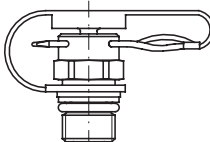
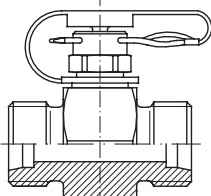
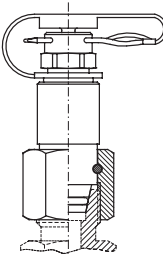
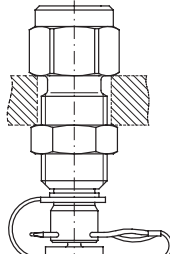
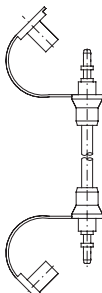
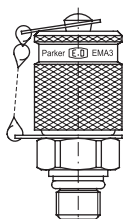
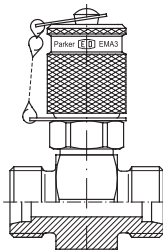
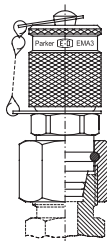
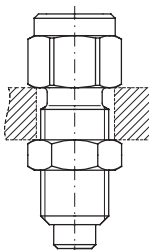
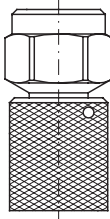
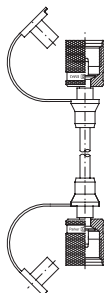
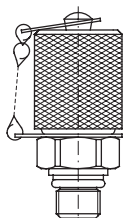
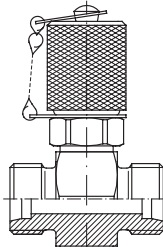
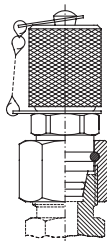
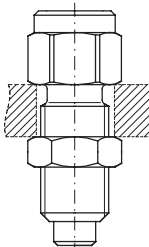
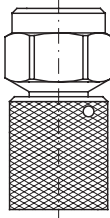
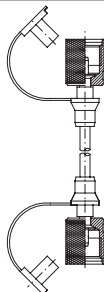




SensoControl® Diagnostic equipment Test Points



Visual index

Series 1 Test point fitting with pin-lock						
	EMA1 p. Q4	GMA1 p. Q5	VKA1 p. Q6	MAV ... MA1 p. Q7	SMA1 P. Q7	
Series 3 Test point with threaded connection M 16×2						
	EMA3 p. Q8	GMA3 p. Q9	VKA3 p. Q10	MAV ... MA3 p. Q11	MAVMD ... MA3 p. Q11	SMA3 p. Q11
Series 4 Test point with threaded connec- tion M 16×1.5						
	EMA4 p. Q12	GMA4 p. Q13	VKA4 p. Q14	MAV ... MA4 p. Q15	MAVMD ... MA4 p. Q15	SMA4 p. Q15
SensoControl® Product range Diagnostic/ Industrial	p. Q16					

EMA1/EMA3/EMA4-Test Point fitting

- For pressure monitoring and checking on high, low and negative pressure systems.
- For bleeding cylinders and hydraulic systems.
- For taking samples on high, low and negative pressure systems.

Advantages:

- Leakfree connection before valve is open
- Sturdy, safe constructions for small dimensions
- Easy handling
- Simple connection of measuring, control and switching devices
- Coupling under pressure up to 400 bar is possible with screw couplings
- Nominal pressures up to 630 bar
- Self locking metal guard cap, vibration resistant

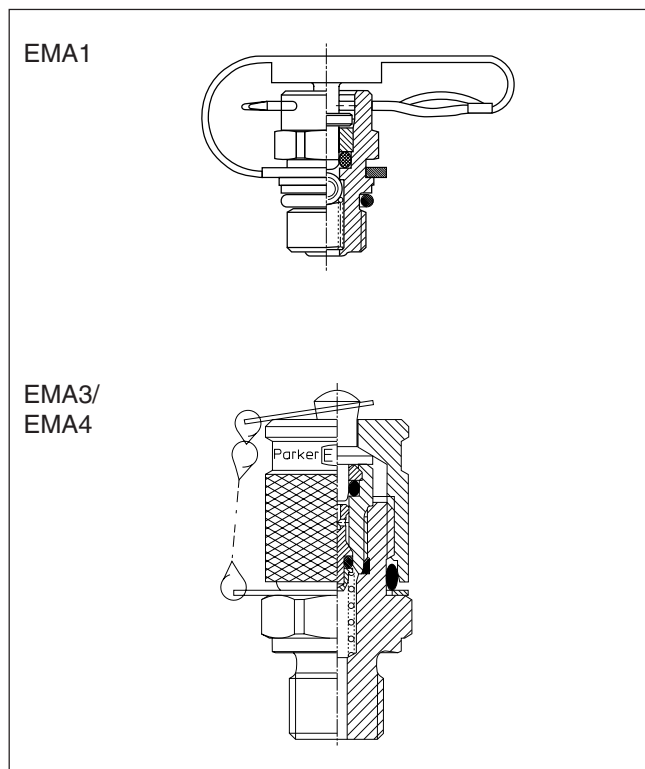
Sealing system of the primary seal:

EMA1 by ball non-return valve.

EMA3/EMA4 by cone seal with O-ring.

The new EMA3/EMA4 sealing system guarantees minimum leakage rates even for pneumatic and gas applications.

The screw-on Cap (EMA3/EMA4), and pin lock (EMA1) types both employ an O-ring seal as secondary sealing with the hose attached.



Differences between EMA1, EMA3 and EMA4 types

- sealing system (see previous section)
- Test hose connection by plug-in coupling in EMA1
Test hose connection by threaded connection in EMA3
- Working pressures (see section advantages)

Working pressure

- EMA3/EMA4 types up to 630 bar
- EMA1 types up to 400 bar
- Max. working pressure 630 bar for GMA, VKA and EMA ... the recommended working pressure of fitting manufacturer has to be applied
- Joining under pressure up to 400 bar max.
- The allowable nominal pressures of each Test-Point are shown on the product pages.

Materials and Temperatures:

- Steel, yellow chromated (A3C)
- Stainless Steel, material 1.4571
- Seals:
 - NBR Temperature range -20 to +100°C
(The sealing of the poppet valve for Standard-NBR-version is FKM)
 - FKM (Temperature range -20 to +200°C)
 - EPDM Ethylene Propylene (for Break Fluid)
(Temperature range -40 to +150°C)
- Hose:
 - Polyamide (Temperature range: -35°C ... 100°C max.)

