

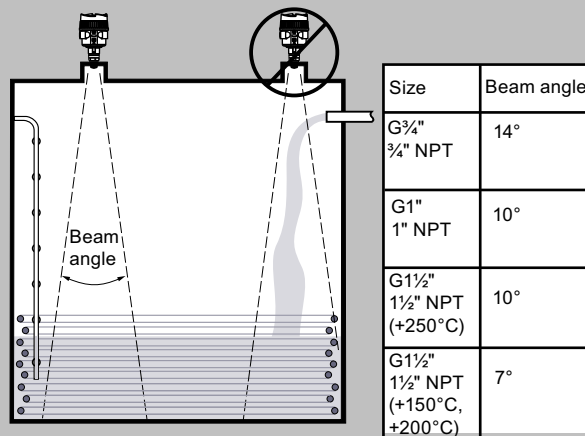
Overview



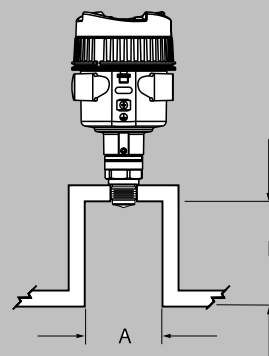
SITRANS LR510 threaded lens antenna provides continuous monitoring of liquids, including corrosive liquids, and slurries to a range of 30 m (98 ft). The small process connection makes it ideal for applications with challenging mounting conditions.

Configuration

Installation of SITRANS LR510



SITRANS LR510 threaded connection



Nozzle diameter "A"		Nozzle length "B"	
40 mm	1 1/2"	≤ 150 mm	≤ 5.9"
50 mm	2"	≤ 200 mm	≤ 7.9"
80 mm	3"	≤ 300 mm	≤ 11.8"
100 mm	4"	≤ 400 mm	≤ 15.8"
150 mm	6"	≤ 600 mm	≤ 23.6"

SITRANS LR510 Nozzle installation

SITRANS LR510

Selection and ordering data

		Article No.													
SITRANS LR510 threaded connection Continuous, non-contact, 30 m (98 ft) range, for liquids and slurries.		7	M	L	7	5	1	0	-	0	-	0	0	0	0
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.															
Communications															
4 ... 20 mA HART		0													
Sealing material of the antenna/process connection															
PEEK / FKM -40 ... +150 °C (-40 ... +302 °F)		0													
PEEK / FKM -40 ... +200 °C (-40 ... +392 °F)		1													
PEEK / FFKM -20 ... +150 °C (-4 ... +302 °F)		2													
PEEK / FFKM -20 ... +250 °C (-4 ... +482 °F)		3													
Process connection type and material															
Thread, DIN 3852-2-A-G $\frac{3}{4}$ ", 316/316L				A		A									
Thread, DIN 3852-2-A-G $\frac{3}{4}$ ", Alloy C22 (2.4602)				A		B									
Thread, ASME B1.20.1, $\frac{3}{4}$ " NPT, 316/316L				A		C									
Thread, ASME B1.20.1, $\frac{3}{4}$ " NPT, Alloy C22 (2.4602)				A		D									
Thread, DIN 3852-2-A-G1", 316/316L				B		A									
Thread, DIN 3852-2-A-G1", Alloy C22 (2.4602)				B		B									
Thread, ASME B1.20.1, 1" NPT, 316/316L				B		C									
Thread, ASME B1.20.1, 1" NPT, Alloy C22 (2.4602)				B		D									
Thread, DIN 3852-2-A-G1- $\frac{1}{2}$ ", 316/316L				C		A									
Thread, DIN 3852-2-A-G1- $\frac{1}{2}$ ", Alloy C22 (2.4602)				C		B									
Thread, ASME B1.20.1, 1- $\frac{1}{2}$ " NPT, 316/316L				C		C									
Thread, ASME B1.20.1, 1- $\frac{1}{2}$ " NPT, Alloy C22 (2.4602)				C		D									
Second line of defence (SLOD) gas-tight seal															
SLOD not included		0													
SLOD included		1													
Enclosure															
Single compartment enclosure		4													
Type of protection															
Non Ex - General purpose															
Intrinsically safe Ex ia / IS (Division 1) ¹⁾		A													
Non-incendive (Division 2) ²⁾		D													
Dust Ignition proof, Ex t / DIP (Class II, Division 1) ¹⁾⁴⁾		M													
Electrical connection															
M20		F													
$\frac{1}{2}$ " NPT		K													
Local HMI															
None, with blind lid		0													
Included, with blind lid		1													
Included, with window lid		3													

