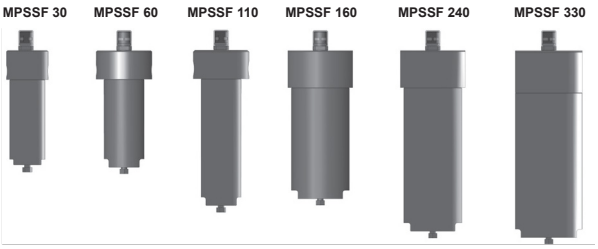
Inline Filter MPSSF and Filter for Manifold Mounting MPSSF...P

up to 130 l/min, up to 450 bar



1. TECHNICAL SPECIFICATIONS

1.1 FILTER HOUSING

Construction

The filter housings are designed in accordance with international regulations. They consist of a filter head and a screw-on filter bowl.
Standard equipment:

- without bypass valve
- connection for a clogging indicator
- oil drain plug in filter bowl

1.2 FILTER ELEMENTS

HYDAC filter elements are validated and their quality is constantly monitored according to the following standards:

- ISO 2941
- ISO 2942
- ISO 2943
- ISO 3724
- ISO 3968
- ISO 11170
- ISO 16889

Filter elements are available with the following pressure stability values:

Optimicron® (ON):	20 bar
Betamicron® (BN4HC) /-SS-SO361:	20 bar
Betamicron® (BH4HC):	210 bar
Betamicron® (BH4HC) /-SS-SO361:	210 bar
Stainless steel wire mesh (D):	210 bar
Wire mesh (W/HC):	20 bar
Chemicron® (M):	210 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	450 bar
Test pressure	742.5 bar (design pressure: 495 bar)
Temperature range	-20 °C to +100 °C
Material of filter head	316S11 EN 1.4404 stainless steel
Material of filter bowl	UNS S31803 DUPLEX EN 1.4462
Type of clogging indicator	VD (Diff. pressure indicator up to 450 bar operating pressure)
Pressure setting of clogging indicator	5 bar (others on request)
Bypass cracking pressure (optional)	6 bar (others on request)

1.4 SEALS

FPM (Viton)

1.5 INSTALLATION

Inline filter or manifold mounted filter

1.6 SPECIAL MODELS AND ACCESSORIES

- Seals in NBR, NLT, EPDM, HNBR, Kalrez®
- With bypass valve
- Without port for clogging indicator
- With gauge ports (for external piping of pressure sensors)
- Reverse flow check
- Twin indicator version
- Ex or IS differential pressure indicators
- Flanged versions available (SAE, RF, RTJ, Destec®)

1.7 SPARE PARTS

See Original Spare Parts List

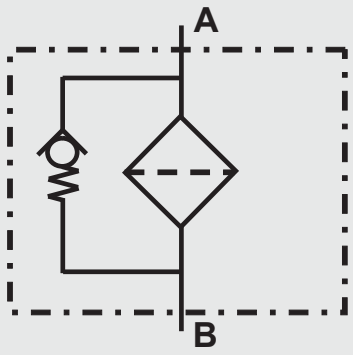
1.8 CERTIFICATES AND APPROVALS

On request

1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG
- Fire-resistant fluids HFA, HFB, HFC and HFD
- Operating fluids with high water content (>50% water content) on request

Symbol for hydraulic systems



2.MODEL CODE (also order example)
2.1 COMPLETE FILTER

MPSSF450 BH/HC 60 N2 005 B X / -V

Filter type
MPSSF450 450 bar

Filter material
ON Optimicron® Betamicron® (BN4HC) only to be used for water-glycol applications
BN/HC with "SO361"! Betamicron® (BH4HC) Betamicron® (BH4HC) only to be used for
BH/HC water-glycol applications with "SO361"!
BH/HC
M Chemicron
W/HC wire mesh
D stainless steel wire mesh

Size of filter
30, 60, 110, 160, 240, 330

Type and size of connection

Type	Port thread	Filter size 30	60	110	160	240	330
BO	¼" BSPP	●					
NO	¼" NPT	●					
B2 ½" BSPP		●	●●	●	●	●	
N2	½" NPT	●		●	●	●	
B3	¾" BSPP		●	●	●	●	●
N3	¾" NPT ●			●●	●	●	●
B4	1" BSPP					●	●
N4 1" NPT					●	●	●
B5	1¼" BSPP						●
N5	1¼" NPT						●
B6	1½" BSPP						●
N6	1½" NPT						●

Also available in autoclave design!