Seals:

- Steel Types NBR (Perbunan)
- Stainless Steel FKM (Viton) only

Media:

- Suitable for hydraulic oils and other mineral oil based fluids (Please pay attention to the sealing materials used!)
- For use in conjunction with other liquid media please consult Parker

Approvals

DVGW for EMA3/8X1OR, EMA3/10X1OR, EMA3 1/8NPT, EMA 3 1/4 NPT



EMA1 Test point fitting with pin-lock

Series 1

Male stud thread: BSP, metric

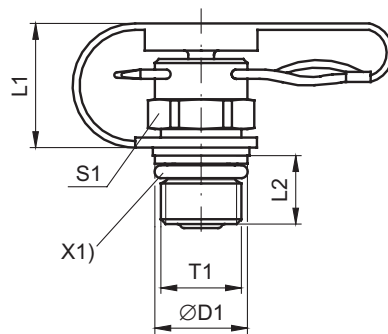


Fig. A

X1) O-ring
X2) Cutting face

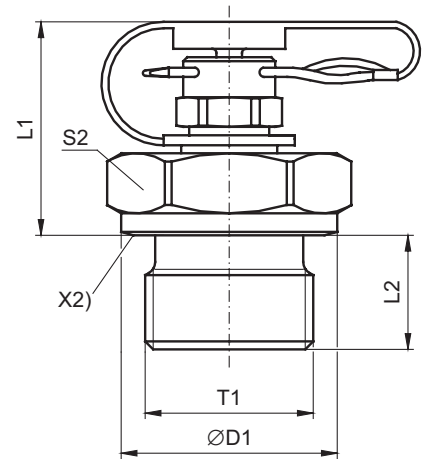


Fig. B

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾ A3C	DF**
M12×1.5	17.0	32.0	12.0		19	B	53	EMA1/12X1.5	400	4
M14×1.5	19.0	32.0	12.0		19	B	56	EMA1/14X1.5	400	4
M16×1.5	21.0	25.0	12.0		22	B	47	EMA1/16X1.5	400	4
G1/8	14.0	32.5	8.0		17	B	41	EMA1/1/8	400	4
G1/4	18.0	32.0	12.0		19	B	54	EMA1/1/4	400	4
G3/8	22.0	27.5	12.0		22	B	55	EMA1/3/8	400	4
G1/2	26.0	27.5	14.0		27	B	78	EMA1/1/2	400	4
M8×1	9.5	17.5	8.4	12		A	16	EMA1/8X1OR	400	4
M10×1	11.5	18.0	8.0	12		A	18	EMA1/10X1OR	400	4
M10×1	14.0	32.5	8.0		17	B	42	EMA1/10X1	400	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

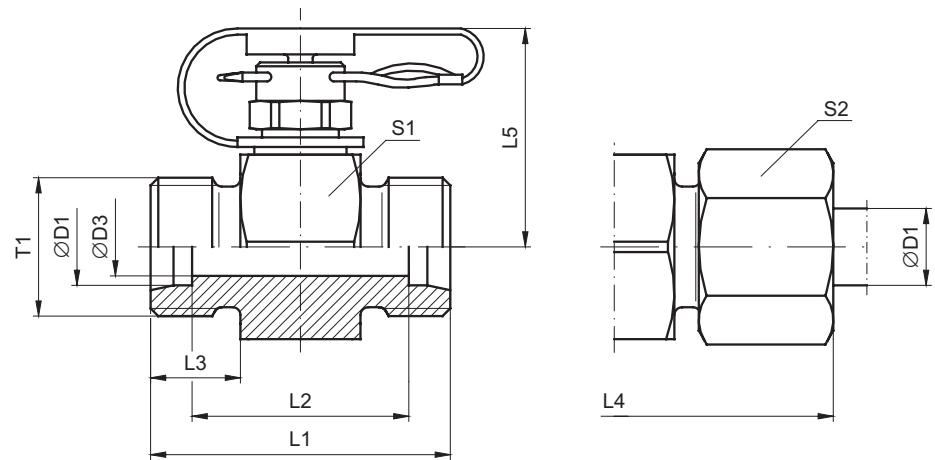
$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

*Please add the **suffixes**
below according to the material/
surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated	A3C	EMA1/12X1.5A3C	NBR

GMA1 Straight test point fitting with pin-lock

Series 1



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code	PN (bar) ¹⁾ A3C	DF ^{**}
L ³⁾	06	M12×1.5	4	35	21	10	51	29.0	24	14	73	GMA1/06LOMD	315	4
	08	M14×1.5	6	35	21	10	51	29.0	24	17	75	GMA1/08LOMD	315	4
	10	M16×1.5	7	37	23	11	53	29.0	24	19	80	GMA1/10LOMD	315	4
	12	M18×1.5	10	37	23	11	53	30.5	27	22	96	GMA1/12LOMD	315	4
	15	M22×1.5	12	39	25	12	55	32.0	30	27	121	GMA1/15LOMD	315	4
	18	M26×1.5	15	39	24	12	57	33.0	32	32	139	GMA1/18LOMD	315	4
	22	M30×2	19	43	28	14	61	35.0	36	36	171	GMA1/22LOMD	160	4
S ⁴⁾	06	M14×1.5	4	39	25	12	55	29.0	24	17	82	GMA1/06SOMD	400	4
	08	M16×1.5	5	39	25	12	55	29.0	24	19	88	GMA1/08SOMD	400	4
	10	M18×1.5	7	39	24	12	57	29.0	24	22	90	GMA1/10SOMD	400	4
	12	M20×1.5	7	39	24	12	57	29.0	24	24	96	GMA1/12SOMD	400	4
	14	M22×1.5	10	43	27	14	63	30.5	27	27	121	GMA1/14SOMD	400	4
	16	M24×1.5	12	43	26	14	63	32.0	30	30	138	GMA1/16SOMD	400	4
	20	M30×2	16	47	26	16	69	35.0	36	36	222	GMA1/20SOMD	400	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