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article No. and specify Order code(s).	
Pressure test certificates	
Pressure test certificate inspection certificate EN 10204-3.1 (AD2000-A4 / EN12266-1) ⁸⁾	C01
Pressure test certificate inspection certificate EN 10204-3.1 (ASME B31.1 / B31.3) ⁹⁾	C02
Certificates	
Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 - performance	C11
Inspection certificate EN 10204-3.1, material	C12

Selection and Ordering data	Order code
Inspection certificate EN 10204-3.1, material with NACE MR0175 and MR0103	C13
Test report EN 10204-2.2, material	C14
Test report EN 10204-3.1, PMI test - XRF (X-Ray fluorescence)	C15
Tagging	
Stainless steel tag [69 mm x 50 mm (2.71 x 1.97 inch)]	
Tag (device parameters, max. 27 characters), plate, stainless steel 304/1.4301	Y15
Regional Ex Approval ³⁾⁵⁾	
NEPSI (China)	E27
ATEX (Europe), IECEx (International), and UKEX (Great Britain)	E47

Selection and ordering data (continued)

Selection and Ordering data	Order code
CSA (Canada) and FM (USA)	E48
ATEX (Europe), IECEx (International), UKEX (Great Britain), CSA (Canada), and FM (USA)	E49

Selection and ordering data	Article No.
Operating instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	
Sun shield cover	A5E52107153
AW050 Bluetooth module kit (General purpose only), M20	A5E51857118
AW050 Bluetooth module kit (General purpose only), ½" NPT	A5E52095588
Lightning Arrestor, M20	7MF7903-7AB
Lightning Arrestor, ½" NPT	7MF7903-7AC
Polypropylene adapter flange, 2"/DN50, universal, 1.5" NPT	A5E50868980
Polypropylene adapter flange, 2"/DN50, universal, 1.5" BSPT	A5E50868982
Polypropylene adapter flange, 3"/DN80, universal, 1.5" NPT	A5E50868988

Selection and ordering data	Article No.
Polypropylene adapter flange, 3"/DN80, universal, 1.5" BSPT	A5E50868998
Polypropylene adapter flange, 4"/DN100, universal, 1.5" NPT	A5E50869003
Polypropylene adapter flange, 4"/DN100, universal, 1.5" BSPT	A5E50869005
<i>Note: other polypropylene adapter flange sizes available via PVR request.</i>	
Spare parts	
¾" process seal for G thread types FKM, KLINGERSIL C-4400	A5E53276254
1" process seal for G thread types FKM, KLINGERSIL C-4400	A5E53276255
1-½" process seal for G thread types FKM, KLINGERSIL C-4400	A5E53276256
Electronic module, LR510, LR530, <DN80 / 3 inch, mA/HART	A5E53276263
LR500 lid with window, Non-Exd/XP	A5E53276250
LR500 no window, Non-Exd/XP	A5E53276252
HMI graphical display, with interconnection cable	A5E53276247

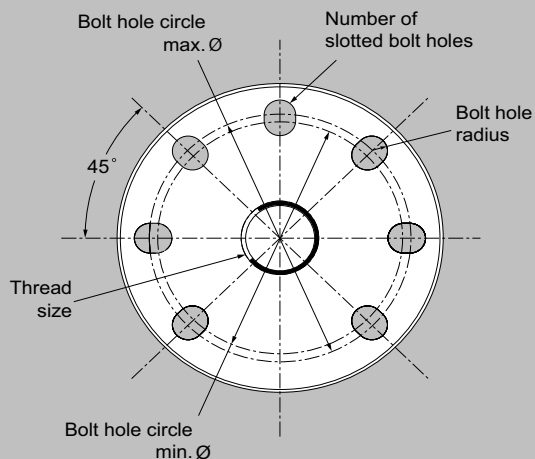
- 1) Available only with one of -Z Regional hazardous Approval options.
- 2) Available only with -Z Regional hazardous Approval option E48.
- 3) Not available with Type of Protection option A.
- 4) Available only with Second line of defence gas tight seal option 1.
- 5) Only one regional hazardous approval option can be selected.
- 8) Available only with Process connection type and material options AA, AB, BA, BB, CA, and CB.
- 9) Available only with Process connection type and material options AC, AD, BC, BD, CC, and CD.

