

E52-E

The E52-E PT100 and thermocouples provide accurate temperature sensing for standard as well as challenging environments, special applications and special mounting requirements. The E52-E series is optimized to work with the range of E5 temperature controllers.

- Thermocouples and PT100 elements
- Wide range of housing, mounting and connection options
- Best performance match with E5 temperature controller portfolio
- Line up for best fitting application performance



Ordering information

Line	Shape type ¹⁾	Type			Temperature range		Sensing tube			Connection			Order code												
		Series	Tech-nology	Sub-type	Min [°C]	Max [°C]	Diameter [mm]	Length [mm]	Material	Type	Fixing	Length [m]													
PRO	smooth tube		Thermo-couple	T	-80	400	3	100	SUS 316	2-wire	pre-wired with cable end shoes	2	E52-ETT3-100-2-A												
							6						E52-ETT6-100-2-A												
							1						E52-ETJ1-100-2-A												
					2	E52-ETJ2-100-2-A																			
					3	E52-ETJ3-100-2-A																			
					4.5	E52-ETJ4.5-100-2-A																			
				6	E52-ETJ6-100-2-A																				
				LITE				J	0				400	4	100	SUS 304				E52-ELTJ4-100-2-A					
														5						E52-ELTJ5-100-2-A					
														6						E52-ELTJ6-100-2-A					
														8						E52-ELTJ8-100-2-A					
														PRO									K	-80	1100
2	E52-ETK2-100-2-A																								
3	E52-ETK3-100-2-A																								
4.5	E52-ETK4.5-100-2-A																								
6	E52-ETK6-100-2-A																								
8	E52-ETK8-100-2-A																								
LITE				K	0	400	4	100	SUS 304				E52-ELTK4-100-2-A												
							5						E52-ELTK5-100-2-A												
							6						E52-ELTK6-100-2-A												
							8						E52-ELTK8-100-2-A												
							PRO						smooth tube		PT100	class B	-50	500	3	100	SUS 316	3-wire	pre-wired with open cable ends		E52-EP3-250-2-B
																			4						E52-EP6-250-2-B
5	E52-ELP4-50-2-A																								
6	E52-ELP5-100-2-A																								
LITE					0	400	6	100	SUS 304		pre-wired with cable end shoes		E52-ELP6-100-2-A												
							8						E52-ELP8-100-2-A												
							PRO						bajonet mounting		Thermo-couple	J	-50	400	6	35	SUS 316		pre-wired with open cable ends		E52-EP6-35-2-BG1/4G-B
																			6						E52-ETJ6-15-2-BG1/4G-B
PRO	enclosed terminals, smooth tube		Thermo-couple	K	0	1150	6	200	INCONEL 600	2-wire	enclosed screw terminals		E52-ETK6-200-T2-B												
							6						E52-ETJ6-200-T2-B												
				PT100	class B	-50	500	6	200				SUS 316						E52-EP6-200-T2-B						

¹⁾ See Dimensions on page 3

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 Пермь (342)205-81-47
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 Рязань (4912)46-61-64
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 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
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 Тула (4872)74-02-29
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 Ульяновск (8422)24-23-59
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 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47

