

# **PENTAX** | Total Surveying Solutions **R-2800N Series**

R-2801N | R-2802N | R-2803N | R-2805N

- + Long EDM range:  
reflectorless up to 800 m  
and in prism mode up to 3,000 m
- + Large internal memory:  
60,000 points
- + Dual display
- + Easy transfer to a PC via SD card,  
USB mini and RS-232C data port
- + Pre-loaded versatile  
software functions
- + Dual battery system  
for long time use
- + Bluetooth Class1  
Long Link: 100 m



TI Asahi Co.,Ltd  
**Aiming at the future together!**

# TOTAL STATION SPECIFICATIONS

Model		R-2801N	R-2802N	R-2803N	R-2805N	
<b>Telescope</b>	Image			Erect		
	Magnification			30 x		
	Effective Aperture			45 mm		
	Resolving Power			3.0"		
	Field of View			1°25'		
	Minimum Focus			1.0 m		
	Focus			Manual		
	Laser Class		Visible Laser: Class IIIa (Reflectorless, sheet) / Class I (Prism)			
	<b>Measurement Range</b>	<b>(Good condition) *3</b>				
		Reflectorless *1			1.5 m ~ 800 m	
Reflector Sheet *2				1.5 m ~ 800 m		
Mini Prism				1.5 m ~ 800 m		
1P				1.5 m ~ 3,000 m		
3P				1.5 m ~ 4,000 m		
<b>Accuracy</b>	Prism			± (2 + 2 ppm x D) mm		
	Reflector Sheet			± (3 + 2 ppm x D) mm		
	Reflectorless			2.0 m ~ 200 m: ± (3 + 2 ppm x D) mm		
				200 m ~ 300 m: ± (5 + 2 ppm x D) mm		
				300 m ~ 500 m: ± (10 + 2 ppm x D) mm		
			500 m ~ 800 m: ± (20 + 10 ppm x D) mm			
<b>Measurement Time *4</b>	Minimum Count		0.1 mm (Fine mode), 1 mm (Normal mode), 10 mm (Track mode)			
	Repeat Meas.	Fine (0.1 mm)	Prism / Ref. Sheet 3.0 sec., Ref. less 3.0 sec. (over 300 m 5.0 sec.)			
		Normal (1 mm)	Prism / Ref. Sheet 2.0 sec., Ref. less 2.0 sec. (over 300 m 4.0 sec.)			
	Initial Meas.	Track (10 mm)	Prism / Ref. Sheet 0.4 sec., Ref. less 0.4 sec. (over 300 m 0.4 sec.)			
		Fine (0.1 mm)	1.5 ~ 300 m 3.5 sec., over 300 m ~ 13 sec.			
		Normal (1 mm)	1.5 ~ 300 m 2.4 sec., over 300 m ~ 12 sec.			
<b>Angle Measurement</b>	Measuring Method		Absolute rotary encoder			
	Detection Method		Vertical / Horizontal angle			
			2 sides			
	Minimum Count		1" / 5"			
	Accuracy (ISO17123-3)		1"	2"	3"	5"
<b>Compensator</b>			2 axis			
<b>Compensator Range</b>			3' 30"			
<b>Tangent Screw</b>			1 Speed / Clamping (< 30")			
<b>Sensitivity of Vials</b>	Plate Level		30"/1 div. (electrical)			
	Circular Level		8/2 mm			
<b>Plummet</b>			Visible Laser, ± 0.5 mm (instrument height 1.5 m)			
<b>Base</b>			Detachable			
<b>Dust and Water Protection</b>			IP55 (instrument only)			
<b>Ambient Temperature</b>			-20°C ~ 50°C / -4°F ~ 122°F (Working range)			
<b>Tripod Thread</b>			5/8" x 11			
<b>Dimensions/Weight</b>	Dimensions		183 (W) x 342 (H) x 167 (L) mm			
	Weight (incl. Battery)		5.4 kg			
<b>Carrying Case</b>			440 (W) x 370 (H) x 275 (L) mm / 3.9 kg			
<b>Battery Pack</b>	Power Source		Li-ion 3,350 mAh x 2 = 6,700 mAh (hotswap)			
	Operation Time		Continuous approx. 8 hrs (ETH+EDM) with approx. 2.5 hrs of charging time			
	Weight		5,400 g			
<b>Battery Charger and AC Adapter</b>	Input Voltage (AC05)		AC 100 ~ 240V			
	Output Voltage (BC05)		DC8.4V			
<b>Data Process</b>	Data Recording Method		Internal Memory			
	Capacity / Coordinates Data		Up to 2GB / 60,000			
	Special Function		PowerTopoExpress 2			
	I/F		RS-232C, SD CARD, USB mini, Bluetooth (Class1)			
<b>Display / Keyboard</b>	Display Type		Graphic LCD / 20 characters x 8 lines / 240 x 96 pixels			
	Quantity		2			
	Keys		22 each (12 numeric / 5 function / 5 special)			
<b>Display Back Light</b>			Intensity settings: 10 steps			
<b>Laser Pointer</b>			Yes			
<b>Date Clock</b>			Yes			

\*1 The measurement range and accuracy of reflectorless, and time required to measure may vary by the shape, size of surface area and reflection rate of the target and its environment.

The measurement range of reflectorless is determined by the white side of the Kodak Gray Card.

\*2 Reflector sheet: Genuine Reflector sheet

\*3 The measurement range may vary by conditions of the environment.

Normal conditions: 20km visibility with slight shimmer

Good conditions: 40km visibility with overcast, no heat, no shimmer and moderate wind.

\*4 EDM measuring time is determined in good conditions. It may takes longer than usual to measure the distance exceeding 4000m in prism mode and 300m in reflectorless mode.

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