SITRANS LR510

Technical specifications

SITRANS LR510	
Mode of operation	
Recommended measuring range	<ul style="list-style-type: none"> • G$\frac{3}{4}$", $\frac{3}{4}$" NPT: 10 m (32.81 ft) • G1", 1" NPT: 20 m (65.62 ft) • G1$\frac{1}{2}$", 1$\frac{1}{2}$" NPT (+150 °C, +200 °C): 30 m (98 ft)
Medium conditions	
Process temperature	<ul style="list-style-type: none"> • PEEK lens, FKM seal: -40 ... +150 °C (-40 ... +302 °F) • PEEK lens, FKM seal, thermal extension: -40 ... +200 °C (-40 ... +392 °F) • PEEK lens, FFKM seal: -20 ... +150 °C (-4 ... +302 °F) • PEEK lens, FFKM seal, thermal extension: -20 ... +250 °C (-4 ... 482 °F)
Process pressure	Up to 40 bar g (580 psi g), process connection and temperature dependent. See Pressure/Temperature curves for more information.
Design	
Materials	
• Threaded process connection	316L stainless steel or optional Alloy C22 (2.4602)
• Antenna lens	PEEK
• Antenna seal	FKM or FFKM
Process connection	<ul style="list-style-type: none"> • 3/4" thread, DIN3852-2-A, PN40 • 3/4" NPT, ASME B1.20.1 • 1" thread, DIN3852-2-A, PN40 • 1" NPT, ASME B1.20.1 • 1-1/2" thread, DIN3852-2-A, PN40 • 1-1/2" NPT, ASME B1.20.1
Second line of defence option (SLOD)	Internal fused glass seal

Options



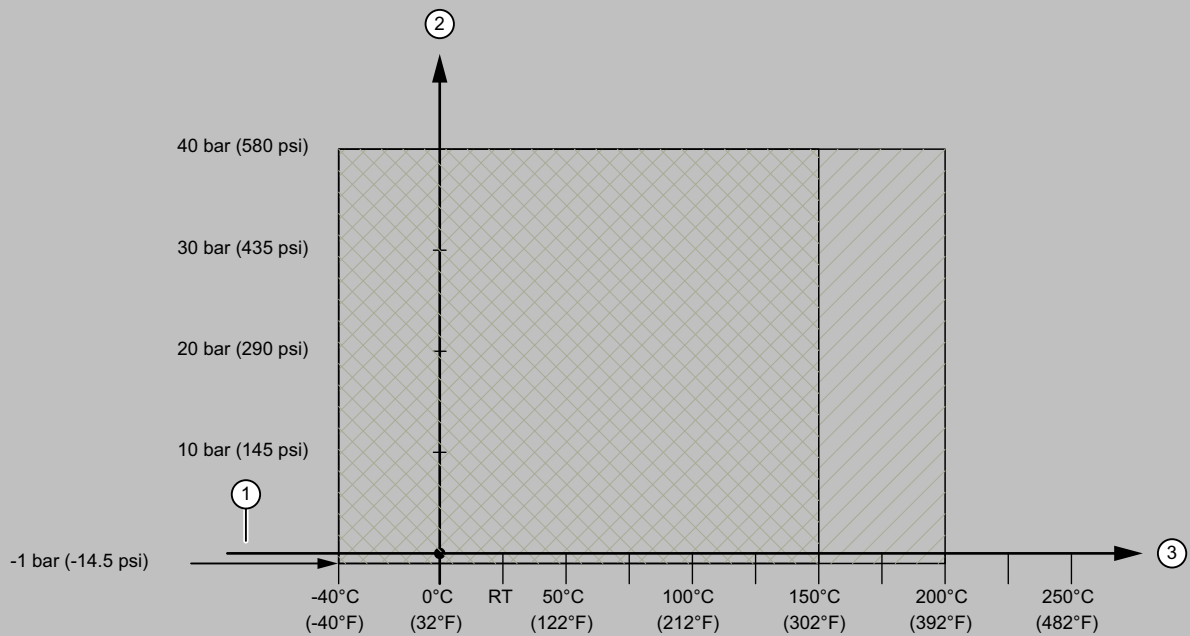
Part number	Adapter flange size	OD ± 1	B.C.D. max. for slotted holes (bmax.) ± 0.75	B.C.D. min. for slotted holes (bmin.) ± 0.75	Bolt hole radius ± 0.25	Number of slotted holes	Thread size
A5E50868980 A5E50868982 A5E50868983	2"/DN50	200	160	150	R 9.5	8	1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868988 A5E50868998 A5E50869002	3"/DN80	200	160	150	R 9.5	8	1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868953 A5E50868975 A5E50869003 A5E50869005 A5E50869010	4"/DN100	229	191	175	R 9.5	8	1" NPT, PP 1" BSPT, PP 1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868976 A5E50868977 A5E50869012 A5E50869014 A5E50869015	6"/DN150	285	242	240	R 11.5	8	1" NPT, PP 1" BSPT, PP 1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP

SITRANS LR510, Polypropylene adapter flange

SITRANS LR510

Characteristic curves

SITRANS LR510 Threaded lens antenna, seal options 0 and 1



① Atmospheric pressure

② Allowable operating pressures

③ Allowable operating temperatures

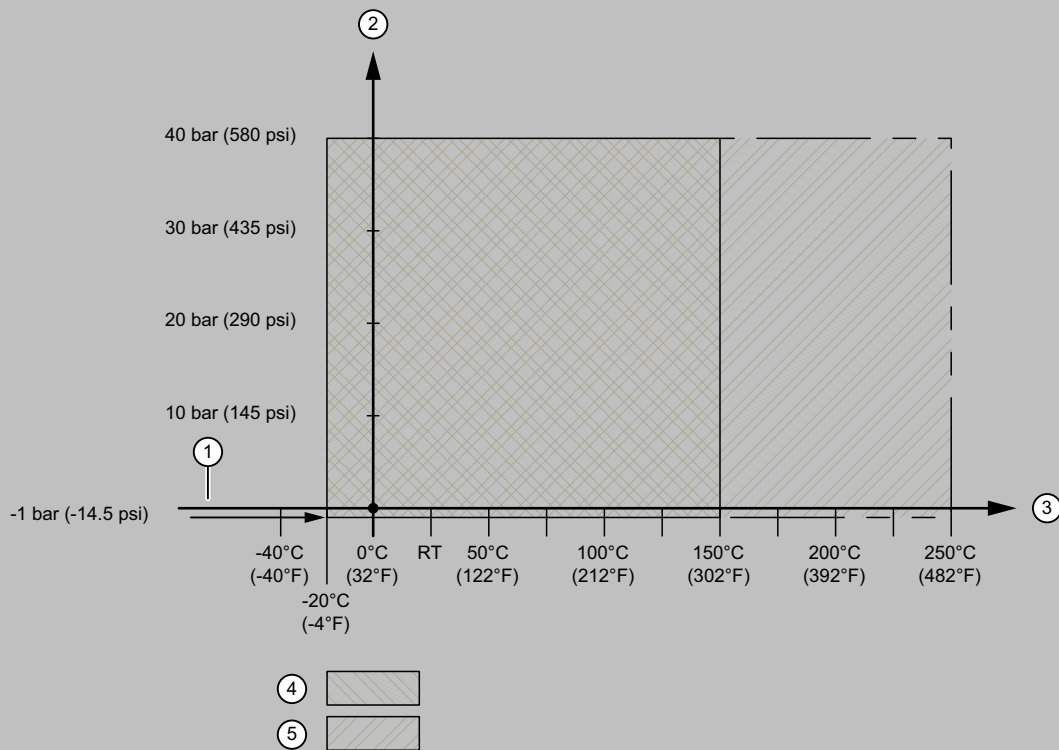
④ FKM without thermal extension

⑤ FKM with thermal extension

SITRANS LR510 Threaded lens antenna, process pressure/temperature derating curve, seal options 0 and 1

