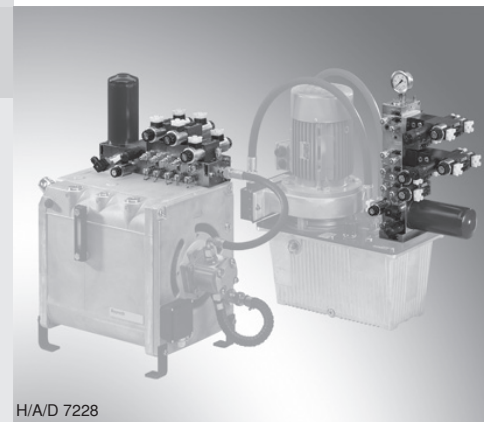


Control module

RE 51156/05.13
Replaces: 09.11

1/96

Type IH15B

Component series 1X
Maximum operating pressure 350 bar
Maximum flow 30 l/min

H/A/D 7228

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• Pressure cut-off module	28	• Sandwich module with lowering brake valve	33 to 34
• Pressure relief module	17 and 26	• Sandwich module with cartridge valves	42 to 44
• Pressure relief module with circulation valve	27	• Sandwich module with accumulator shut-off block	56 to 57
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		• Project planning information	80
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Module with threaded connection for pipeline installation		Accessories	
• Tank connection module for sandwich module with threaded connection	77	• Filter element	94
• Sandwich module with threaded connection	78 to 79	• Assembly tool for filter cartridge	94
		Dimensions	
		• Unit dimensions	95
		• Tank break-through	95

Features

- Compact design
- No piping of the control
- Few joints
- Variable set-up
- Can be combined individually
- Direct mounting on power unit tank cover; external set-up possible, as well
- Ready for connection

Description, general

The IH15B control modules serves the realization of complete hydraulic controls. They can be fitted and mounted individually. The directional valve modules and seat valve modules can be combined.

Using the tank connection modules, the control modules can be directly mounted to the tank cover of the oil tank. Using the modules for external attachment, the control modules can,

however, also be installed arbitrarily into every system. The reducing modules allow for attachment of the IH15B modules to IH15A and IH20B modules.

The modules have preferably been designed for hydraulic controls for low-flow actuators up to a flow of 30 l/min. They are connected by means of three tie rods.

Technical data (For applications outside these parameters, please consult us!)

hydraulic

Installation position	Any ¹⁾		
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524 part 2 ²⁾ ; fast biodegradable hydraulic fluids according to VDMA 24568 (see 90221); HETG (rape seed oil) ²⁾ ; HEPG (polyglycols); HEES (synthetic esters) ³⁾ ; other hydraulic fluids upon request		
Hydraulic fluid temperature range	°C	-30 to +80 (with NBR seals) -20 to +80 (with FKM seals) (observe the admissible viscosity range of the valves!)	
Ambient temperature range	°C	-30 to +50	
Viscosity range	mm ² /s	2.8 to 500 ¹⁾	
Maximum admissible degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)	Class 20/18/15 ¹⁾		
Valve pressure rating	Refer to the related data sheet		
Maximum flow of the directional seat valves type: KSER1...	q_v	l/min	20 (2/2 directional seat valve) 12 (3/2 directional seat valve)

electric

Voltage type	Direct voltage			
Available voltage ⁴⁾	U	V	24	
Voltage tolerance (nominal voltage)		%	±10	
Power consumption	P	W	19 and/or 30 ¹⁾	
Switching time according to ISO 6403	On	T	ms	25 to ≤ 80
	Off	T	ms	10 to 25
Switching frequency		cy/h	up to 15,000	
Protection class according to EN 60529 ⁵⁾ (VDE 0470-1) DIN 40050-9	IP 65			
Coil temperature ⁶⁾		°C	150	

¹⁾ Observe the valve details

²⁾ Suitable for NBR **and** FKM seals

³⁾ Suitable **only** for FKM seals

⁴⁾ Special voltage on request

⁵⁾ With mating connector mounted and locked

⁶⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the European standards EN563 and EN982 need to be adhered to!

Project planning information

When designing the control with accumulator you have to make sure that the accumulator is protected against inadmissible overpressure by means of a type examination-tested pressure relief valve. The type-examination tested pressure relief valve must not assume control tasks. The set pressure of the type-examination tested pressure relief valve must be less than or equal to the maximum admissible operating pressure of the accumulator.