³⁾ L = light series; ⁴⁾ S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

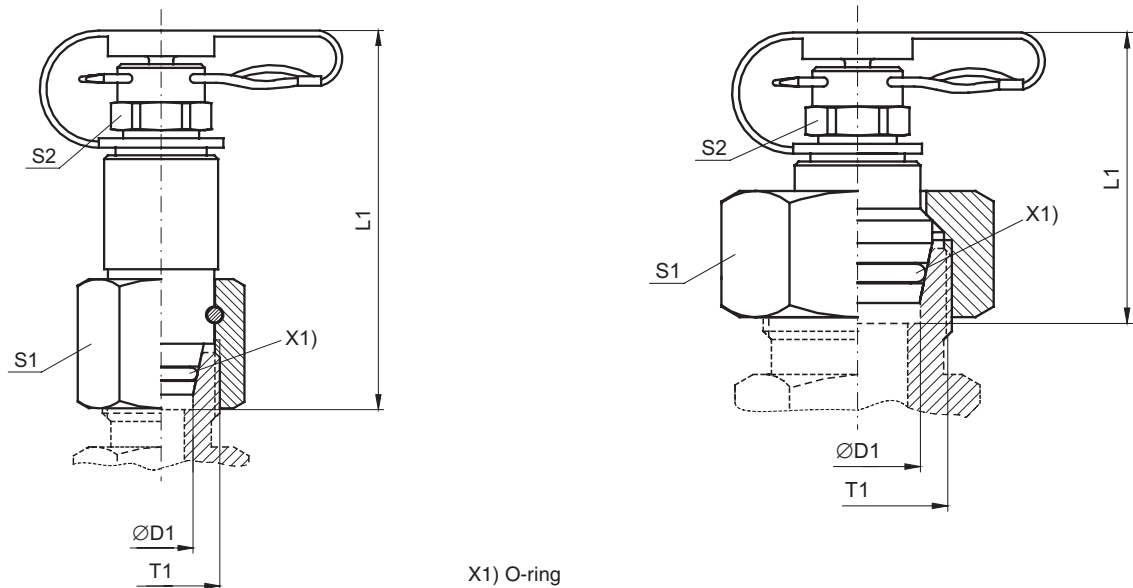
*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	GMA1/06LOMDA3C	NBR

VKA1 Test point fitting with pin lock for cones

Series 1

With 24° cone swivel nut connection



Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾ A3C	DF**
L ³⁾	06	M12×1.5	48	14	12	A	44	VKA1/06L	315	4
	08	M14×1.5	49	17	12	A	54	VKA1/08L	315	4
	10	M16×1.5	50	19	12	A	68	VKA1/10L	315	4
	12	M18×1.5	51	22	12	A	81	VKA1/12L	315	4
	15	M22×1.5	39	27	12	B	82	VKA1/15L	315	4
	18	M26×1.5	38	32	12	B	112	VKA1/18L	315	4
S ⁴⁾	06	M14×1.5	48	17	12	A	51	VKA1/06S	400	4
	08	M16×1.5	50	19	12	A	62	VKA1/08S	400	4
	10	M18×1.5	50	22	12	A	78	VKA1/10S	400	4
	12	M20×1.5	51	24	12	A	100	VKA1/12S	400	4
	14	M22×1.5	39	27	12	B	88	VKA1/14S	400	4
	16	M24×1.5	37	30	12	B	105	VKA1/16S	400	4
	20	M30×2	44	36	12	B	174	VKA1/20S	400	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

³⁾ L = light series; ⁴⁾ S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

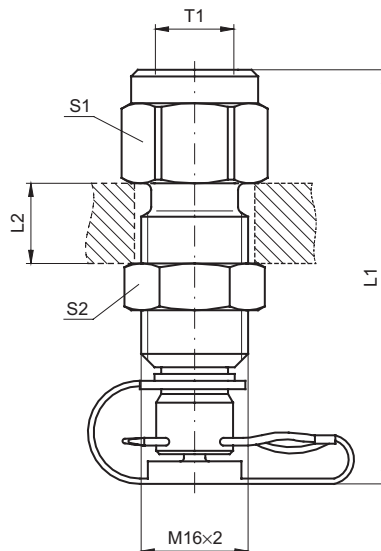
*Please add the **suffixes**
below according to the material/
surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	VKA1/06LA3C	NBR

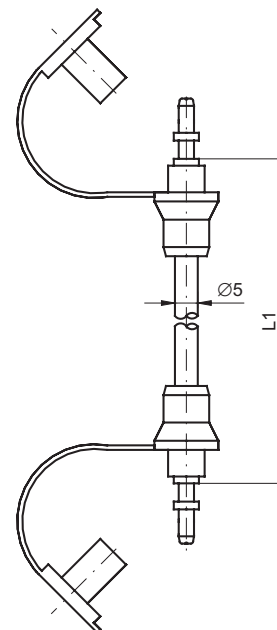
MAV-MA1 SMA1 Test Point pressure gauge connector with pin-lock Test Point high pressure hose with pin-lock

Series 1

Female thread: BSP
Sealing: sealing ring DIN 16258



Pressure gauge connector: MAV-MA1



Test hose: SMA1

T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar) ¹⁾ A3C	DF**
G1/4	61.5	12	19	19	78	MAV1/4MA1	400	4.0
G1/2	72.0	12	27	19	135	MAV1/2MA1	400	4.0
	400.0				21	SMA1-400	400	2.5
	630.0				26	SMA1-630	400	2.5
	800.0				26	SMA1-800	400	2.5
	1000.0				31	SMA1-1000	400	2.5
	1500.0				40	SMA1-1500	400	2.5
	2000.0				49	SMA1-2000	400	2.5
	2500.0				58	SMA1-2500	400	2.5
	3200.0				70	SMA1-3200	400	2.5
	4000.0				84	SMA1-4000	400	2.5

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

 $\frac{PN(\text{bar})}{10} = PN(\text{MPa})$

*Please add the **suffixes**
below according to the material/
surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	MAV1/4MA1A3C	NBR

Note hoses with small diameter:

- Min. bending radius $r = 20 \text{ mm}$
- Working temperature -20°C up to 100°C (short time to $+120^\circ\text{C}$)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

Temperature factor of pressure rating:

up to	0°C	122 %
for	30°C	110 %
for	50°C	100 %
for	80°C	86 %
for	100°C	77 %

For measuring with liquid pressure media please note:

Bleed before connecting tube! By capillary action discharge of the pressure medium is prevented widely.