Characteristic curves (continued)

SITRANS LR510 Threaded lens antenna, seal options 2 and 3



① Atmospheric pressure

② Allowable operating pressures

③ Allowable operating temperatures

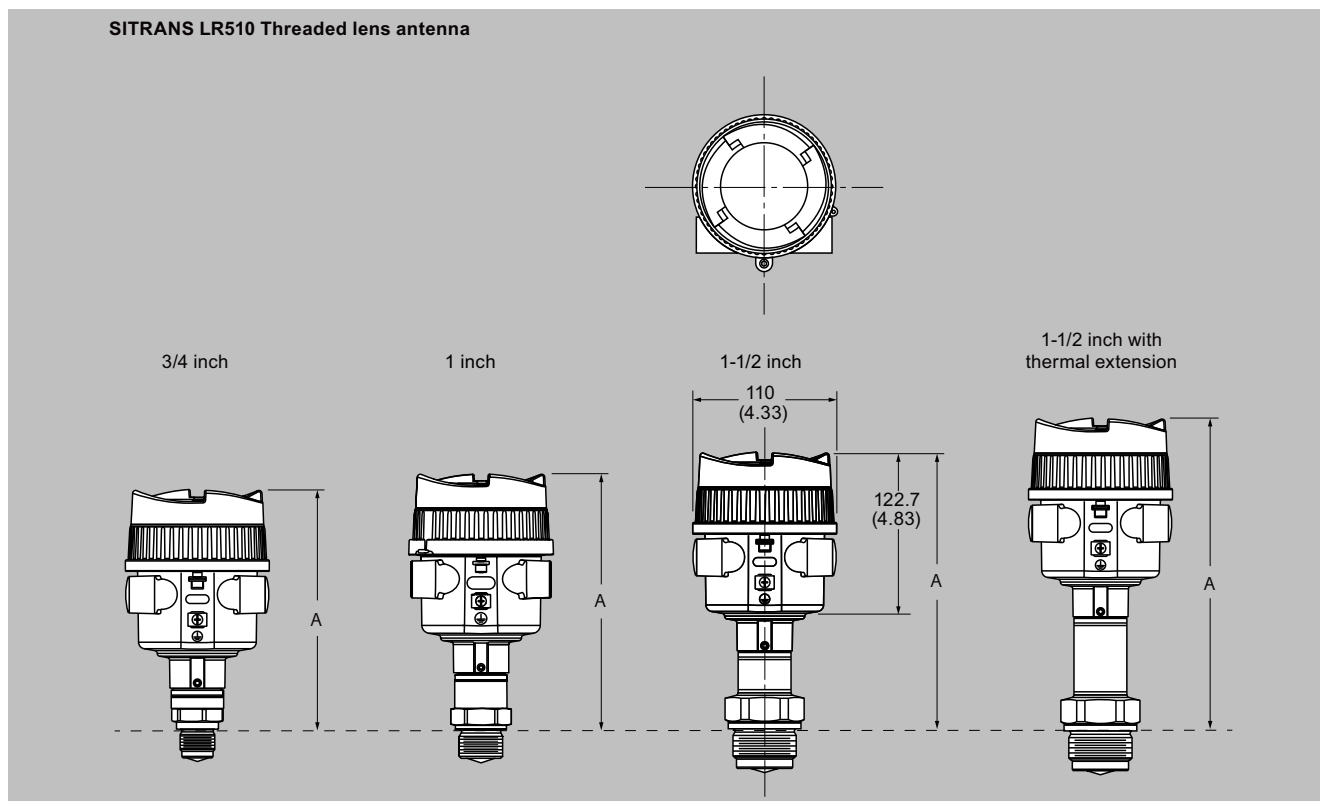
④ FFKM without thermal extension

⑤ FFKM with thermal extension

SITRANS LR510 Threaded lens antenna, process pressure/temperature derating curve, seal options 2 and 3