Filtration rating in µm
ON : 001, 003, 005, 010, 015, 020
BH/HC BN/HC, BH/HC : 003, 005, 010, 020
(/-SS-SO361) : 003, 010
M : 001, 003, 005, 010, 020
W/HC : 025, 050, 100, 200
D : 025, 040, 060, 100, 150, 200, 250

Type of clogging indicator
W without port (no clogging indicator)
A stainless steel blanking plug in indicator port
B visual
BM visual with manual reset
C electrical
D visual and electrical
BM+C visual with manual reset + electrical (= 2 indicators) – not for size 30
E ¼"-NPT gauge ports for external connection of pressure sensors – not for size 30

For other clogging indicators see brochure no. 7.050../..

Modification number
X the latest version is always supplied

Supplementary details
B. cracking pressure of bypass valve (e.g. B3 = 3 bar, B6 = 6 bar); no details = without bypass valve
EX electrical clogging indicator EX version (Eexd IIC T6; cable length 0.25 m standard)
EX/ENC electrical clogging indicator EX version (Eexd IIC T6; with IP66 junction box, M20x1.5 cable entry)
IS intrinsically safe electrical clogging indicator with cable length 0.25 m (standard)
IS/ENC intrinsically safe electrical clogging indicator with IP66 junction box (M20x1.5 cable entry)
IS/2GBC intrinsically safe electrical clogging indicator with gold contacts (e. g. suitable for PLC)
L... lamp with appropriate voltage (24, 48, 110, 220 volts)
LED 2 light-emitting diodes up to 24 volts

only for clogging indicators type "D"

RC non-return valve (not for size 30)
RCRFB non-return and bypass valve for reversible flow
TB6 with triple bypass for reversible flow (= 1 non-return valve, 2 bypass valves – not for size 30)
N NBR seals
V FPM seals
NLT nitrile low temperature seals
HNBR hydrogenated nitrile (high temperature) seals
EPDM EPDM seals
K Kalrez® seals
SS-SO361 stainl. steel elements with polyamide support fibre, optimised for water-glycol (only for BN/HC and BH/HC material)

Example for MPSSF450 in manifold version: **MPSSF450 BH/HC 60 P N2 005 B X / -V**

Sizes
60P, 160P, 240P

2.2 REPLACEMENT ELEMENT

0060 D 003 BN4HC /-V-SS-SO361

Size
0030, 060, 0110, 160, 0240, 0330

Type
D

Filtration rating in µm
ON : 001, 003, 005, 010, 015, 020
BH4HC : 003, 005, 010, 020
BN4HC, BH4HC (/-SS-SO361) : 003, 010 W/HC :
025, 050, 100, 200

Filter material
ON, BN4HC, BH4HC, W/HC

Supplementary details
SS-SO361 stainl. steel elements, polyamide support fibre
N, V, NLT, HNBR, EPDM, K (for descriptions, see Point 2.1)

2.3 REPLACEMENT ELEMENT - PROCESS TECHNOLOGY

060-DH-100-D-V

Size
030, 060, 110, 160, 240, 330

Type
DH

Filtration rating in µm Chemicron® (M) :
001, 003, 005, 010, 020
Wire mesh (D) : 025, 040, 060, 100, 150, 200, 250

Filter material
M, D

Supplementary details
N, V, NLT, HNBR, EPDM, K (for descriptions, see Point 2.1)

2.4 REPLACEMENT CLOGGING INDICATOR

VD 5 D . X /-V-L24

Type
VD differential pressure measurement

Pressure setting
5 standard 5 bar, others on request

Type of clogging indicator
(see Point 2.1)

Modification number
X the latest version is always supplied

Supplementary details
L..., LED, V, W (for descriptions, see Point 2.1)

3. FILTER CALCULATION / SIZING

The total pressure drop of a filter at a certain flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

$\Delta p_{housing}$ = (see Point 3.1)

