20mA±1mA Adj.

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° 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 an unintended output adjustment result, the setting will not be effective without pressing the “S (SET)” button.

A protective cover to prevent accidentally pressing the buttons is also attached to the unit.

■ Specifications

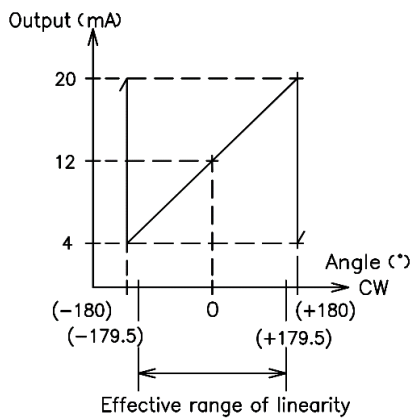
Specifications	Non-Adjustable type			Adjustable type	
	360~271	270~91	90~18	360~18	
Effective Elect. Travel	360~271	270~91	90~18	360~18	°
Absolute Linearity	±0.2	±0.3	±0.5	±0.2~±2.1	%FS
Output Range	4~20			Resettable (4±1,20±1,CW,CCW)	mA
Input Voltage	24±8				Vdc
Load Resistance	600 max. (Vin= @DC24V)				Ω
Update Cycle	1k±10%				Hz
Resolution	4.55Typ.(Calculation, 12bit approx.)			It depends on angle	μA
Category Temp. Range	-40~+85				°C
Storage Temp. Range	-40~+105				°C
Temp. Drift (Category Temp. Range)	±1.0		±0.5	±1.0 (FS=360°~91°) ±0.5 (FS=90°~18°)	°
IP Rating	IP50 / IP67 (Except cable exit)				
Rotational Torque	1mN · m max.(IP50) / 10mN · m max.(IP67)				
Vibration	200m/s ² 5~500Hz/20分 3 axis 2h each (JIS C60068-2)				
Shock	1000m/s ² 6ms 3 axis 6 directions 3 times each (JIS C60068-2-27)				
EMS	100V/m : 10k~1GHz (ISO11452-2,3)			-	
EMI	CISPR25 CLASS2				
ESD	IEC61000-4-2 Contact ±4kV, Air ±8kV, 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 table below.

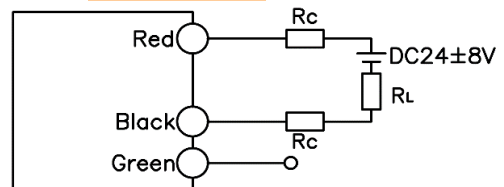
Travel	Linearity	Resolution
FS=360°	0.2%FS	12bit approx.
>FS=180°	0.3%FS	12bit approx.
>FS=90°	0.5%FS	12bit approx.
>FS=45°	0.9%FS	11bit approx.
>FS=30°	1.3%FS	10bit approx.
>FS=18°	2.1%FS	9bit approx.

■ Output Characteristics



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

■ Schematic



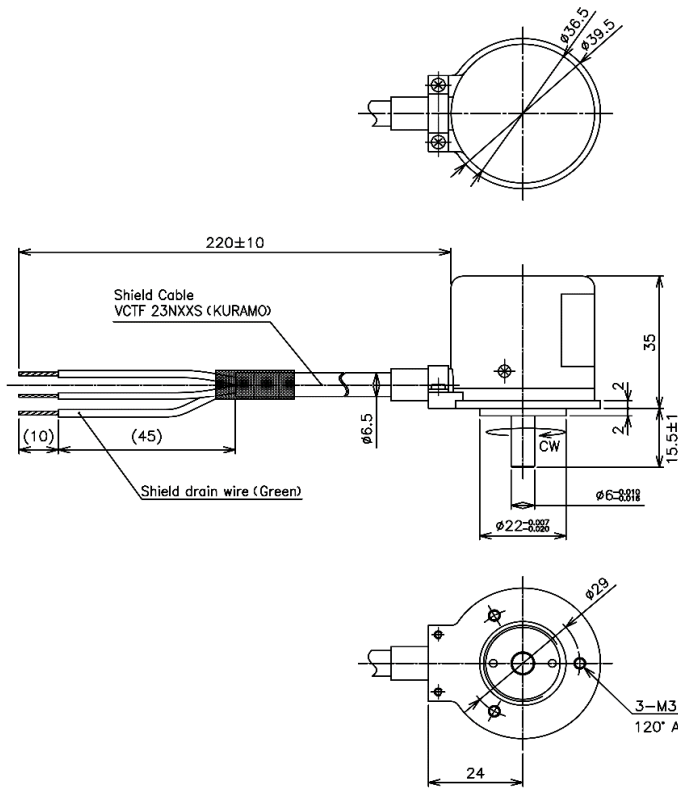
- Red,Black and Green indicate harness colors.
- Green is shield drain wire. Be grounded if necessary.
- Rc: Transmitting wire resistance
- RL: Load resistance



