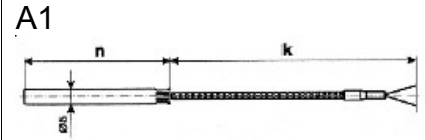


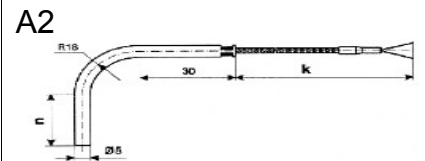
TEMPERATURE SENSORS AND TRANSMITTERS

TEMPERATURE SENSORS

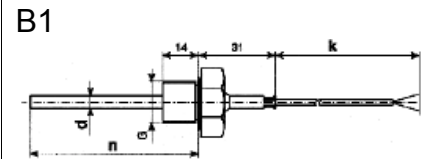
PROBE WITHOUT MOUNTING APPLIANCES	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t2 0 ... 200°C</i>	<i>n = 30, 50, 100,</i> <i>150, 200, 300 mm</i>
<i>Cable</i> – Heat-resistant, metal PWM – Heat-resistant, silikon insulation – With PVC insulation	<i>2R – 2 x Pt100</i> <i>DIN IEC 751</i>	<i>t3 –50 ... 200°C</i> <i>t4 0 ... 400°C</i>	<i>Other dimensions are possible too</i>
	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	
	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	



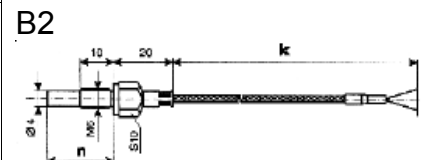
ANGLE-TYPE BODY PROBE WITHOUT MOUNTING APPLIANCES	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t2 0 ... 200°C</i>	<i>n = 30, 50, 100,</i> <i>150, 200, 300 mm</i>
<i>Cable</i> – Heat-resistant, metal PWM – Heat-resistant, silikon insulation – With PVC insulation	<i>2R – 2 x Pt100</i> <i>DIN IEC 751</i>	<i>t3 –50 ... 200°C</i> <i>t4 0 ... 400°C</i>	<i>Other dimensions are possible too</i>
	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	
	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	



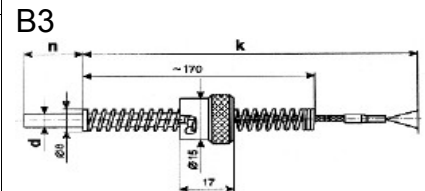
MOISTURE-PROOF SCREW-IN TYPE PROBE	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t2 0 ... 200°C</i>	<i>n = 30, 50, 100,</i> <i>150, 200, 300 mm</i>
<i>Cable</i> – Heat-resistant, metal PWM – Heat-resistant, silikon insulation – With PVC insulation	<i>2R – 2 x Pt100</i> <i>DIN IEC 751</i>	<i>t3 –50 ... 200°C</i> <i>t4 0 ... 400°C</i>	<i>Other dimensions are possible too</i>
	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	
	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	



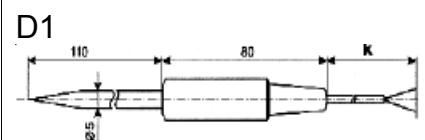
PROBE FOR LIQUID MEDIA	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t2 0 ... 200°C</i>	<i>n = 12 ... 40 mm</i>
<i>Cable</i> – Heat-resistant, metal PWM – Heat-resistant, silikon insulation – With PVC insulation	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t3 –50 ... 200°C</i> <i>t4 0 ... 400°C</i>	<i>Other dimensions are possible too</i>
	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	