SITRANS LR510

Dimensional drawings



SITRANS LR510 Threaded lens antenna, dimensions in mm (inch)

Antenna type	A mm (inch)	Recommended max. range m (ft)	Beam angle	Process seal material	Temperature
Thread G3/4" PN40, DIN3852-A	182.3 (7.18)	10 (32.8)	14°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread 3/4" NPT, ASME B1.20.1	182.3 (7.18)	10 (32.8)	14°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread G1" PN40, DIN3852-2-A	193.8 (7.63)	20 (65.6)	10°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread 1" NPT, ASME B1.20.1	194 (7.64)	20 (65.6)	10°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread G1-1/2" PN40, DIN3852-2-A	213.8 (8.42)	30 (98.4)	7°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread 1-1/2" NPT, ASME B1.20.1	214 (8.43)	30 (98.4)	7°	FKM	-40 ... +150 °C (-40 ... +302 °F)
Thread G3/4" PN40, DIN3852-2-A	182.3 (7.18)	10 (32.8)	14°	FFKM	-20 ... +150 °C (-4 ... +302 °F)
Thread 3/4" NPT, ASME B1.20.1	182.3 (7.18)	10 (32.8)	14°	FFKM	-20 ... +150 °C (-4 ... +302 °F)
Thread G1" PN40, DIN3852-2-A	193.8 (7.63)	20 (65.6)	10°	FFKM	-20 ... +150 °C (-4 ... +302 °F)
Thread 1" NPT, ASME B1.20.1	194 (7.64)	20 (65.6)	10°	FFKM	-20 ... +150 °C (-4 ... +302 °F)
Thread G1-1/2" PN40, DIN3852-2-A	213.8 (8.42)	30 (98.4)	7°	FFKM	-20 ... +150 °C (-4 ... +302 °F)
Thread 1-1/2" NPT, ASME B1.20.1	214 (8.43)	30 (98.4)	7°	FFKM	-20 ... +150 °C (-4 ... +302 °F)

Dimensional drawings (continued)

Antenna type Thermal extension	A mm (inch)	Recommended max. range m (ft)	Beam angle	Process seal material	Temperature
Thread G3/4" PN40, DIN3852-2-A	234.2 (9.22)	10 (32.8)	14°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread 3/4" NPT, ASME B1.20.1	234.2 (9.22)	10 (32.8)	14°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread G1" PN40, DIN3852-2-A	245.8 (9.68)	20 (65.6)	10°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread 1" NPT, ASME B1.20.1	245.8 (9.68)	20 (65.6)	10°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread G1-1/2" PN40, DIN3852-2-A	265.8 (10.46)	30 (98.4)	7°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread 1-1/2" NPT, ASME B1.20.1	266 (10.47)	30 (98.4)	7°	FKM	-40 ... +200 °C (-40 ... +392 °F)
Thread G3/4" PN40, DIN3852-2-A	234.3 (9.22)	10 (32.8)	14°	FFKM	-20 ... +250 °C (-4 ... +392 °F)
Thread 3/4" NPT, ASME B1.20.1	234.5 (9.32)	10 (32.8)	14°	FFKM	-20 ... +250 °C (-4 ... +392 °F)
Thread G1" PN40, DIN3852-2-A	245.8 (9.68)	20 (65.6)	10°	FFKM	-20 ... +250 °C (-4 ... +392 °F)
Thread 1" NPT, ASME B1.20.1	246 (9.68)	20 (65.6)	10°	FFKM	-20 ... +250 °C (-4 ... +392 °F)
Thread G1-1/2" PN40, DIN3852-2-A	237.8 (9.36)	30 (98.4)	10°	FFKM	-20 ... +250 °C (-4 ... +392 °F)
Thread 1-1/2" NPT, ASME B1.20.1	238 (9.37)	30 (98.4)	10°	FFKM	-20 ... +250 °C (-4 ... +392 °F)