07JUL2017REV.1.05

UTMⅡ-0.05/0.1/0.2/0.5/1/2/5/10/20/50Nm(R)

Rotary encoder option **Supplement manual**

This supplemental manual is only for the rotary encoder option.
Please refer to the UTMⅡ manual, in case the subjects you are looking for are not in this manual.



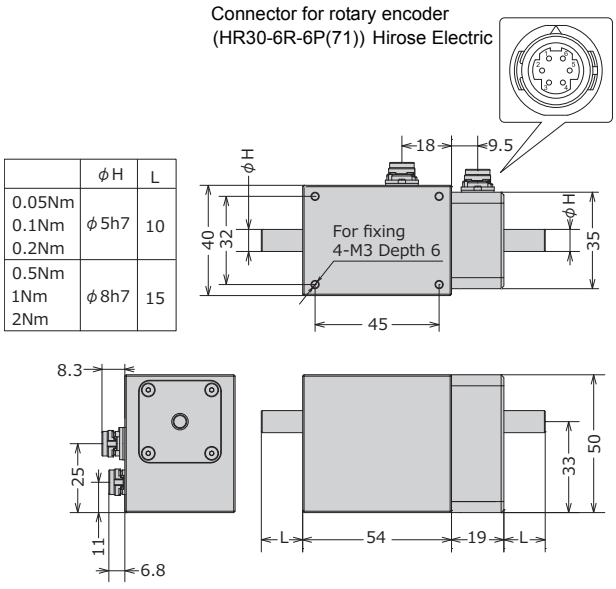
1. Precautions for handling

- Power supply input is DC5V±10% and it is not same as UTMⅡ. (Power for UTMⅡ is DC24V±15%)
  Please prepare an external power source for the encoder.
- Output is open collector type. Do not connect directly with power supply input.
- Please also do not extend the cable to avoid external disturbance.

2. External dimension

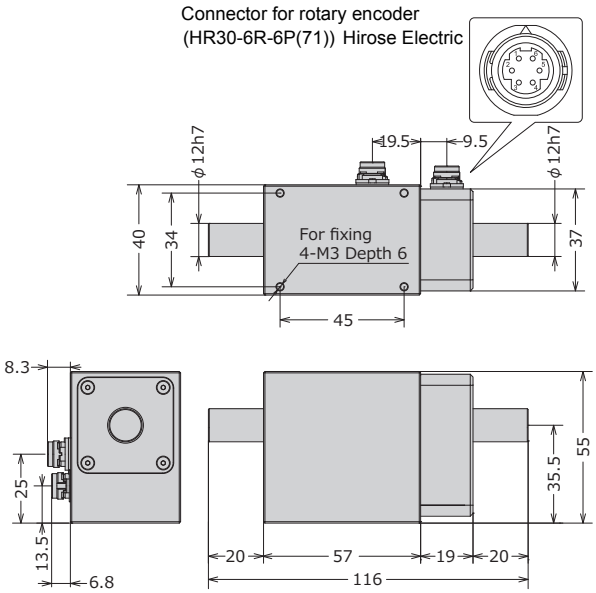
unit:mm

■ UTMⅡ-0.05Nm(R)～2Nm(R)