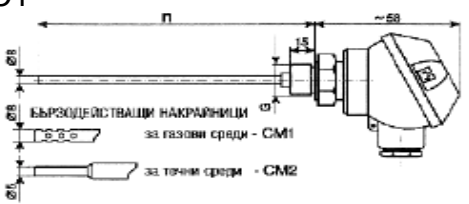
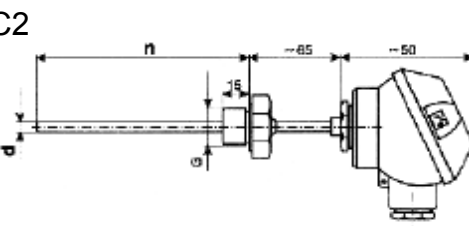
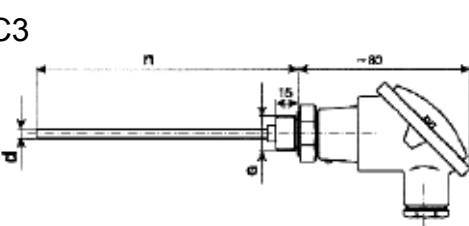
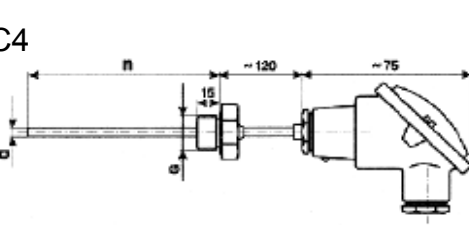
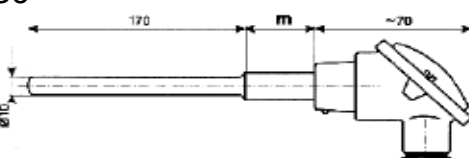
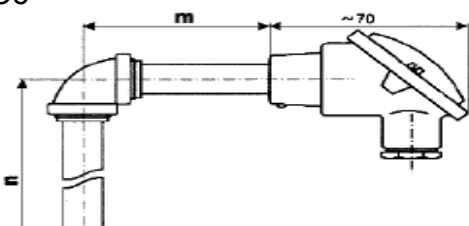


BAYONET-TYPE PROBE	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t2 0 ... 200°C</i>	<i>n = 12 ... 40 mm</i>
<i>Cable</i> – Heat-resistant, metal PWM – Heat-resistant, silikon insulation – With PVC insulation	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t3 –50 ... 200°C</i> <i>t4 0 ... 400°C</i>	<i>Other dimensions are possible too</i>
	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	

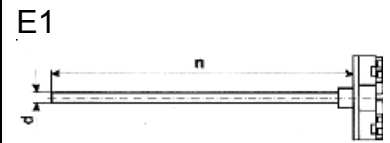


NEEDLE PROBE WITH HANDLE	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS
<i>Body</i> – stainless steel Nr.1.4571	<i>R – 1 x Pt100</i> <i>DIN IEC 751</i>	<i>t1 0 ... 60°C</i> <i>t3 –50 ... 200°C</i>	<i>K = max 6000 mm</i>
<i>Cable</i> – Heat-resistant, silikon insulation – With PVC insulation	<i>J – Fe-CuNi</i> <i>DIN IEC 584</i>	<i>t4 0 ... 400°C</i>	
<i>Handle</i> – plastic material	<i>K – NiCr-Ni</i> <i>DIN IEC 584</i>	<i>t1 0 ... 60°C</i> <i>t4 0 ... 400°C</i>	