Казахстан (772)734-952-31

Таджикистан (992)427-82-92-69

Line	Shape type ¹	Type			Temperature range		Sensing tube			Connection			Order code	
		Series	Tech-nology	Sub-type	Min [°C]	Max [°C]	Diameter [mm]	Length [mm]	Material	Type	Fixing	Length [m]		
PRO		enclosed terminals, G1/2" g mounting	Thermo-couple	K	0	1150	6	200	INCONEL 600	2-wire			E52-ETK6-200-T2-CG1/2G-B	
				J		720	6	200					E52-ETJ6-200-T2-CG1/2G-B	
		enclosed terminals; Clamp mounting 1.5"	PT100	class B	-50	200	500	6	200	SUS 316	3-wire	enclosed screw terminals	-	E52-EP6-100-T2-CC1.5-B
							6	100	E52-EP6-100-T2-CC2-B					
PRO plus		Surface temperature	Thermo-couple	J	0	250	10	dia 4 mm screw hole	Cu (tin plated)	2-wire	pre-wired with open cable ends	2	E52-ETJS1-B	
		Environmental temperature	PT100	class B	-40	80	-	-	Aluminium	3-wire	enclosed screw terminals	-	E52-EPE1-B	
						80	-	-	PVC				E52-EPE2-B	
		Non-contact	Infrared sensor	up to Sn = 60 mm	10	260	M18	44.5	ABS	4-wire	pre-wired with open cable ends	3	E51B	
					up to Sn = 1 m	0	400	M18	120	SUS 304			5-wire	2

¹ See Dimensions on page 3

Note: Models with tube diameters of 2 inches, 3 inches and 4 inches are available. Refer to the separate E52 Inch Temperature Sensor Datasheet.

Accessories

Type	Temperature range		Size	Length	Material	Order code
	Min [°C]	Max [°C]				
Compression fitting	RC 1/2	-200	800	6	AISI 316	E52-EACF1/2-6-B
				8		E52-EACF1/2-8-B
	RC 1/4			6		E52-EACF1/4-6-B
				8		E52-EACF1/4-8-B
	M20x1.5			6		E52-EACFM20-6-B
				8		E52-EACFM20-8-B
Compensation cable	Thermocouple	-40	200	n.a.	Silicone rubber	E52-EACW-K1-B
				K		1
	J	1	E52-EACW-J1-B			
		25	E52-EACW-J25-B			
Compensation connector	male	-50	120		Thermoplastic	E52-EACC-JM1-B
	female					E52-EACC-JF1-B
	male	K	E52-EACC-KM1-B			
	female		E52-EACC-KF1-B			
Thermo well ¹	G1/2 gas	-200	800	6 (for 3)	AISI 316	E52-EATW1/2G-6-3-150-B
				10 (for 6)		E52-EATW1/2G-10-6-150-B
				12 (for 8)		E52-EATW1/2G-12-8-150-B
Signal converters (for enclosed terminal type)	DIGITAL	Pt100				E52-EASCP1-B
		K				E52-EASCK1-B
		J				E52-EASJ1-B

¹ Thermo wells with different tube lengths and diameters are available. For solutions with matching pairs of temperature sensors and thermowells with fitting screw connections, contact your Omron representative.

Options (available on request)

1) Sensing head variations

- tip shapes
- lengths please specify required length
- diameters please specify required diameter (metric or inch)

2) Mounting variations

- thermowell (different process side thread and well fittings)
- bajonet (different process side thread and bajonet fittings)
- thread (different sizes and types (metric, inch))

3) Connection variations

- pre-wired length please specify length
material (fiberglass, silicone, PTFE, PVC)
colour codings (refer to page 5)
ends (open, cable shoes, cable clamps)
- Terminals open
enclosed

4) Special types

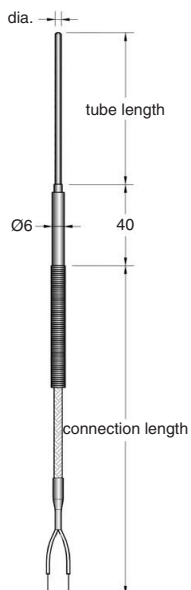
Please contact your OMRON representative for special applications e.g. surface temperature measurement, for hygienic environments, special shapes, mountings, materials, etc.