$\Delta p_{element} = \frac{Q \cdot SK^* \cdot viscosity}{1000 \quad 30}$ (*see Point 3.2)

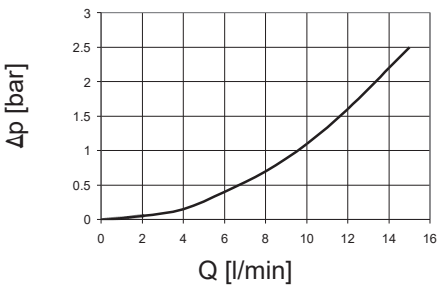
For ease of calculation, our Filter Sizing Program is available on request free of charge.

NEW: Sizing online at www.hydac.com

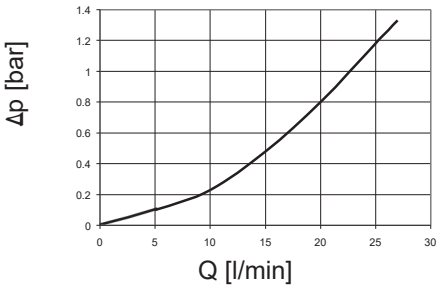
3.1 Δp-Q HOUSING CURVES BASED ON ISO 3968

The housing curves apply to mineral oil with a density of 0.86 kg/dm³ and a kinematic viscosity of 30 mm²/s. In this case, the differential pressure changes proportionally to the density.

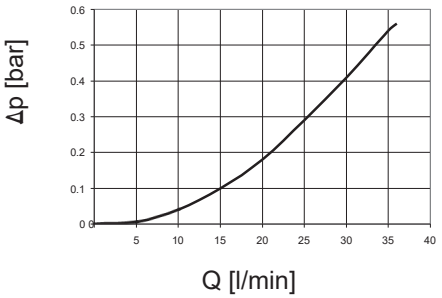
Size 30: ¼" BSPP/NPT



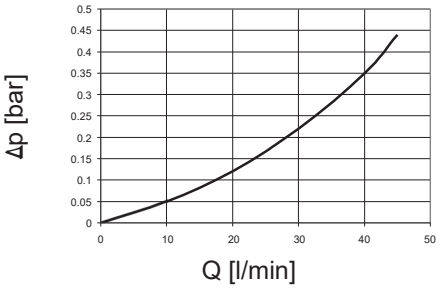
Size 30: ½" BSPP/NPT



Size 60-110: ½" BSPP/NPT

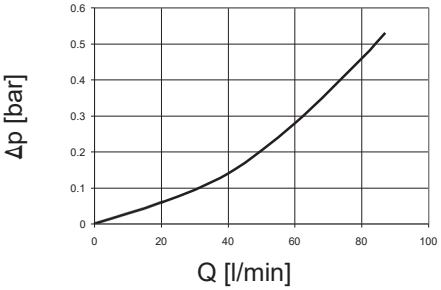


Size 60-110: ¾" BSPP/NPT



Other curves on request

Size 60-240: 1" BSPP/NPT



3 **GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS** The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