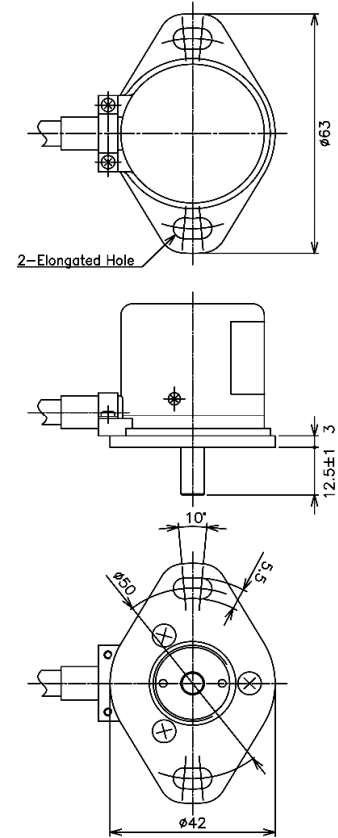
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■ Dimension (mm)

Non-Adjustable type

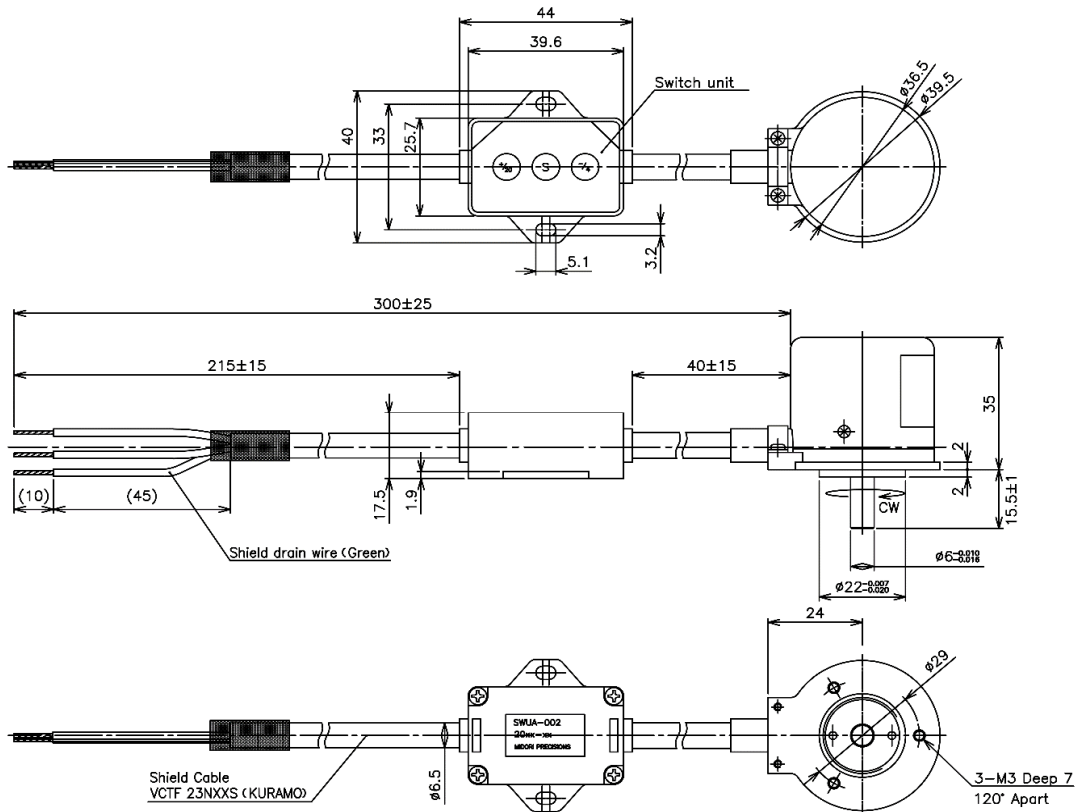


■ Mounting plate type / Option



■ Dimension (mm)