EMA3 Test Point with threaded connection M 16×2

Series 3

Male thread: BSP, metric

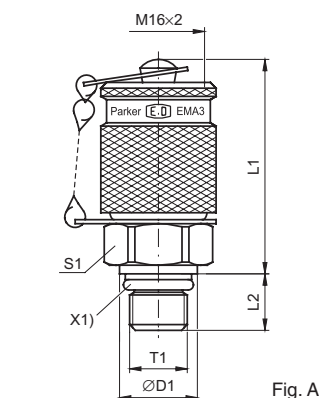


Fig. A

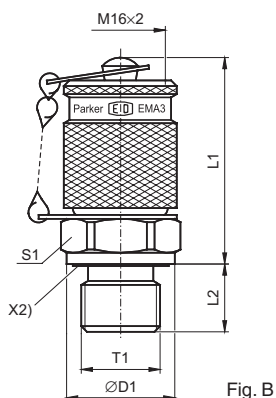


Fig. B

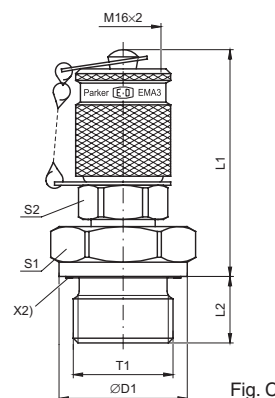


Fig. C

X1) O-ring
X2) Eolastic sealing
X3) Cutting face

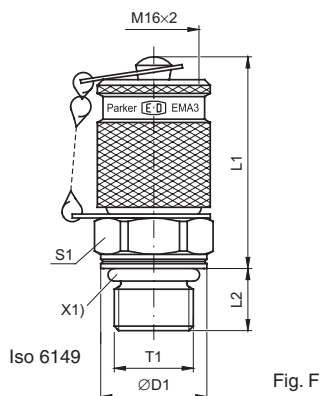


Fig. F

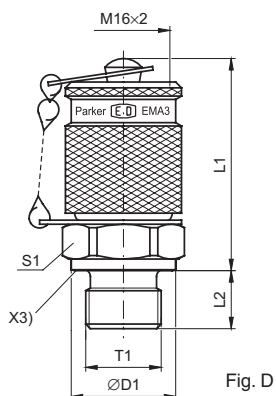


Fig. D

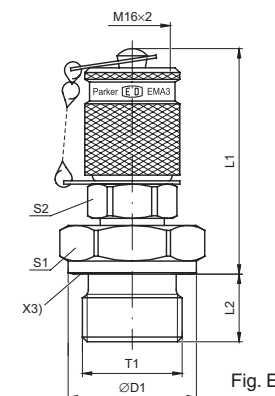


Fig. E

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF**	
									A3C	71	A3C	71
M8×1	9.5	37.0	8.5	17		A	66	EMA3/8X1OR	250		4.0	
M10×1	11.5	37.5	9.8	17		A	70	EMA3/10X1OR	630	630	4.0	4
M14×1.5	18.8	38.0	11.0	19		F	79	EMA3/14X1.5ISO	630	630	4.0	4
M10×1	14.0	37.0	8.0	17		D	67	EMA3/10X1	400		4.0	
M12×1.5	17.0	37.0	12.0	17		D	74	EMA3/12X1.5	400		4.0	
M14×1.5	19.0	37.0	12.0	19		D	78	EMA3/14X1.5	400		4.0	
M16×1.5	21.0	37.0	12.0	22		D	90	EMA3/16X1.5	400		4.0	
G1/8	14.0	39.0	8.0	17		D	70	EMA3/1/8	400		4.0	
G1/4	18.0	37.0	12.0	19		D	77	EMA3/1/4	400		4.0	
G3/8	22.0	37.0	12.0	22		D	91	EMA3/3/8	400		4.0	
G1/2	26.0	49.0	14.0	27	17	E	137	EMA3/1/2	400		3.4	
G1/8	14.0	39.0	8.0	17		B	72	EMA3/1/8ED	400	400	4.0	4
G1/4	19.0	37.0	12.0	19		B	76	EMA3/1/4ED	630	630	4.0	4
G3/8	22.0	37.0	12.0	22		B	93	EMA3/3/8ED	630	630	4.0	4
M10×1	14.0	39.0	8.0	17		B	71	EMA3/10X1ED	400	400	4.0	4
M12×1.5	17.0	37.0	12.0	17		B	72	EMA3/12X1.5ED	630	630	4.0	4
M14×1.5	19.0	37.0	12.0	19		B	77	EMA3/14X1.5ED	400	400	4.0	4
G1/2	27.0	49.0	14.0	27	17	C	135	EMA3/1/2ED	400	400	4.0	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

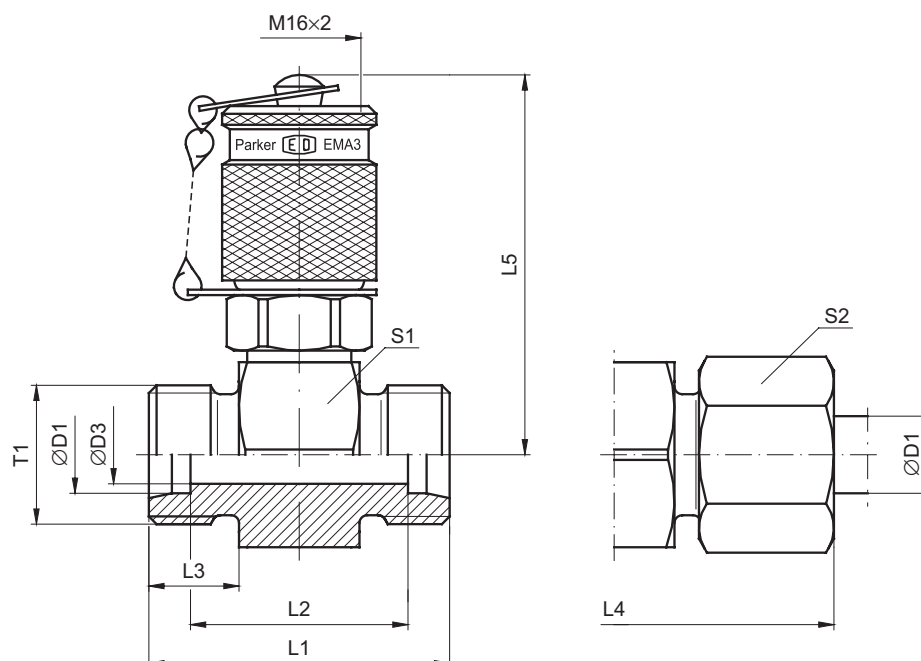
PN (bar)
10 = PN (MPa)

*Please add the **suffixes**
below according to the material/
surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	EMA3/10X10ORA3C	NBR

GMA3 Straight Test Point with threaded connection M 16×2

Series 3



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF**	
													A3C	71	A3C	71
L ³⁾	06	M12×1.5	4	35	21	10	51	49	24	14	126	GMA3/06LOMD	315	315	4	4
	08	M14×1.5	6	35	21	10	51	49	24	17	128	GMA3/08LOMD	315	315	4	4
	10	M16×1.5	7	37	23	11	53	49	24	19	132	GMA3/10LOMD	315	315	4	4
	12	M18×1.5	10	37	23	11	53	50	27	22	145	GMA3/12LOMD	315	315	4	4
	15	M22×1.5	12	39	25	12	55	52	30	27	174	GMA3/15LOMD	315	315	4	4
	18	M26×1.5	15	39	24	12	57	53	32	32	192	GMA3/18LOMD	315	315	4	4
	22	M30×2	19	43	28	14	61	55	36	36	220	GMA3/22LOMD	160	160	4	4
	28	M36×2	24	43	28	14	61	57	41	41	259	GMA3/28LOMD	160	160	4	4
	35	M45×2	29	47	26	16	69	60	46	50	363	GMA3/35LOMD	160	160	4	4
	42	M52×2	36	47	25	16	71	64	55	60	419	GMA3/42LOMD	160	160	4	4
S ⁴⁾	06	M14×1.5	4	39	25	12	55	49	24	17	137	GMA3/06SOMD	630	630	4	4
	08	M16×1.5	5	39	25	12	55	49	24	19	141	GMA3/08SOMD	630	630	4	4
	10	M18×1.5	7	39	24	12	57	49	24	22	141	GMA3/10SOMD	630	630	4	4
	12	M20×1.5	7	39	24	12	57	49	24	24	150	GMA3/12SOMD	630	630	4	4
	14	M22×1.5	10	43	27	14	63	50	27	27	172	GMA3/14SOMD	630	630	4	4
	16	M24×1.5	12	43	26	14	63	52	30	30	195	GMA3/16SOMD	400	400	4	4
	20	M30×2	16	47	26	16	69	55	36	36	254	GMA3/20SOMD	400	400	4	4
	25	M36×2	20	51	27	18	75	57	41	46	329	GMA3/25SOMD	400	400	4	4
	30	M42×2	25	55	28	20	81	60	46	50	412	GMA3/30SOMD	400	400	4	4
	38	M52×2	32	61	29	22	91	64	55	60	616	GMA3/38SOMD	315	315	4	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

