

POWER STATION THERMOCOUPLE / THERMAL RESISTANCE SERIES

Application

The series is especially designed for power station to satisfy temperature measuring of 300,000KW / 600,000KW generator set and auxiliaries. Capable to directly measure temperature of $-200\sim+800^{\circ}\text{C}$ of liquid, steam, gas and solid, etc.

Operation Theory

1. Thermocouple

The electrodes are made of different kinds of material. When temperature difference occurs between measuring end and reference end, thermal EMF appears, then display instrument indicates temperature value relative to thermal EMF.

2. Resistance

Thermal resistance measure temperature according to temperature changing characteristic of medium. When resistance value changes, temperature value relative to resistance value is indicated on display instrument.

Measuring Range and Tolerance

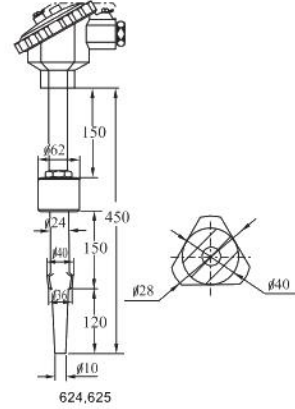
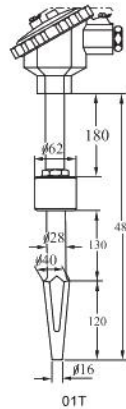
1. Thermocouple

Model	Graduation	Tolerance			
		I		II	
		Value	Measuring Range $^{\circ}\text{C}$	Value	Measuring Range $^{\circ}\text{C}$
CMWRN	K	$\pm 1.5^{\circ}\text{C}$	$-40\sim+375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim+333$
		$\pm 0.004 t $	$375\sim 1000$	$\pm 0.0075 t $	$333\sim 1200$
CMWRM	E	$\pm 1.5^{\circ}\text{C}$	$-40\sim+375$	$\pm 2.5^{\circ}\text{C}$	$-40\sim+333$
		$\pm 0.004 t $	$375\sim 1000$	$\pm 0.0075 t $	$333\sim 1200$

2. Thermal Resistance

Model	Graduation	Measuring Range $^{\circ}\text{C}$	Accuracy	Tolerance
CMWZP	Pt100	$-200\sim+500$	A	$\pm(0.15+0.002 t)$
			B	$\pm(0.30+0.005 t)$
CMWZC	Cu50 Cu100	$-50\sim+100$	---	$\pm(0.30+0.005 t)$

Models with Shrinkage Fit



The series is suitable for steam pipe, boiler and other occasion which has certain requirement for temperature, pressure and flow speed.

Technical Reference

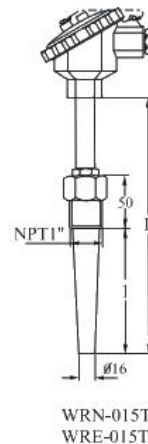
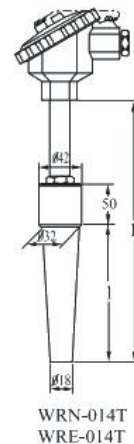
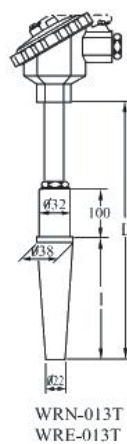
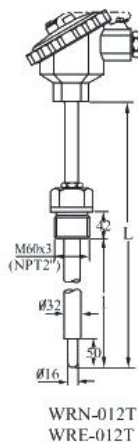
Electric Outlet: M20×1.5 / NPT1/2

Connection Size: M20×1.5 / NPT1/2

Protection: IP65

Models and Specification

Model	Graduation	Measuring Range °C	Pressure	Flow Speed	Remark
CMWRN-01T	K	0~800	≤30Mpa	≤100ms	-
CMWRE-01T	E	0~600			
CMWZP-01T	Pt100	-200~+500			
CMWRN-624	K	0~800	≤30Mpa	≤80ms	Insulation type
CMWRE-624	E	0~600			
CMWZP-624	Pt100	-200~+500			
CMWRN-625	K	0~800			Shell-connecting type
CMWRE-625	E	0~600			