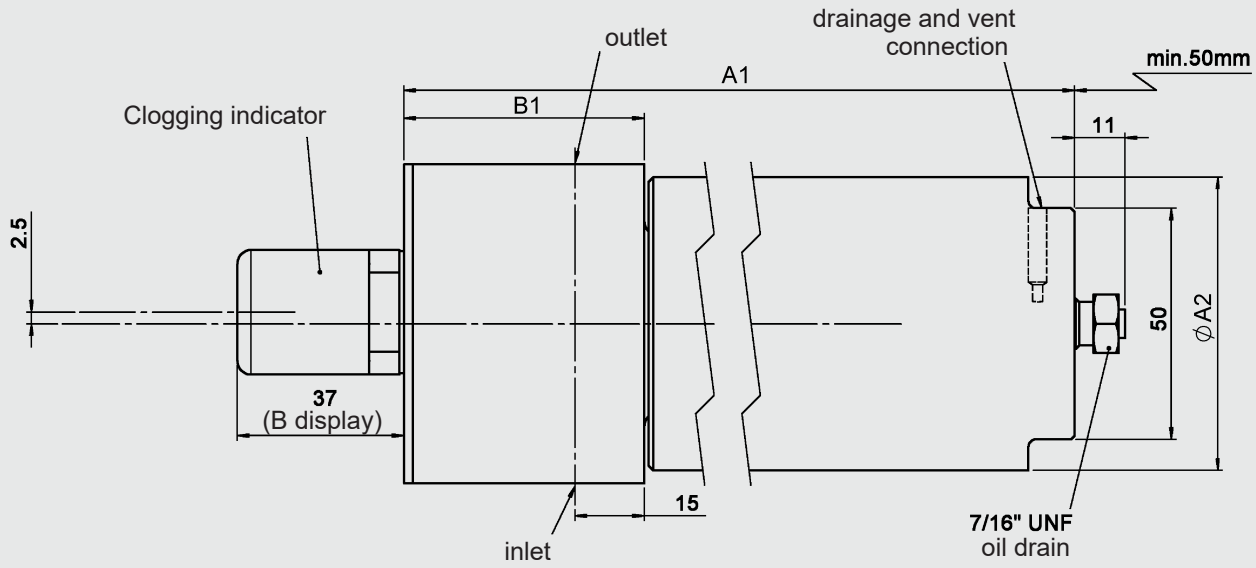
MPSSF	ON						W/HC
	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm	–
30	77.8	63.9	43.3	22.8	14.0	11.3	–
60	53.5	26.0	18.3	12.1	9.78	6.32	0.757
110	25.8	13.4	9.61	6.06	4.63	2.99	0.413
160	18.5	11.0	7.7	4.1	3.71	3.18	0.283
240	11.5	6.9	5.34	3.19	2.44	2.1	0.189
330	8.23	4.19	3.37	2.46	1.55	1.22	0.138

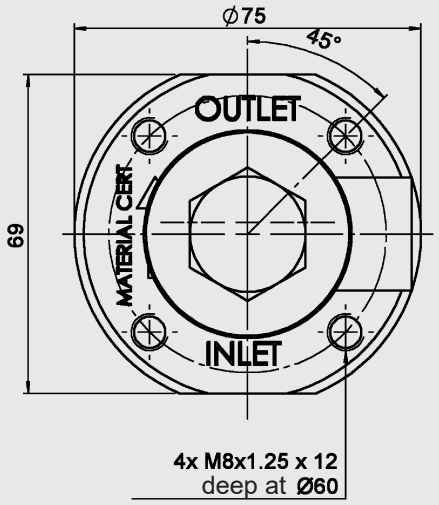
MPSSF	BN4HC		BH4HC			
	3 µm	10 µm	3 µm	5 µm	10 µm	20 µm
30	63.9	22.8	91.2	50.7	36.3	19.0
60	28.9	13.2	58.6	32.6	18.1	12.2
110	14.9	6.6	25.4	14.9	8.9	5.6
160	13.1	4.6	16.8	10.4	5.9	4.4
240	8.2	3.6	10.6	6.8	3.9	2.9
330	5.4	3.0	7.7	4.5	2.8	2.0