³⁾ L = light series; ⁴⁾ S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page 17.

*Please add the **suffixes** below according to the material/ surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	GMA3/06LOMDA3C	NBR
Stainless Steel	71	GMA3/06LOMD71	VIT

VKA3 Test Point for cones with threaded connection M 16×2

Series 3

With 24° cone swivel nut connection

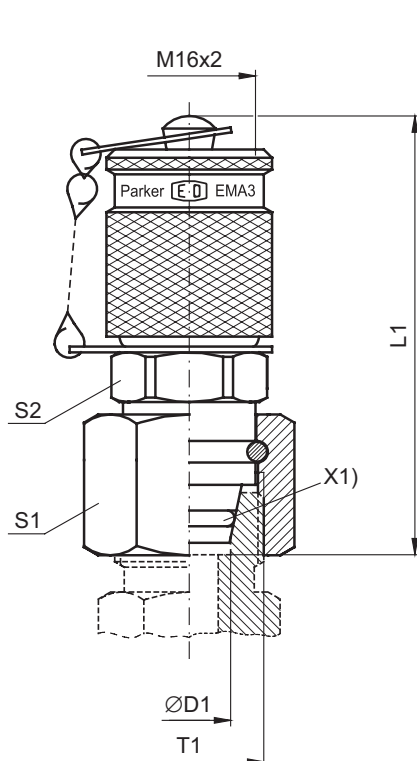


Fig. A

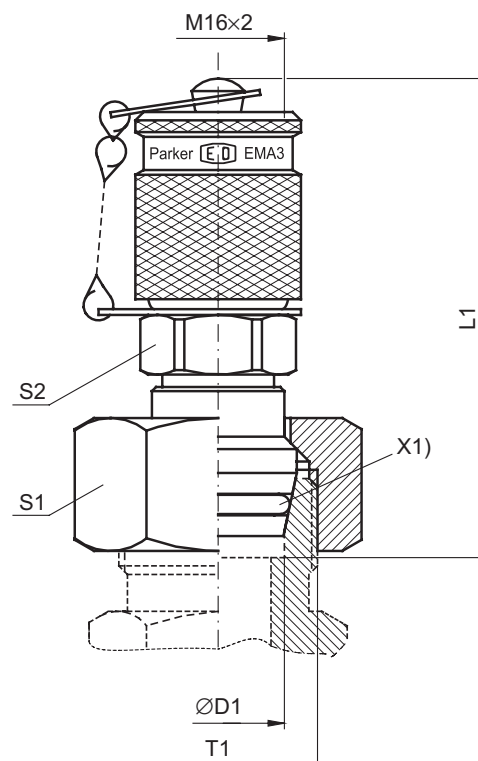


Fig. B

X1) O-ring

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF**	
									A3C	71	A3C	71
L ³⁾	06	M12×1.5	55	14	17	A	82	VKA3/06L	315	315	4	4
	08	M14×1.5	51	17	17	A	82	VKA3/08L	315	315	4	4
	10	M16×1.5	53	19	17	A	93	VKA3/10L	315	315	4	4
	12	M18×1.5	53	22	17	A	107	VKA3/12L	315	315	4	4
	15	M22×1.5	59	27	17	B	133	VKA3/15L	315	315	4	4
	18	M26×1.5	59	32	17	B	163	VKA3/18L	315	315	4	4
	22	M30×2	60	36	17	B	205	VKA3/22L	160	160	4	4
	28	M36×2	64	41	17	B	269	VKA3/28L	160	160	4	4
	35	M45×2	71	50	17	B	411	VKA3/35L	160	160	4	4
	42	M52×2	72	60	17	B	592	VKA3/42L	160	160	4	4
S ⁴⁾	06	M14×1.5	50	17	17	A	81	VKA3/06S	630	630	4	4
	08	M16×1.5	52	19	17	A	88	VKA3/08S	630	630	4	4
	10	M18×1.5	53	22	17	A	99	VKA3/10S	630	630	4	4
	12	M20×1.5	54	24	19	A	121	VKA3/12S	630	630	4	4
	14	M22×1.5	59	27	17	B	136	VKA3/14S	630	630	4	4
	16	M24×1.5	58	30	17	B	156	VKA3/16S	400	400	4	4
	20	M30×2	65	36	17	B	223	VKA3/20S	400	400	4	4
	25	M36×2	68	46	17	B	367	VKA3/25S	400	400	4	4
	30	M42×2	74	50	17	B	444	VKA3/30S	400	400	4	4
	38	M52×2	81	60	17	B	655	VKA3/38S	315	315	4	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

³⁾ L = light series; ⁴⁾ S = heavy series

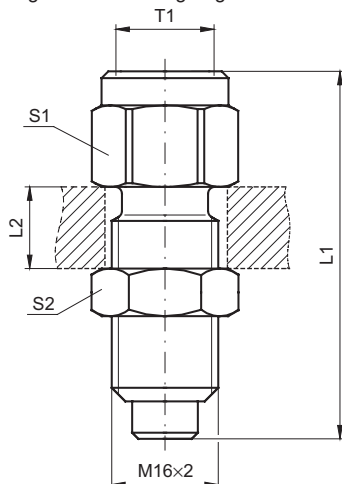
PN (bar)
10 = PN (MPa)

*Please add the **suffixes**
below according to the material/
surface required.