In order to achieve the best utilization of the accumulator volume possible as well as long service life, compliance with the following nitrogen filling pressure value is recommended:

$$p_0 = 0.9 \times p_{(\text{minimum operating pressure})}$$

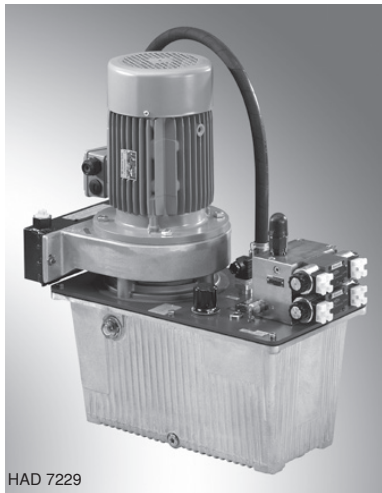
When attaching the IH15B control to a UPE5 drive module, the following has to be observed:

The total length of the IH15B control should not be longer than the UPE5 drive module.

Maximum recommended total length $l = 500$ mm.

Please consult us if the total length of the required control should be longer.

Overview of the modules

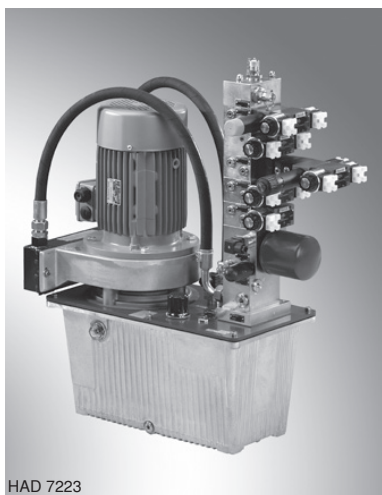


HAD 7229

Basic module "G"

Basic module "G"

- Basic module with integrated pressure relief valve for pressure setting
- Basic module with two valve stations and integrated pressure relief valve
- if the "G" basic modules are used, no further stacking is possible
- For more information see page 8

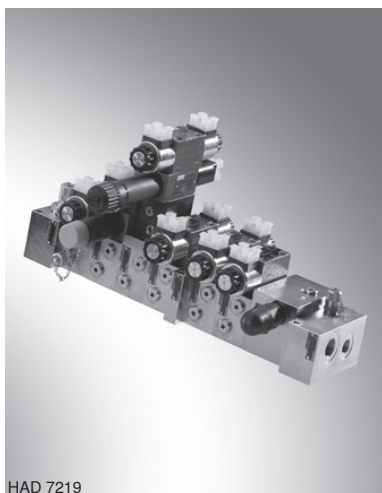


HAD 7223

Directional seat valve module "W", "S"

Directional seat valve module, "W", "S"

- Directional valve modules
 - Allow the design of controls using valves with porting pattern according to DIN 24340 form A
- Seat valve modules basically consist of:
 - A pressure relief module
 - One or several control modules
 - One end module
- The control is designed depending on the relevant application
- For more information see page 14



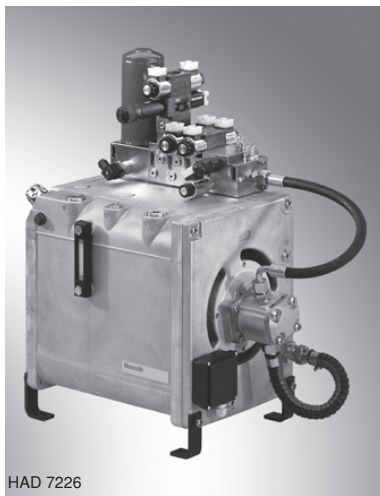
HAD 7219

Module for external attachment

Module for external attachment

- Allows for the attachment of the directional seat valve modules to any hydraulic system or any machine
- For more information see page 63

Overview of the modules



HAD 7226

Module for drive module UPE5

Module for drive module UPE5

- Allows for the attachment of the modules to the UPE5 drive module (catalog 51145)
- For more information see page 80

Short designation	Basic module, type "G"	Page
BA	Tank connection module	9
BAP	Tank connection module with external P connection at the front side	9
BAP-2PT	Tank connection module with two external 2x P and T connections at the front side	10
BAY	Tank connection module with Y channel	11
GDB	Pressure relief module	12
G2AABTDB	Module AA - B - T with pressure relief valve and 2 valve stations	13