4. DIMENSIONS

Inline Filter MPSSF450

Size 30

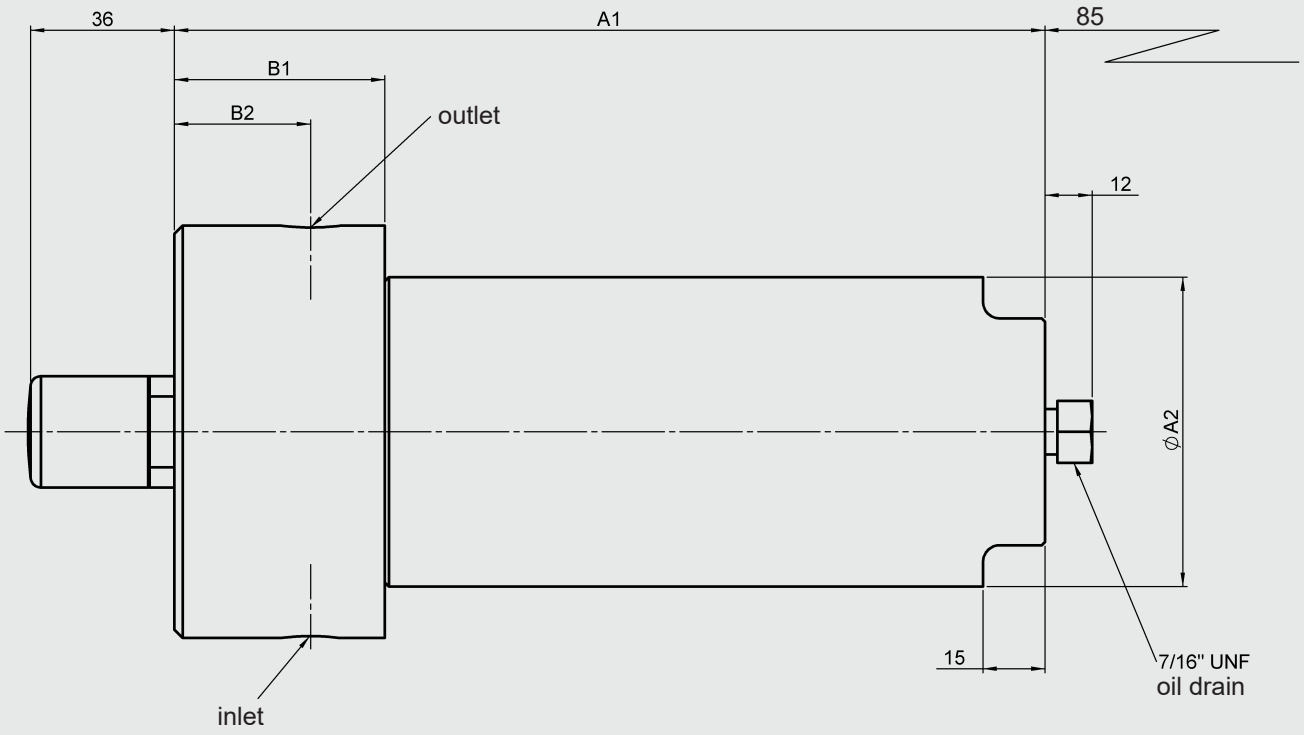


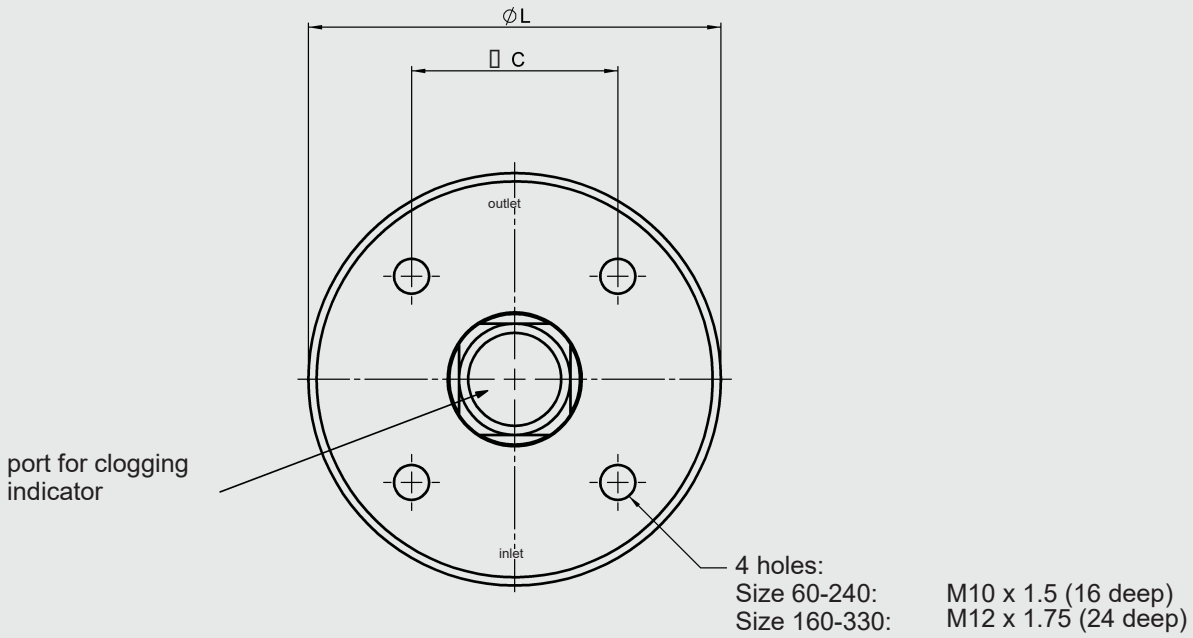


MPSSF	A1	A2	B1
30	205	63.5	52
30 (1/4" NPT)	196	63.5	44

Inline Filter MPSSF450

Size 60 - 330

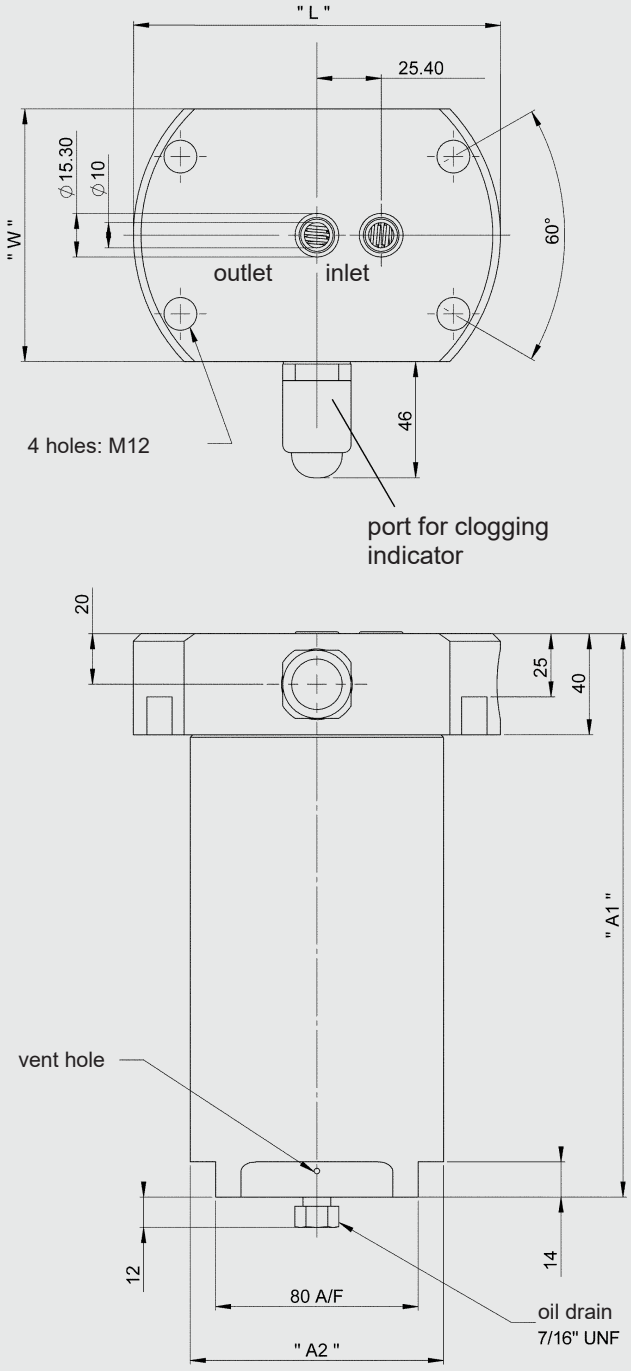




MPSSF	A1	A2	B1	B2 ±5mm	C	L	W
60	208	72	51	35	50	100	93
110	277	72	51	35	50	100	93
160	264	104	66	38	65	127	116
240	322	104	66	36	60	127	116
330	333	120	75	45	65	127	120

Inline filter, manifold-mounted MPSSF450...P

Size 60P, 160P, 240P



Type	A1	A2	W	L	PCD mounting holes	Weight incl. element [kg]
60P	201	72	88	100	76.2	7.50
160P	204	104	100	145	124.5	13.35
240P	261	104	100	145	124.5	18.93

NOTES

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.