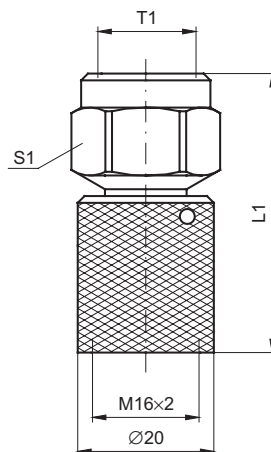
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	VKA3/06LA3C	NBR

MAV...MA3 Test point pressure gauge connector with threaded connection M 16×2
MAVMD...MA3 Test point with threaded connection M 16×2
SMA3 Test point high pressure hose with threaded connection M 16×2 W Series 3

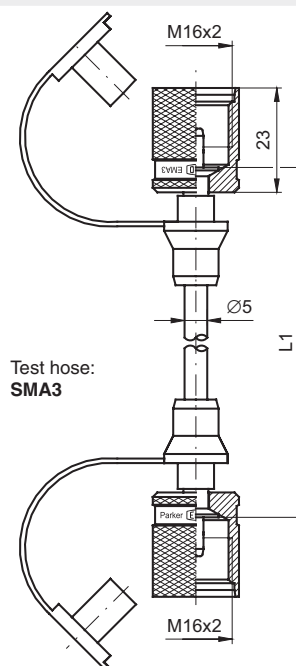
Female thread: BSP
 Sealing: sealing ring DIN 16258*



Pressure gauge connector:
MAV...MA3



Gauge-Direct-Connector:
MAVMD...MA3



Test hose:
SMA3

T1	L1	L2 max.	S1	S2	Weight g/1 piece	Order code*	PN (bar) ¹⁾ A3C	DF**
G1/4	54.0	12	19	19	74	MAV1/4MA3	630	4.0
G1/2	64.0	12	27	19	129	MAV1/2MA3	630	4.0
G1/4	41.0		19		61	MAVMD1/4MA3	630	4.0
G1/2	51.5		27		103	MAVMD1/2MA3	630	4.0
	200.0				73	SMA3-200	630	2.5
	300.0				74	SMA3-300	630	2.5
	400.0				74	SMA3-400	630	2.5
	630.0				79	SMA3-630	630	2.5
	800.0				83	SMA3-800	630	2.5
	1000.0				87	SMA3-1000	630	2.5
	1500.0				95	SMA3-1500	630	2.5
	2000.0				105	SMA3-2000	630	2.5
	2500.0				110	SMA3-2500	630	2.5
	3200.0				125	SMA3-3200	630	2.5
	4000.0				137	SMA3-4000	630	2.5

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

*Please add the **suffixes**
 below according to the material/
 surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	MAV1/4MA3A3C	NBR

* Sealing rings according to DIN 16258 for steel design of copper,
 for stainless steel design of stainless steel.

Note hoses with small diameter:

- Min. bending radius $r = 20 \text{ mm}$
- Working temperature -20°C up to 100°C (short time to $+120^\circ\text{C}$)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

For measuring with liquid pressure media please note:
 Bleed before connecting tube! By capillary action discharge of the
 pressure medium is prevented widely.

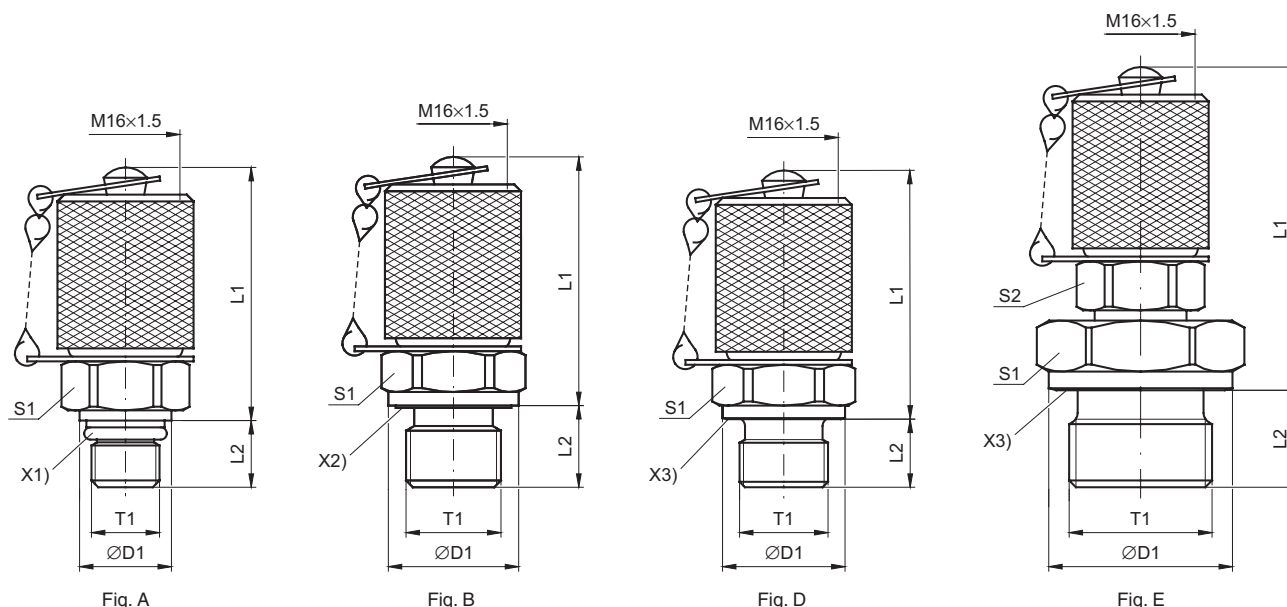
Temperature factor of pressure rating:

up to	0°C	122 %
for	30°C	110 %
for	50°C	100 %
for	80°C	86 %
for	100°C	77 %

EMA4 Test Point with threaded connection M 16×1.5

Series 4

Male thread: BSP, metric



X1) O-ring
X2) Elasto sealing
X3) Cutting face

T1	D1	L1	L2	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF**	
									A3C	71	A3C	71
M10×1	11.5	37.5	9.8	17		A	66	EMA4/10X1OR	630	630	4	4
M12×1.5	17.0	37.0	12.0	17		D	116	EMA4/12X1.5	400	400	4	4
M14×1.5	19.0	37.0	12.0	19		D	78	EMA4/14X1.5	400		4	
M16×1.5	21.0	37.0	12.0	22		D	140	EMA4/16X1.5	400		4	
G1/4	18.0	37.0	12.0	19		D	77	EMA4/1/4	400		4	
G3/8	22.0	59.0	12.0	22	19	E	141	EMA4/3/8	400		4	
G1/2	26.0	49.0	14.0	27	17	E	129	EMA4/1/2	400		4	
G1/4	19.0	37.0	12.0	19		B	82	EMA4/1/4ED	630	630	4	4