Dimensions

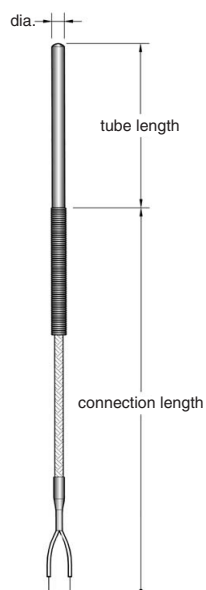
(Detailed dimension drawings are available for each model on request)

Smooth tube types (thermocouples T, J and K and PT100)

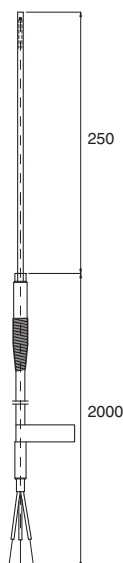
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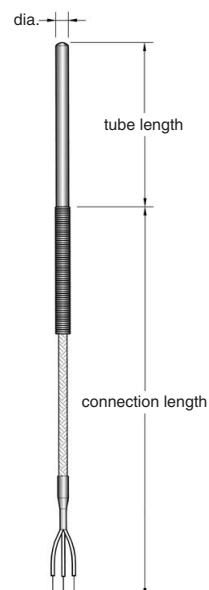
E52-ELT_



E52-EP_

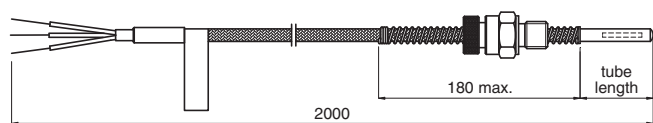


E52-ELP_



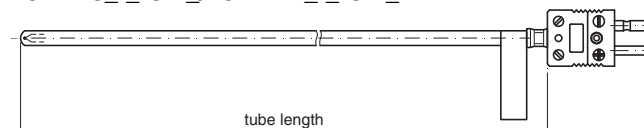
Bayonet mounting types (PT100)

E52-EP6-_-2-B-_-



Compensation connector 1 types (thermocouples J and K)

E52-ETJ-_-C1-_/E52-ETK-_-C1-_-

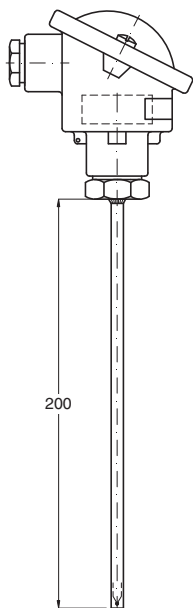


Note: compatible with female connectors E52-EACC-JF1-_/E52-EACC-KF1-_-

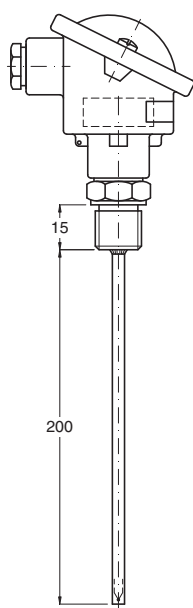
Enclosed terminal types (thermocouples J and K and PT100)