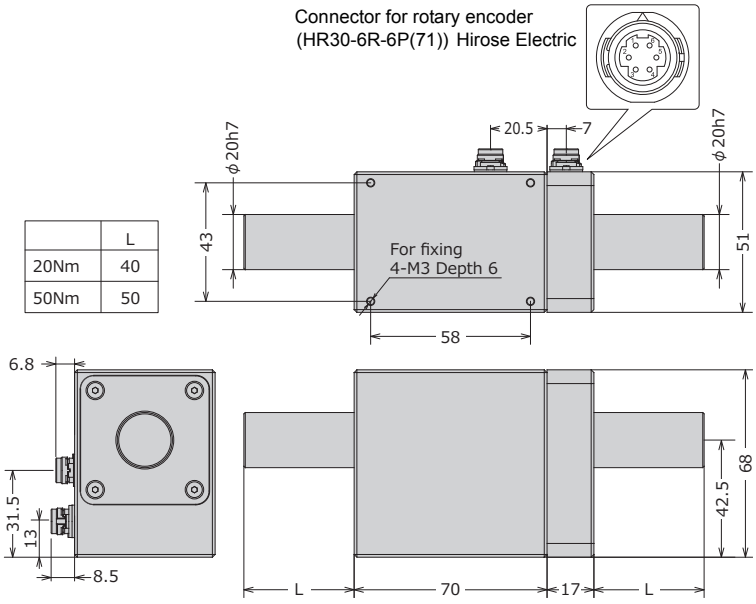


	ϕH	L
0.05Nm 0.1Nm 0.2Nm	ϕ5h7	10
0.5Nm 1Nm 2Nm	ϕ8h7	15

■ UTMⅡ-5Nm(R)/10Nm(R)



■ UTMⅡ-20Nm(R)/50Nm(R)



	L
20Nm	40
50Nm	50

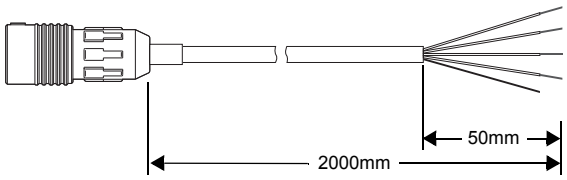
3. Specification (rotary encoder option part)

Power supply input	DC5V±10%
Consumption current	30mA or less (No-load)
Type	Incremental
Pulse per revolution	2000 ppr (0.05Nm, 0.1Nm, 0.2Nm, 0.5Nm, 1Nm, 2Nm, 5Nm, 10Nm) 1440 ppr (20Nm, 50Nm)
Pulse output	Square wave, NPN open collector (Withstand voltage 30V)
Output capacity	Sink current 30mA、Residual voltage 0.5V or less (at 10mA)
Output phase	A, B, Z phase
Difference in output phase	Phase difference of A and B 90°
Max. response frequency	Above 150kHz (0.05Nm, 0.1Nm, 0.2Nm, 0.5Nm, 1Nm, 2Nm, 5Nm, 10Nm) 50kHz (20Nm, 50Nm)
Allowable maximum speed	10000rpm ＊1

＊1） Please do NOT exceed indicated maximum operating RPM.
Since the maximum frequency response of the encoder is 150kHz (20/50Nm: 50kHz), the maximum measurable rotation speed is 4500rpm (20/50Nm: 2000rpm).
Also, please check maximum input frequency of measuring device or indicator.
In case the product is used with TM500, measurable rotation speed is 1500rpm (20/50Nm: 2000rpm) at the most (TM500's upper limit for pulse input frequency is 50kHz.)

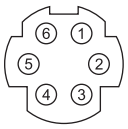
4. Attached cable

Waterproof connector (plug)
HR30-6P-6S（71）Hirose Electric

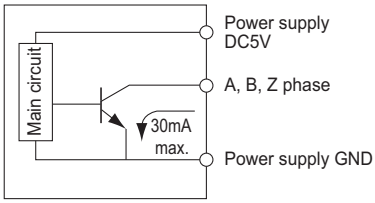


A group of 5 bare cables including shield（L = 2m）
The cable core is equivalent to AWG26

Connector pin assignments

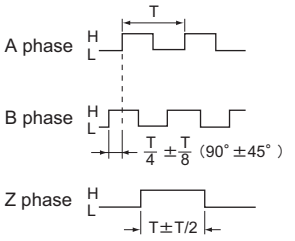
Pin arrangement	Pin No.	Cable color	Function
	1	—	NC
	2	Red	PWR（＋5V）
	3	Transparent	Z phase output
	4	Black	B phase output
	5	Blue	A phase output
	6	Shield（green）	PWR GND

5. I/O circuit diagram

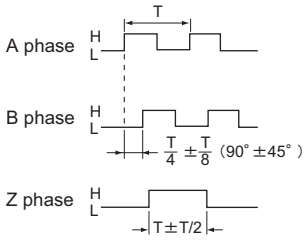


6. Output waveform

Clockwise Rotation (viewing from drive side)



Counter-Clockwise Rotation (viewing from drive side)



Unipulse Corporation

9-11 Nihonbashi Hisamatsu-cho, Chuo-ku, Tokyo 103-0005
Tel. +81-3-3639-6120 Fax: +81-3-3639-6130