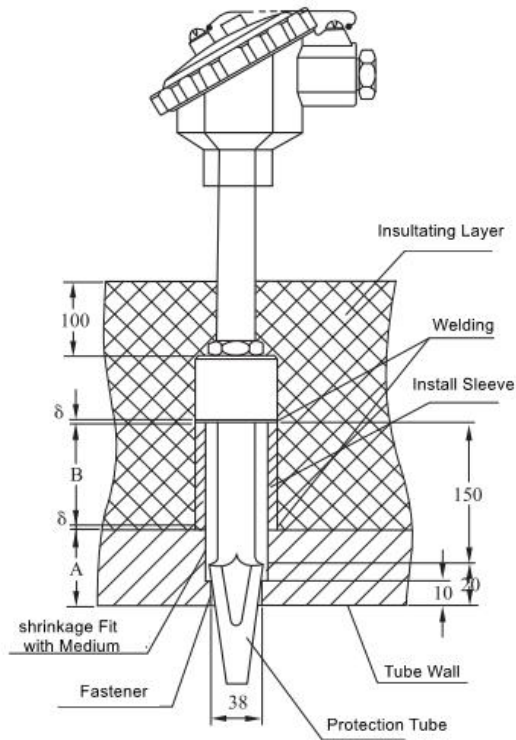




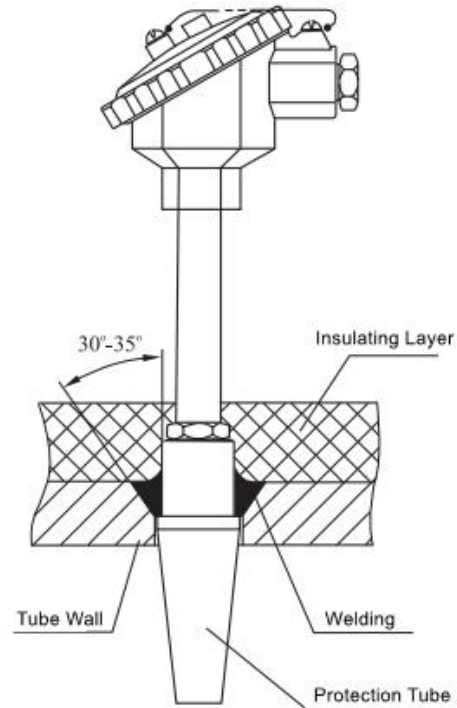
Xi'an CAMON Automatic Instruments Co.,Ltd

Model	Graduation	Measuring Range℃	Pressure	Flow Speed	Specification L×1
CMWRN-012T	K	0~800	≤10Mpa	---	400×230 640×430 840×630 1340×1130 2500×1200 3000×1500 3500×1700
CMWRE-012T	E	0~600			
CMWZP-012T	Pt100	-200~+500			
CMWRN-12AT	K	0~800			
CMWRE-12AT	E	0~600			
CMWZP-12AT	Pt100	-200~+500			
CMWRN-013T	K	0~800	≤30Mpa	≤100ms	380×50 430×100 430×150
CMWRE-013T	E	0~600			
CMWZP-013T	Pt100	-200~+500			
CMWRN-014T	K	0~800	≤10Mpa	≤80ms	280×50 330×100 380×150 430×200 480×250 530×300
CMWRE-014T	E	0~600			
CMWZP-014T	Pt100	-200~+500			
CMWRN-015T	K	0~800		---	280×50 330×100 380×150 430×200 480×250 530×300 580×350 630×400
CMWRE-015T	E	0~600			
CMWZP-015T	Pt100	-200~+500			