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

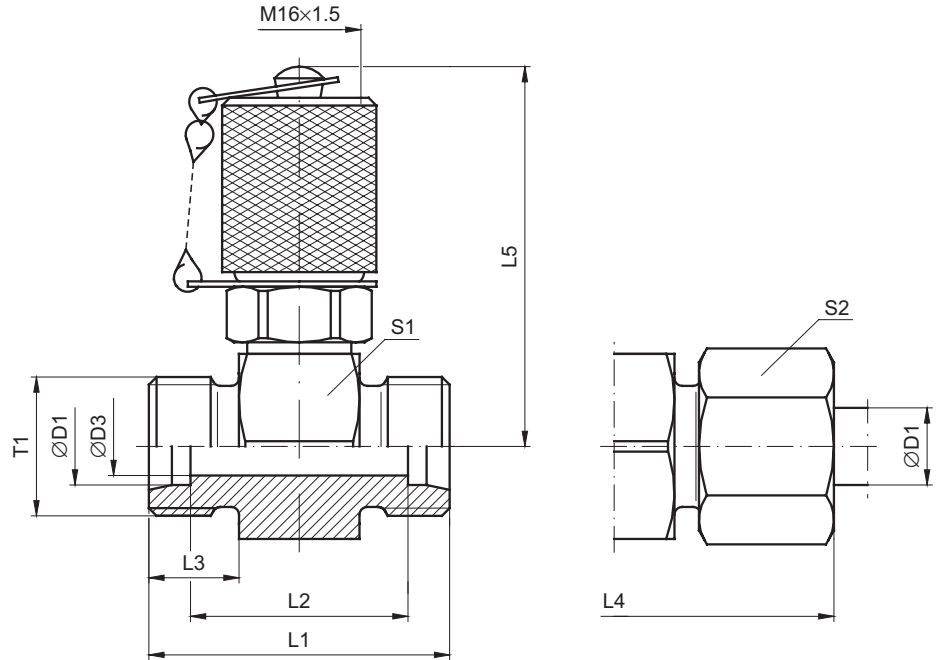
$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

*Please add the **suffixes**
below according to the material/
surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	EMA4/10X1ORA3C	NBR
Stainless Steel	71	EMA4/10XOR71	VIT

GMA4 Straight Test Point with threaded connection M 16×1.5

Series 4



Series	D1	T1	D3	L1	L2	L3	L4	L5	S1	S2	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF**	
S ⁴⁾	08	M16×1.5	5	39	25	12	55	49	24	19	141	GMA4/08SOMD	630	630	4	4
	10	M18×1.5	7	39	24	12	57	49	24	22	141	GMA4/10SOMD	630	630	4	4
	12	M20×1.5	7	39	24	12	57	49	24	24	150	GMA4/12SOMD	630	630	4	4
	14	M22×1.5	10	43	27	14	63	50	27	27	172	GMA4/14SOMD	630	630	4	4
	16	M24×1.5	12	43	26	14	63	52	30	30	195	GMA4/16SOMD	400	400	4	4
	20	M30×2	16	47	26	16	69	55	36	36	254	GMA4/20SOMD	400	400	4	4

**DF = Design Factor

Other sizes on request

¹⁾ Pressure shown = item deliverable

⁴⁾ S = heavy series

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

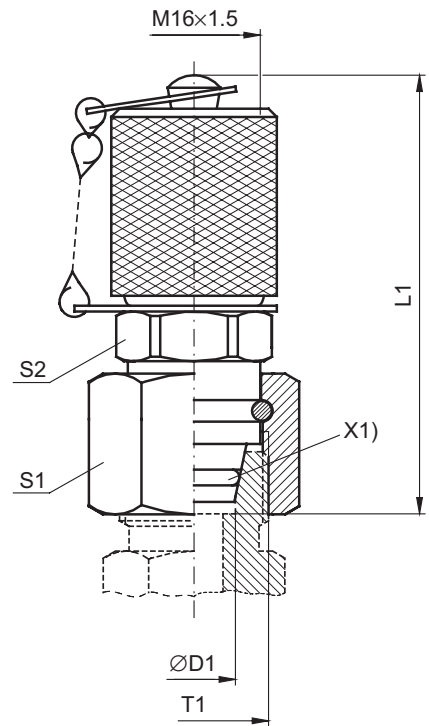
Delivery without nut and ring. Information on ordering complete fittings or alternative sealing materials see page I7.

*Please add the **suffixes** below according to the material/surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Stainless Steel	A3C	GMA4/08SLOMD71	VIT

VKA4 test point for cones with threaded connection M 16×1.5 Series 4

With 24° cone swivel nut connection



X1) O-ring

Fig. A

Series	D1	T1	L1	S1	S2	Fig.	Weight g/1 piece	Order code*	PN (bar) ¹⁾ A3C	DF**
S ⁴⁾	12	M20×1.5	54	24	19	A	121	VKA4/12S	630	4

**DF = Design Factor
Other sizes on request

¹⁾ Pressure shown = item deliverable

⁴⁾ S = heavy series

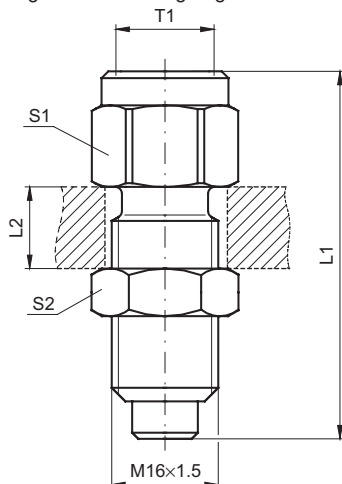
$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

*Please add the **suffixes**
below according to the material/
surface required.

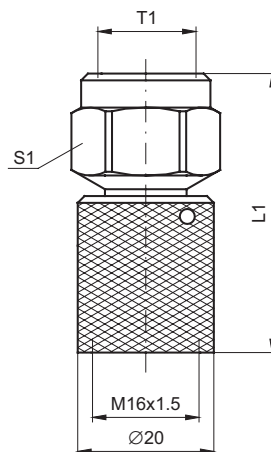
Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional. suffix needed)
Steel, zinc plated	A3C	VKA4/12SA3C	NBR

MAV...MA4 Test point pressure gauge connector with threaded connection M 16×1.5
MAVMD...MA4 Test point with threaded connection M 16×1.5
SMA4 Test point high pressure hose with threaded connection M 16×1.5 Series 4

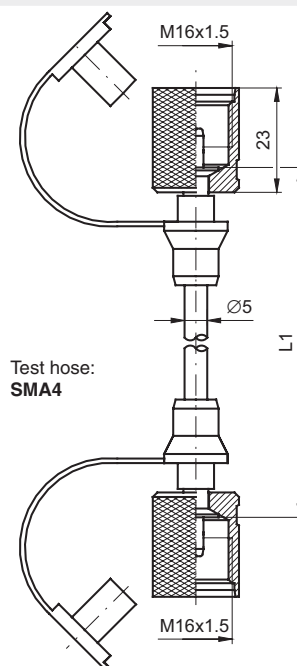
Female thread: BSP
 Sealing: sealing ring DIN 16258*