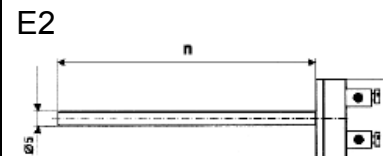


<p>C1</p>  <p> n ~ 58 ~ 15 БЪРЗОДЕЙСТВИИ НАКРАВИНИЦИ за газови среди - SM1 за течни среди - SM2 </p>	<p>PROBE WITH PROTECTION HEAD</p> <p>Body – stainless steel Nr.1.4571</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>R – 1 x Pt100 DIN IEC 751</p> <p>2R–2 x Pt100 DIN IEC 751</p> <p>J – Fe-CuNi DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t1 0 ... 60°C</p> <p>t2 0 ... 200°C</p> <p>t3–50 ... 200°C</p> <p>t4 0 ... 400°C</p> <p>t4 0 ... 400°C</p> <p>t5 0 ... 600°C</p> <p>t4 0 ... 400°C</p> <p>t6 0 ... 1000°C</p>	<p>DIMENSIONS</p> <p>n = 50, 100, 150, 300, 500, 1000, 1500 mm</p> <p>G = 3/8", 1/4", 1/2", 1", M12, M14, M16, M18, M20</p> <p>Other dimensions are possible too</p>
<p>C2</p>  <p> n ~ 65 ~ 50 ~ 15 </p>	<p>PROBE WITH PROTECTION HEAD FOR EXTREME TEMPERATURES</p> <p>Body – stainless steel Nr.1.4571</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>R – 1 x Pt100 DIN IEC 751</p> <p>2R–2 x Pt100 DIN IEC 751</p> <p>J – Fe-CuNi DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t1 0 ... 60°C</p> <p>t2 0 ... 200°C</p> <p>t3–50 ... 200°C</p> <p>t4 0 ... 400°C</p> <p>t4 0 ... 400°C</p> <p>t5 0 ... 600°C</p> <p>t4 0 ... 400°C</p> <p>t6 0 ... 1000°C</p> <p>t7 0 ... 1200°C</p>	<p>DIMENSIONS</p> <p>n = 50, 100, 150, 300, 500, 1000, 1500 mm</p> <p>G = 3/8", 1/4", 1/2", 1", M12, M14, M16, M18, M20</p> <p>Other dimensions are possible too</p>
<p>C3</p>  <p> n ~ 80 ~ 15 </p>	<p>PROBE WITH PROTECTION HEAD AND REPLACEABLE INSERT</p> <p>Body – stainless steel Nr.1.4571</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>R – 1 x Pt100 DIN IEC 751</p> <p>2R–2 x Pt100 DIN IEC 751</p> <p>J – Fe-CuNi DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t1 0 ... 60°C</p> <p>t2 0 ... 200°C</p> <p>t3–50 ... 200°C</p> <p>t4 0 ... 400°C</p> <p>t4 0 ... 400°C</p> <p>t5 0 ... 600°C</p> <p>t4 0 ... 400°C</p> <p>t6 0 ... 1000°C</p> <p>t7 0 ... 1200°C</p>	<p>DIMENSIONS</p> <p>n = 50, 100, 150, 300, 500, 1000, 1500 mm</p> <p>G = 3/8", 1/4", 1/2", 1", M12, M14, M16, M18, M20</p> <p>Other dimensions are possible too</p>
<p>C4</p>  <p> n ~ 120 ~ 75 </p>	<p>PROBE WITH PROTECTION HEAD AND REPLACEABLE INSERT</p> <p>Body – stainless steel Nr.1.4571</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>R – 1 x Pt100 DIN IEC 751</p> <p>2R–2 x Pt100 DIN IEC 751</p> <p>J – Fe-CuNi DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t1 0 ... 60°C</p> <p>t2 0 ... 200°C</p> <p>t3–50 ... 200°C</p> <p>t4 0 ... 400°C</p> <p>t4 0 ... 400°C</p> <p>t5 0 ... 600°C</p> <p>t4 0 ... 400°C</p> <p>t6 0 ... 1000°C</p> <p>t7 0 ... 1200°C</p>	<p>DIMENSIONS</p> <p>n = 50, 100, 150, 300, 500, 1000, 1500 mm</p> <p>G = 3/8", 1/4", 1/2", 1", M12, M14, M16, M18, M20</p> <p>Other dimensions are possible too</p>
<p>C5</p>  <p> 170 m ~ 70 $\varnothing 10$ </p>	<p>PROBE WITH CERAMIC TUBE</p> <p>Body – CER 610 10 x 10,5</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>S – Pt10Rh-Pt DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t7 0 ... 1200°C</p> <p>t8 0 ... 1500°C</p> <p>t7 0 ... 1200°C</p>	<p>DIMENSIONS</p> <p>n = 170, 240 mm</p> <p>d = 10, 14 mm</p> <p>m = 100 ... 1000 mm</p>
<p>C6</p>  <p> m ~ 70 n $\varnothing 20 \times 5$ </p>	<p>ANGLE-TYPE THERMOCOUPLE</p> <p>Body – stainless steel Nr.1.4571</p> <p>Head – Aluminum, IP55</p>	<p>SENSITIVE ELEMENT</p> <p>J – Fe-CuNi DIN IEC 584</p> <p>K – NiCr-Ni DIN IEC 584</p> <p>S – t10Rh-Pt DIN IEC 584</p>	<p>TEMPERATURE RANGE</p> <p>t4 0 ... 400°C</p> <p>t5 0 ... 600°C</p> <p>t4 0 ... 400°C</p> <p>t6 0 ... 1000°C</p> <p>t7 0 ... 1200°C</p> <p>t7 0 ... 1200°C</p> <p>t8 0 ... 1500°C</p>	<p>DIMENSIONS</p> <p>n = 300 ... 1000 mm</p> <p>m = 100 ... 1000mm</p> <p>Other dimensions are possible too</p>