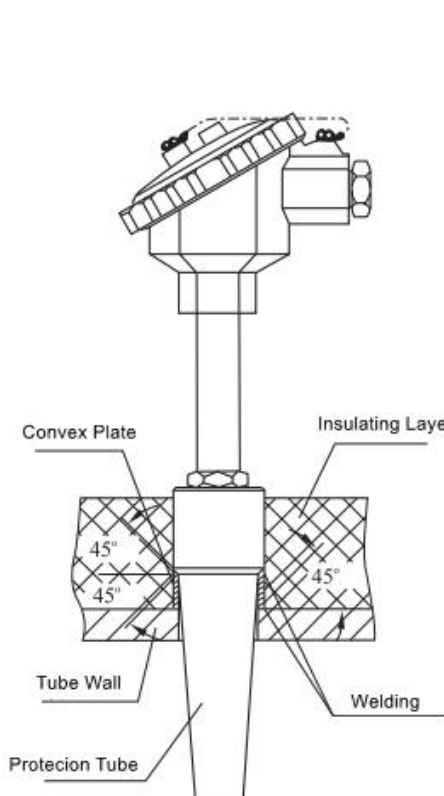
Mounting Figure



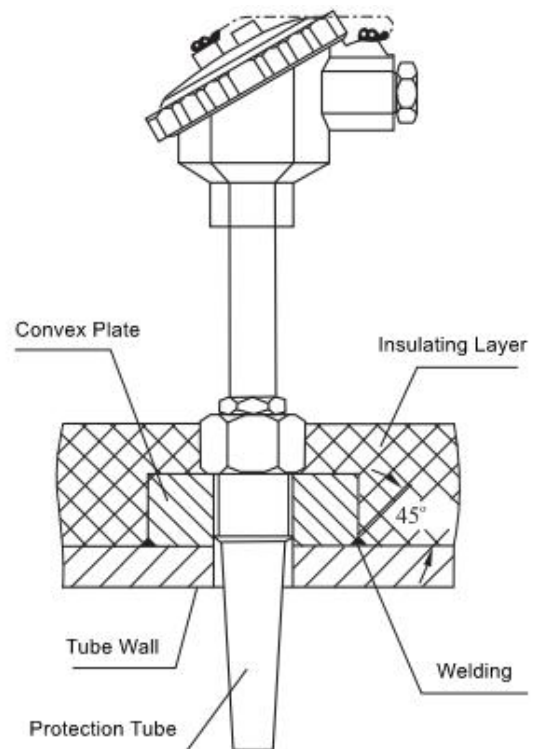
01T



013T

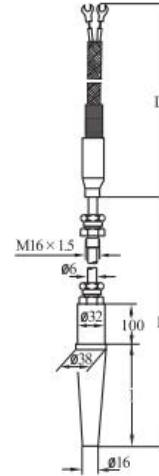
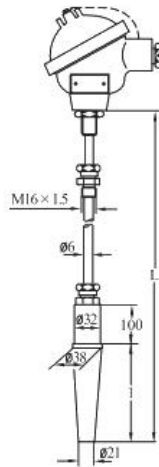


014T



015T

Models of Boiler Top



The series is suitable for using on boiler top of power station and other occasions require long distance and high voltage.

Technical Reference

Electric Outlet: M16×1.5

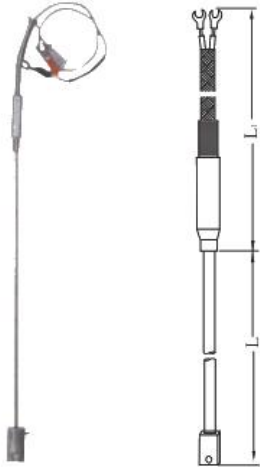
Connection Size: M16×1.5

Protection: IP65

Models and Specification

Model	Graduation	Measuring Range ℃	Pressure	Flow Speed	Specification	
					L	I
CMWRNK-0313T	K	0~800	≤30Mpa	≤100ms	1000	50 100 150
CMWREK-0313T	E	0~600			2000	
CMWRNK-0913T	K	0~800			3000	
CMWREK-0313T	E	0~600			4000	
					5000	
					8000	
					10000	
					15000	
					20000	
					25000	

Models of Boiler Wall



Application

Suitable for measuring temperature of boiler wall, pipe wall or other cylinder' s surface.

Main Parameter

Accuracy: I, II

Pressure: normal pressure

Bending Radius: $R \geq 5D$

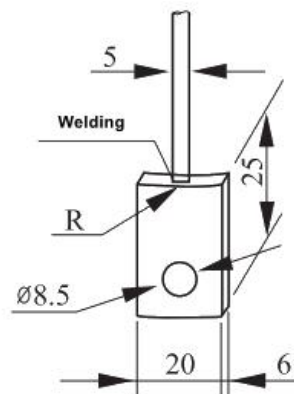
Models and Specifications

Model	Graduation	Measuring Range °C	Measuring End	Specification	
				L	L1
CMWRNK-191M	K	0~800	Insulation type	1000	1000
CMWREK-191M	E	0~600		2000	2000
				3000	3000
				4000	4000
				5000	5000
6000	6000	Shell-connecting type	8000	8000	
CMWRNK-192M	K		0~800	10000	10000
CMWREK-192M	E		0~600	15000	15000
				20000	20000
				25000	25000

Mounting and Size

Directly welded on boiler wall.