Pressure gauge connector:
MAV...MA4



Gauge-Direct-Connector:
MAVMD...MA4



Test hose:
SMA4

T1	L1	L2 max	S1	S2	Weight g/1 piece	Order code*	PN (bar) ¹⁾		DF **	
							A3C	71	A3C	71
G1/4	54.0	12	19	19	74	MAV1/4MA4	630		4.0	
G1/2	64.0	12	27	19	129	MAV1/2MA4	630		4.0	
G1/4	41.0		19		61	MAVMD1/4MA4	630		4.0	
G1/2	51.5		27		103	MAVMD1/2MA4	630		4.0	
	400.0				74	SMA4-400	630		2.5	
	630.0				79	SMA4-630	630		2.5	
	800.0				83	SMA4-800	630		2.5	
	1000.0				87	SMA4-1000	630	630	2.5	2.5
	1500.0				95	SMA4-1500		630	2.5	2.5
	2000.0				105	SMA4-2000	630		2.5	
	4000.0				137	SMA4-4000		630	2.5	

**DF = Design Factor

¹⁾ Pressure shown = item deliverable

$\frac{PN \text{ (bar)}}{10} = PN \text{ (MPa)}$

*Please add the **suffixes**
 below according to the material/
 surface required.

Order code suffixes			
Material	Suffix surface and material	Example	Standard sealing material (no additional suffix needed)
Steel, zinc plated	A3C	SMA4-1000A3C	NBR
Stainless Steel	71	SMA4-100071	VIT

* Sealing rings according to DIN 16258 for steel design of copper,
 for stainless steel design of stainless steel.

Note pressure hoses SMA4:

- Min. bending radius $r = 20 \text{ mm}$
- Working temperature -20°C up to 100°C (short time to $+120^\circ\text{C}$)
- Hoses are to be protected from fire, from sharp-corners and hot objects.

For measuring with liquid pressure media please note:
 Bleed before connecting tube!

Temperature factor of pressure rating:

up to	0°C	122 %
for	30°C	110 %
for	50°C	100 %
for	80°C	86 %
for	100°C	77 %

SensoControl®

ServiceJunior



Hand-held measuring devices

ServiceJunior: Perfect and simple measuring. On top of easy operating capturing pressure peaks in hydraulic system can be done immediately.

Measuring and displaying pressure very precised due to 4 digital display. Pressure peaks captured by displaying MAX reading.

ServiceJunior is powered by a battery.

Complete ServiceJunior Kit

- incl. Test Point Adapters and Test Hoses
- Ready to start

Data sheet 4052/D1/UK!

SensoControl®

Serviceman Series



The **SensoControl®** Serviceman Kits (SC-500-01, SC-510-01) are basic equipment to measure pressure, temperature, flow and rotational speed in hydraulics. Simple to operate; particularly suitable for on-site use.

All **SensoControl®** handmeters are provided with sensor recognition. The measuring ranges are automatically scaled and shown on the display. This prevents measuring errors and makes time-consuming adjustment work unnecessary.

Please ask for catalogue no. 4087!

SensoControl®

ServiceMaster Series



The **ServiceMaster** is a multi-channel handmeter for the simultaneous measuring of important hydraulic values: **all hydraulic parameters, such as pressure, differential pressure, flow and hydraulic power can be measured, displayed, stored and processed.**



SCKIT-250/350 – Basic and extended Kits in order to measure up to 3 hydraulic datas simultaneously.

SensoControl®

ServiceMaster Series



SensoControl® handmeters and complete measuring systems are perfectly suited measuring tools for every application. Whether they are used in the industrial area, in mobile hydraulics, for service or repair: measuring and processing of hydraulic values is the basis of safe trouble shooting. The systematic search of errors with modern means is something the service engineer simply cannot do without.



To meet the requirements in both modern industrial hydraulics and complex mobile hydraulics, we offer a range of different models.

SCKIT-400/450 – Advanced Kits for complete diagnosis including software and printer. Up to 6 channels can be measured, displayed and analyzed.

Q

SensoControl®

Pressure Controller SCPSD



Easy handling, high functionality and longterm stability service life are the main characteristics of the electronic Pressure Controller SCPSD.

Features:

- Bar/PSI/MPa
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the pressure is to be displayed, or if rapid switching or analogue signals, which have to be adjusted simply and without additional calibration, are required, then the SCPSD is the ideal solution.

SensoControl®

Temperature Controller SCTSD



Easy operation and high functionality are the main characteristics from the electronic Temperature Controller SCTSD.

Features:

- °C und °F
- compact design
- can be swivelled
- robust housing (IP 67)
- easy operation
- 2 switching outputs
- 4 limit values
- adjustable analogue output
- delay times (damping)
- hysteresis/window function
- password

If the temperature is to be displayed or temperature-dependent switching or analogue signals, which need to be adjusted simply and without additional calibration, are required, then the SCTSD is the ideal solution.

SensoControl®

Temperature sensor SCT



Compact design and high working pressure are the characteristics of the electronic temperature sensor SCT.

Features:

- working pressure up to 630 bar
- compact design
- stainless steel housing
- easy set-up
- -50°C to 250°C
- 0/4 ... 20 mA

If temperatures are to be measured at higher pressures and if a compact design is needed, then the SCT is used.

SensoControl®

Pressure sensors SCP/SCPT



Longterm stability, robust compact housing and protection from interference are the main characteristics of the electronic pressure sensor SCP.

Features:

- long term stability
- stainless steel housing
- G 1/2 + G 1/4 BSPP
- compact design
- relative and absolute pressure
- combisensor for pressure and temperature

If pressure is to be captured reliably in the long term and if compact dimensions are needed, the SCP is appropriate. If a temperature signal is additionally required, the combi-sensor is the solution.

Q

SensoControl®

Adaptors SCA



Broad range of measuring points and adaptors in galvanized finish for rapid, clean and simple adaption of sensors and measuring equipment to hydraulic systems. Plug and screw designs with various threads and seal forms are available.

Please ask for our SensoControl® catalogue!

SensoControl®

SCE-020 panel instrument



Plenty of connections, flexible display and many outputs are the main characteristics of panel instrument SCE-020.

Features:

- Inputs: Current
Voltage
Frequency
- Units freely selectable
- Adjustable display range
- Outputs: Switch
Analogue output
- Serial interface: RS 232

To display easily and flexibly various measurement values, panel instrument SCE-020 is used.

SensoControl®

SCE-100 process manager



Plenty of connections, flexible dual display and universal evaluation possibilities are the main characteristics of the Process Manager SCE-100.

Features:

- dual display
- units selectable
- 4 switch outputs
- 8 limit values
- serial interface RS 232
- min. and max. memory
- difference display
- differential switch output
- built-in clock
- password protection

If various measurement values are to be displayed simultaneously and several switch outputs are needed, the process Manager SCE 100 is used (eg. difference signal of two sensors or tank temperature monitoring).

Q