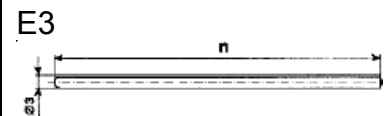
REPLACEBLE INSERT	SENSITIVE ELEMENT	RANGE	SIZE
<i>Body</i> – stainless steel Nr.1.4571 Brass terminals Ceramic tube Al ₂ O ₃	R – 1 x Pt100 DIN IEC 751 2R – 2 x Pt100 DIN IEC 751	t2 0 ... 200°C t3–50 ... 200°C t4 0 ... 400°C	n = 50, 150, 300, 500 mm d = 5, 6, 8, 10 Other dimensions are possible too
	J – Fe-CuNi DIN IEC 584	t4 0 ... 400°C t5 0 ... 600°C	
	K – NiCr-Ni DIN IEC 584	t4 0 ... 400°C t6 0 ... 1000°C	



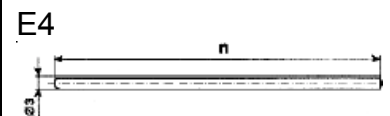
REPLACEBLE INSERT	SENSITIVE ELEMENT	RANGE	SIZE
<i>Body</i> – stainless steel Nr.1.4571 Brass terminals Ceramic tube Al ₂ O ₃	R – 1 x Pt100 DIN IEC 751 2R – 2 x Pt100 DIN IEC 751	t2 0 ... 200°C t3–50 ... 200°C t4 0 ... 400°C	n = 50, 150, 300, 500 mm d = 5, 6, 8 Other dimensions are possible too
	J – Fe-CuNi DIN IEC 584	t4 0 ... 400°C t5 0 ... 600°C	
	K – NiCr-Ni DIN IEC 584	t4 0 ... 400°C t6 0 ... 1000°C	



MANTEL THERMOCOUPLE	SENSITIVE ELEMENT	RANGE	SIZE
<i>Body</i> – stainless steel Nr.1.4571 With mineral isolation	K – NiCr-Ni DIN IEC 584	T9 0 ... 1100°C For air media	n = 50 ... 1500mm Other dimensions are possible too



MANTEL THERMOCOUPLE WITH CABLE	SENSITIVE ELEMENT	RANGE	SIZE
<i>Body</i> – stainless steel Nr.1.4571 With mineral insulation Cable – Heat-resistant, metal overbraided – With PVC isolation	K – NiCr-Ni DIN IEC 584	T9 0 ... 1100°C For air media	n = 12 ... 40 mm Other dimensions are possible too



TWO-WIRE TRANSMITTERS

- √ Two-wire, (loop powered)
- √ High Accuracy
- √ Mounting - protection head, DIN-Rail or on wall

The two-wire transmitters of the MS9004 series, offered by MICROSYST, are designed for distance control of temperature processes. They transmit the signal from the sensor to controllers and indicators, located out of the site.

MS9004 are loop-powered. The output signal is unified current, which guarantees noise-immunity of the long transmitting lines. The connecting cable may be two-wire (is not necessary to be shielded), which reduces the expenses for mounting, especially for further distances. The transmitters may be mounted in the protection head of the temperature sensor, on DIN-Rail or on wall.



MS9004H

MS9004D

MS9004C

<i>Input</i>	RTD - Pt100, Pt1000, Ni100 ..., TC – J, K ...
<i>Range</i>	According to the type of the sensor
<i>Output</i>	Linear current 4 ÷ 20 mA
<i>Length of line</i>	Up to 300 m
<i>Power supply</i>	9 ÷ 36 V DC, loop powered
<i>Body</i>	Mounting in head Ø 45 x 29 mm Mounting DIN - Rail 34 x 85 x 57 mm Mounting on a wall 125 x 85 x 58 mm