Adjustable type / Fixed Cable type

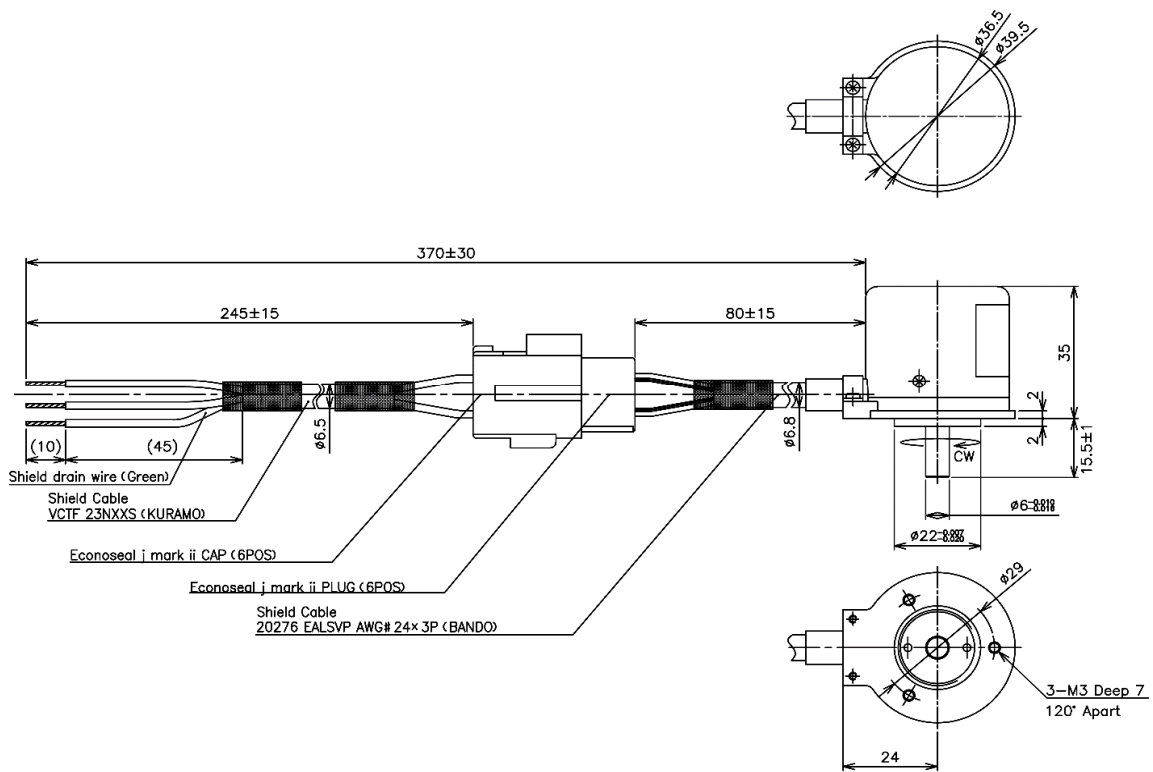


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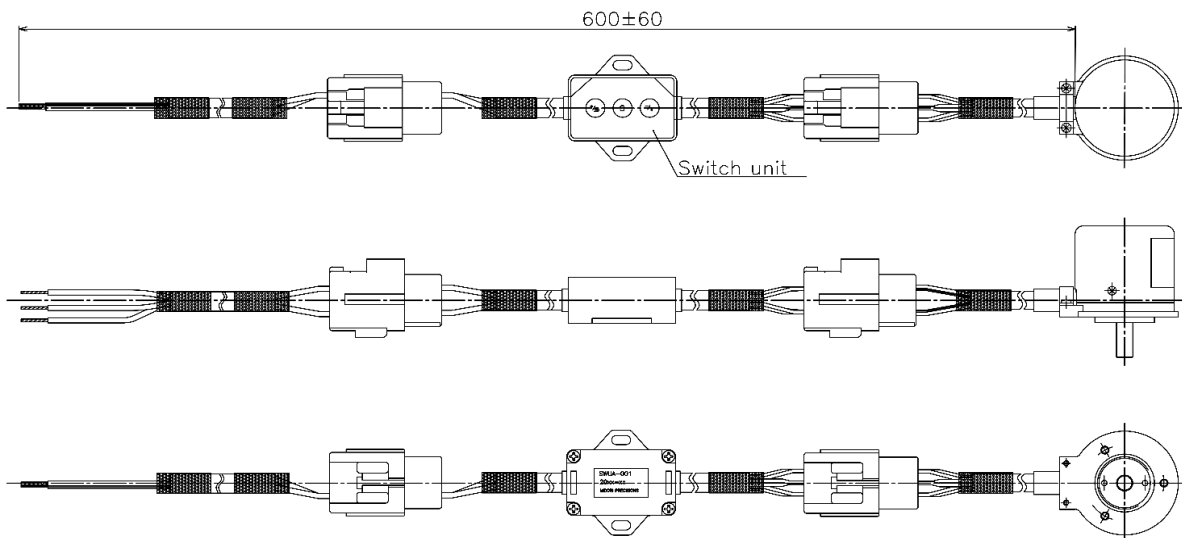
Dimension (mm) Adjustable type / Detachable Cable type