E52-E-_-T2-_-

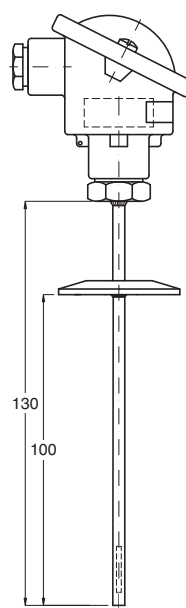
Smooth tube



G $\frac{1}{2}$ " mounting

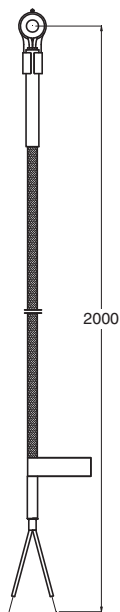


Clamp mounting

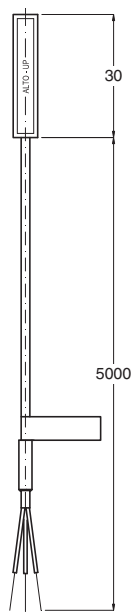


Surface temperature measurement types

E52-ETJS1-B

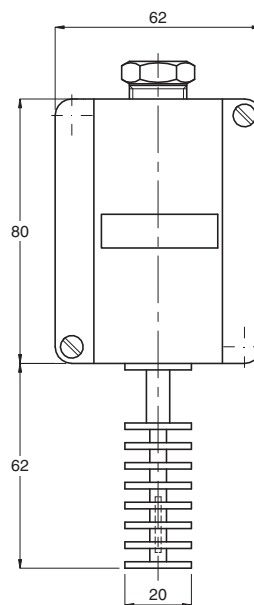


E52-ESTPCPAN_

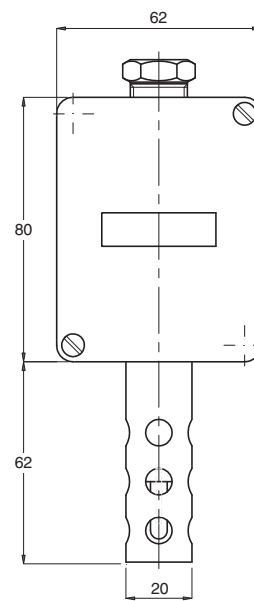


Environment temperature measurement types

E52-EPE1-B

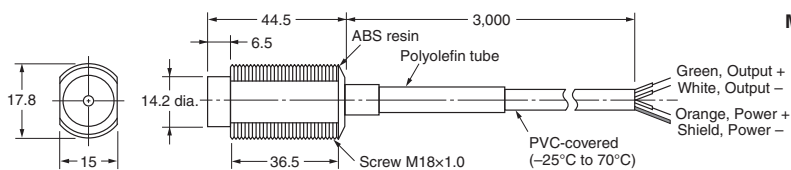
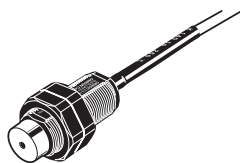


E52-EPE2-B

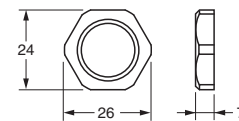


Non-contact – Infrared sensor types

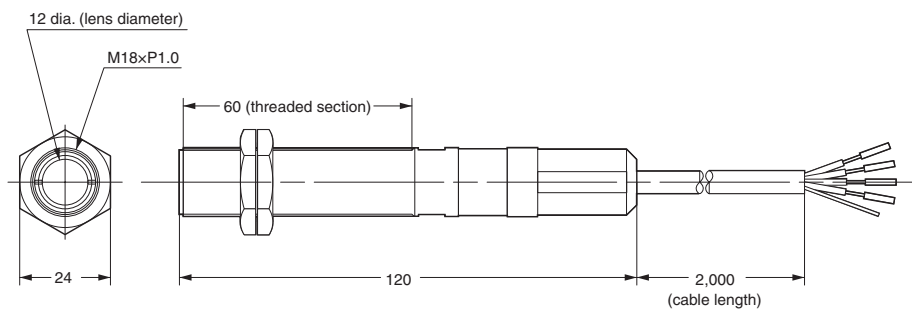
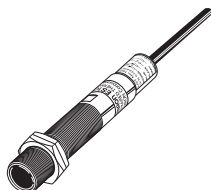
ES1B



Mounting Lock Nuts (Two) (Provided)



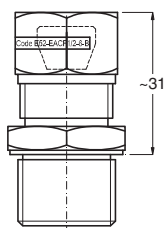
ES1C



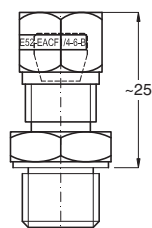
Accessories

Compression fittings

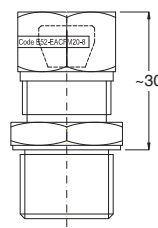
E52-EACF1/2_



E52-EACF1/4_

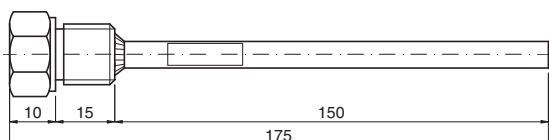


E52-EACFM20



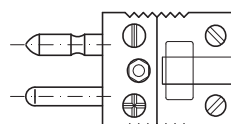
Thermowells

E52-EATW_

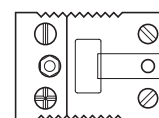


Compensation connectors

E52-EACC- M _-






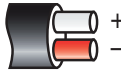
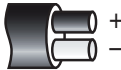
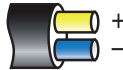
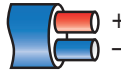
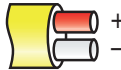