COMPENSATION CABLES

STANDART	THERMOCOUPLE LEGEND			THERMOCOUPLE WIRE LEGEND			COLOUR CODES		
	ANSI Code	+ Pol	- Pol	CODE	+ Pol	- Pol	INSIDE	OUTER	
DIN IEC584	T	Cu	CuNi	TX	Cu	CuNi	brown	white	brown
	E	NiCr	CuNi	EX	NiCr	CuNi	violet	white	violet
	J	Fe	CuNi	JX	Fe	CuNi	black	white	black
	K	NiCr	Ni	KX	NiCr	Ni	green	white	green
	K	NiCr	Ni	KC1	Fe	CuNi	green	white	green
	K	NiCr	Ni	KC2	Cu	CuNi	green	white	green
	R/S	Pt13/10Rh	Pt	RC A/SC A	Cu	CuNi	orange	white	orange
	R/S	Pt13/10Rh	Pt	RC B/SC B	Cu	CuNi	orange	white	orange
	N	NiCrosil	NiSi	NC	Cu	CuNi	pink	white	pink
DIN 43710	B	Pt6Rh	Pt6Rh	BC	CuMn	Cu	red	grey	grey
	U	Cu	CuNi	UX	Cu	CuNi	red	brown	brown
	L	Fe	CuNi	LX	Fe	CuNi	red	blue	blue

COMPENSATION CABLE WITH GLASS FIBRE INSULATION TYPE GLGLP oval AND GLGLP

Form	Cross-section 1 wire	Number of wires	Outer diameter Ømm	Weight (kg/m)	Application	
					Electromagnetic interference	Radioactivity
Oval	S 1.5 mm ²	2	3.5 x 5.5	0.055	Mineral oils	•
Oval	Ø 1.38 mm	2	3.3 x 5.1	0.055	Bases	-
Round	S 0.22 mm ²	2	3.6	0.020	Acids	-
Round	S 0.75 mm ²	2	4.5	0.040	Benzol	•
Round	S 1.5 mm ²	4	6.3	0.115	Benzine	•
Round	Ø 1.38 mm	4	5.8	0.115	Water vapour	•
1. Glass insulation 2. Glass braid 3. Steel braid		Insulation temperature range up to 200°C 2 Parallel or 4 twisted wires			Moist media	-
					Dry media	•
					Immovable fixture	+
					Movable fixture	+

COMPENSATION CABLE WITH PVC INSULATION TYPE JJ oval AND JJ

Form	Cross-section 1 wire	Number of wires	Outer diameter Ømm	Weight (kg/m)	Application	
					Electromagnetic interference	Radioactivity
Oval	S 1.5 mm ²	2	4.2 x 6.85	0.065	Mineral oils	•
Oval	Ø 1.38 mm	2	4.0 x 6.4	0.065	Bases	+
Round	S 0.22 mm ²	2	3.6	0.035	Acids	+
Round	S 0.22 mm ²	4	4.1	0.050	Benzol	-
Round	S 1.5 mm ²	2	6.8	0.075	Benzine	+
Round	S 1.5 mm ²	4	7.8	0.120	Water vapour	+
Round	Ø 1.38 mm	2	6.4	0.070	Moist media	+
Round	Ø 1.38 mm	4	7.4	0.115	Dry media	+
1. PVC insulation 2. PVC braid		Insulation temperature range from -10°C to 105°C Parallel wires at oval form or twisted – at round form			Immovable fixture	+
					Movable fixture	•

COMPENSATION CABLE WITH SILIKONE INSULATION TYPE SLSLoval AND SLSL

Form	Cross-section 1 wire	Number of wires	Outer diameter Ømm	Weight (kg/m)	Application	
					Electromagnetic interference	Radioactivity
Oval	S 1.50 mm ²	2	4.4 x 7.2	0.100	Mineral oils	•
Oval	S 0.22 mm ²	2	4.4	0.020	Bases	+
Round	S 1.50 mm ²	2	7.2	0.110	Acids	+
1. Silikone insulation 2. Silikone braid		Insulation temperature range from -60°C to 200°C Parallel wires at oval form or twisted – at round form			Benzol	-
					Benzine	-
					Water vapour	•
					Moist media	+
					Dry media	+
					Immovable fixture	•
					Movable fixture	+

MICROSYST offers all types of compensation cables by order: GLGL oval and GLGL, J, YY, JJPJ, YYPY, JFJ, YFY, JFJPJ, YFY, YFYPY, SLSLGL, SLFSL, SLGL oval and SLGL, SLGLP oval and SLGLP, TT oval and TT, TGLP oval and TGLP, TGLV oval and TGLV, TFT, etc.

Legend: S (mm²) – effective cross-section of multi-wire wire; Ø (mm) – diameter of single-wire wire;
+ – applicable; • – conditionally applicable; - – inapplicable