■ Detached



Dimension (mm) Adjustable type / Detachable Cable type

■ Attached ASW-Unit

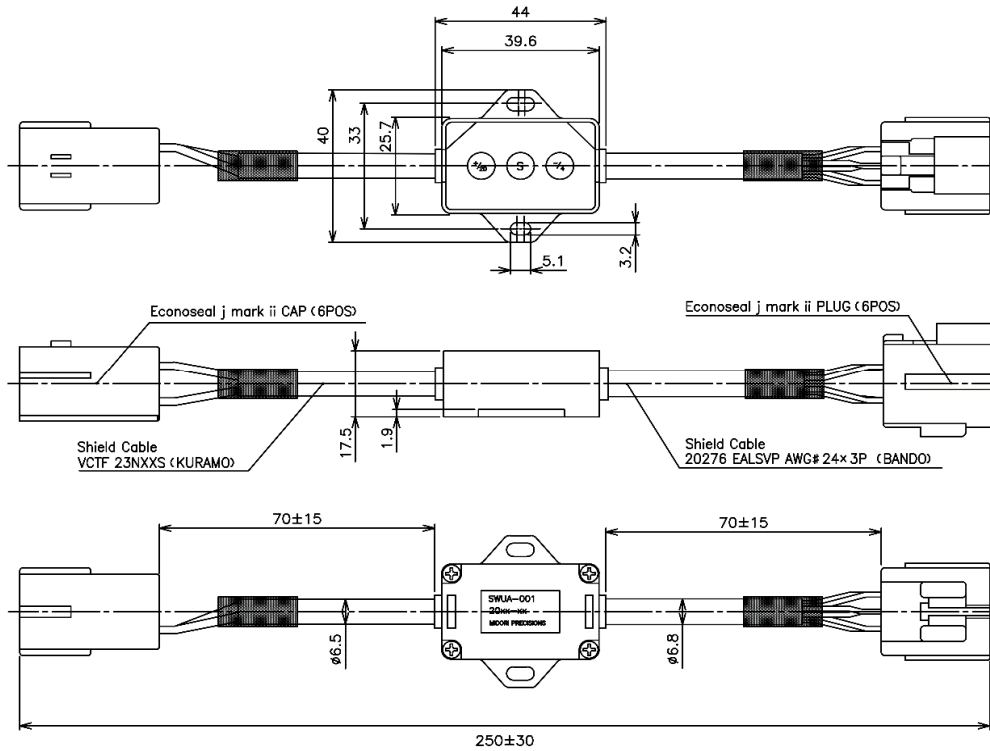


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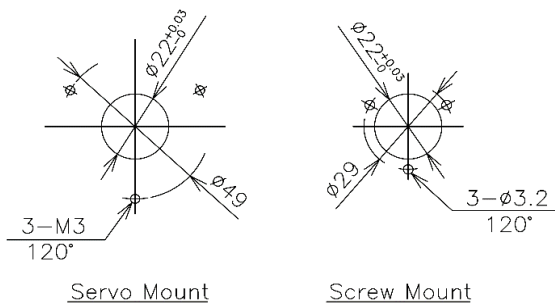
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■ Dimension (mm)

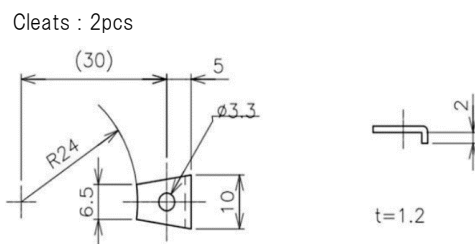
ASW-Unit (Selling separately)



■ Mounting



■ Accessories



■ Mounting

Mounting plate type / Option

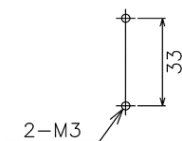