Fastened by screw M8.



Please indicates the size of "R" when ordering.

Models of Bearing Thermocouple

Application

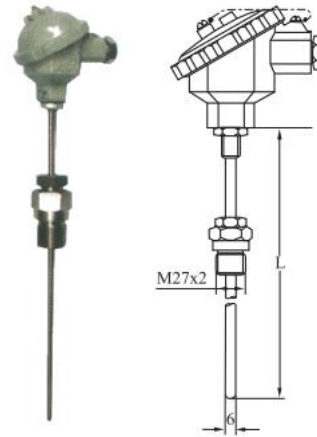
Suitable for temperature measuring of equipment with bearing or other occasions demands shock-proof.

Main Parameter

Electric Outlet: M16×1.5

Connection Size: M27×2

Protection: IP65



Model	Graduation	Measuring Range °C	Flow Speed	Specification	
				L	I
CMWRNT-31	K	0~300	≤100ms	100	100
CMWRET-31	E			150	150
				200	200
				250	250
CMWZPT-31	Pt100	0~100	≤6ms	300	300

Models of End Thermal Resistance

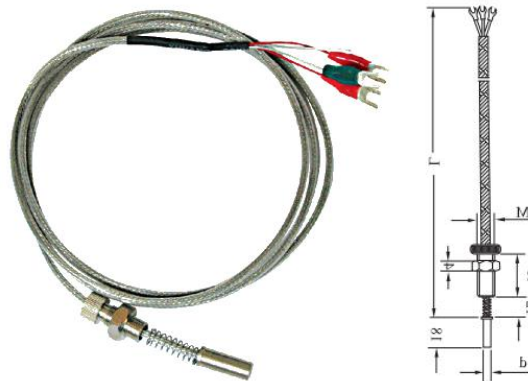
Application

Suitable for temperature measuring of turbine, motor bearing shells or other equipment.

Main Parameter

Accuracy: A,B

Pressure: rmal pressure



Model	Graduation	Measuring Range °C	Flow Speed	Specification		L
				d	M	
CMWZCM-201	Cu50 Cu100	0~100	≤100ms	Φ6	M8×0.75	500
						1000
						1500
CMWZPM-201	Pt100	-150~+200	≤6ms	Φ8.5	M10×1	2000
						2500

Wear-resistance Thermocouple

Application

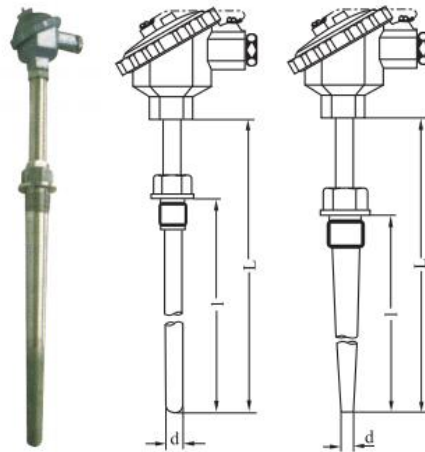
Suitable for temperature measuring of easy wearing part of ball grinding mill and coal mill, etc.

Main Parameter

Electric Outlet: M20×1.5, NPT1/2

Wearing-resistance Head Hardness: HRC62~65

Protection: IP65



Model	Graduation	Measuring Range °C	Pressure	Flow Speed	Specification	
					d	L×1
CMWRNN-230	K	0~800	≤10Mpa	≤100ms	Φ 16	300×150
CMWREN-230	E	0~600				350×200
CMWZPN-230	Pt100	-200~+500				400×250
CMWRNN-630	K	0~800	≤30Mpa	≤80ms	Φ 15	450×300
CMWREN-630	E	0~600				500×350
CMWZPN-630	Pt100	-200~+500				550×400
						650×500
						900×750
						1150×1000