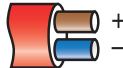



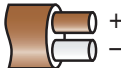

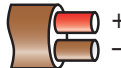



E52-EACC- F _-



Colour codings of compensation cables

(unless otherwise specified the colour coding for sensors is according to IEC 584-3)

	ANSI MC96.1	IEC 584-3	BS 1843	DIN 43714	JIS C1610
Thermocouple type					
J, L					
K					
T					

PT100 reference table temperature – resistance (EN 60751)

°C	0	-10	-20	-30	-40	-50	-60	-70	-80	-90
	Ohm									
-200	18.49	14.45	10.49	6.99	4.26	2.51				
-100	60.26	56.19	52.11	48.00	43.88	39.72	35.54	31.34	27.10	22.83
0	100.00	96.09	92.16	88.22	84.27	80.31	76.33	72.33	68.33	64.30

°C	0	10	20	30	40	50	60	70	80	90
	Ohm									
0	100.00	103.90	107.79	111.67	115.54	119.40	123.24	127.08	130.90	134.71
100	138.51	142.29	146.07	149.83	153.58	157.33	161.05	164.77	168.48	172.17
200	175.86	179.53	183.19	186.84	190.47	194.10	197.71	201.31	204.90	208.48
300	212.05	215.61	219.15	222.68	226.21	229.72	233.21	236.70	240.18	243.64
400	247.09	250.53	253.96	257.38	260.78	264.18	267.56	270.93	274.29	277.64
500	280.98	284.30	287.62	290.92	294.21	297.49	300.75	304.01	307.25	310.49
600	313.71	316.92	320.12	323.30	326.48	329.64	332.79	335.93	339.06	342.18
700	345.28	348.38	351.46	354.53	357.59	360.64	363.67	366.70	369.71	372.71
800	375.70	378.68	381.65	384.60	387.55	390.48				

PT 100 tolerance class definition

Tolerance class	Temperature range of validity [°C]		Tolerance values [°C]
	Wire wound resistors	Film resistors	
AA	-50 ÷ +250	0 ÷ +150	± (0,1 + 0,0017 × t)
A	-100 ÷ +450	-30 ÷ +300	± (0,15 + 0,002 × t)
B	-196 ÷ +600	-50 ÷ +500	± (0,3 + 0,005 × t)
C	-196 ÷ +600	-50 ÷ +600	± (0,6 + 0,01 × t)

IP rating

Type	Order code	IP rating (IEC 60529)
Smooth tube type PRO	E52-ETT_-A	IP45 (IP65 ¹) (IP67, IP68 ²)
	E52-ETJ_-A	
	E52-ETK_-A	IP67, IP68
	E52-EP_-B	
Smooth tube type LITE	E52ELTJ_-A	IP45
	E52-ELTK_-A	
	E52-ELP_-A	
Bayonet mounting	E52-E_-B_-B	IP67, IP68 Tube
Enclosed terminals	E52-E_-T2-B	IP68 Tube IP66 Terminal head

Type	Order code	IP rating (IEC 60529)
Surface temperature	E52-ET_S_-B	IP44
Environmental temperature	E52-EPE_-B	IP66
Contact free	ES1B	IP65
	ES1C	IP67

¹ Models with fluoro polymere outer cable sheath and IP65 rating are available. Contact your Omron representative

² Models with IP67, IP68 protective structure are available. Contact your Omron representative.

По вопросам продаж и поддержки обращайтесь:

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Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
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