■ Accessories

Flat-Washers : 2pcs

■ Mounting

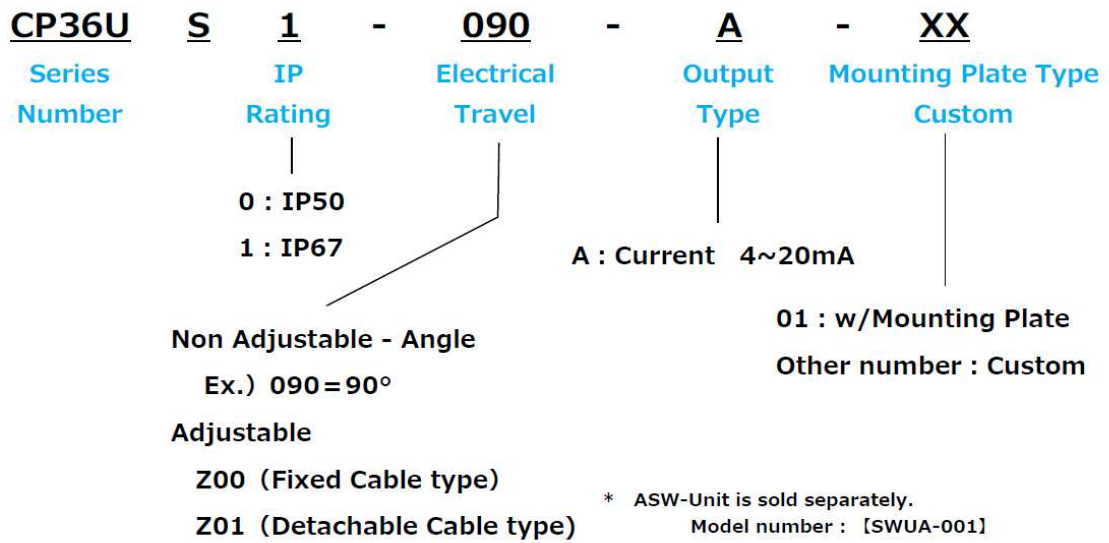
For ASW-Unit



■ Accessories

Protection Cover : 1pc

【CP36U Series Model Number Designation】



Ex : CP36US1-090-A . . . IP67,FS= 90°

CP36US0-360-A . . . IP50 ,FS=360°

CP36US1-Z01-A . . . IP67 , w/ Zero-Span adjustment (Detachable ASW-Unit)

■ Handling Instruction

- Do not connect otherwise than in above Schematic diagram.



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