Short designation	Directional seat valve module, type "W", "S"	Page
BA	Tank connection module	15
BAP	Tank connection module with external P connection at the front side	15
BAY	Tank connection module with Y channel	16
BAZG	Tank connection module for sandwich module with threaded connection	77
DF40	Pressure filter module (P line $p_{max} = 250$ bar)	20
DF40Y	Pressure filter module with Y channel (P line $p_{max} = 250$ bar)	20
DFS40	Pressure filter module filter bowl vertical (P line $p_{max} = 250$ bar)	21
F30DB	Filter module with pressure relief valve (T line $p_{max} = 7$ bar)	22
F30DBU	Filter module with pressure relief valve and circulation valve (T line $p_{max} = 7$ bar)	24
F60DB	Filter module with pressure relief valve (T line $p_{max} = 7$ bar)	22
F60DBU	Filter module with pressure relief valve and circulation valve (T line $p_{max} = 7$ bar)	24
SDA	Pressure cut-off module	28
SDB	Pressure relief module	26
SDBU	Pressure relief module with circulation valve	27
SEDBSA	End module with pressure relief valve, accumulator and stop valve	59
SEDBSAP1	End module with pressure relief valve, accumulator and stop valve with P1 channel	59
SP	Control module P	46
SPDV	Control module P with throttle valve	49
SPA3	Control module SPA3	51
SPA3P1	Control module SPA3 with P1 channel	51
SPBAT2DB	Control module SPBAT2DB	50
SPP1	Control module P with P1 channel	46
SPDVP1	Control module P with throttle valve and P1 channel	49

Overview of the modules

Short designation	Directional seat valve module, type "W", "S"	Page
SR	Control module with check valve	53
SR2	Control module with check valve	55
SRP1	Control module P with check valve with P1 channel	53
SR2P1	Control module P with check valve with P1 channel	55
ST	Control module T	48
STP1	Control module T with P1 channel	48
SSB	Accumulator shut-off module	61
SSBP1	Accumulator shut-off module with P1 channel	61
SU	Circulation module	45
SUP1	Circulation module with P1 channel	45
WDB	Pressure relief module with one valve station	17
WDR	Pressure reducing module	29
WDRP1	Pressure reducing module with P1 channel	29
WZDR-A	Sandwich module with pressure reducing valve in channel A	31
WZDR-A/A	Sandwich module with pressure reducing valve in channel A and drain cock	31
WZDR-AB	Sandwich module with pressure reducing valve in channel AB	31
WZDR-AB/A	Sandwich module with pressure reducing valve in channel AB and drain cock	31
WZDR-P	Sandwich module with pressure reducing valve in channel P	32
WSE	Directional seat valve module	58
WSEP1	Directional seat valve module with P1 channel	58
WSK	Directional valve seat valve cooler module	18
WSKB	Directional valve seat valve cooler module with bypass	19
WSKY	Directional valve seat valve cooler module with Y channel	18
WSKYB	Directional valve seat valve cooler module with Y channel and bypass	19
WZ	Sandwich module (for directional valve size 6)	35
WZ-008	Sandwich module in special design -008 (for directional valve size 6)	39
WZ2AABB	Sandwich module, 2 valve stations, AA and BB channel connected (for directional valve size 6)	41
WZ2AP	Sandwich module, 2 valve stations, AP channel connected (for directional valve size 6)	41
WZ3	Sandwich module with 3 valve stations (for directional valve size 6)	37
WZ4	Sandwich module with 4 valve stations (for directional valve size 6)	37
WZ4-008	Sandwich module with 4 valve stations in special design -008 (for directional valve size 6)	39
WZE	Sandwich module with cartridge valves (for directional valve size 6)	42
WZEP1	Sandwich module with cartridge valves with P1 channel (for directional valve size 6)	43
WZG	Sandwich module with threaded connection for pipeline installation	78
WZP1	Sandwich module with P1 channel (for directional valve size 6)	35
WZSB	Sandwich module with lowering brake valve	33
ZSSB	Sandwich module with accumulator shut-off block	56
ZSSBP1	Sandwich module with accumulator shut-off module with P1 channel	56

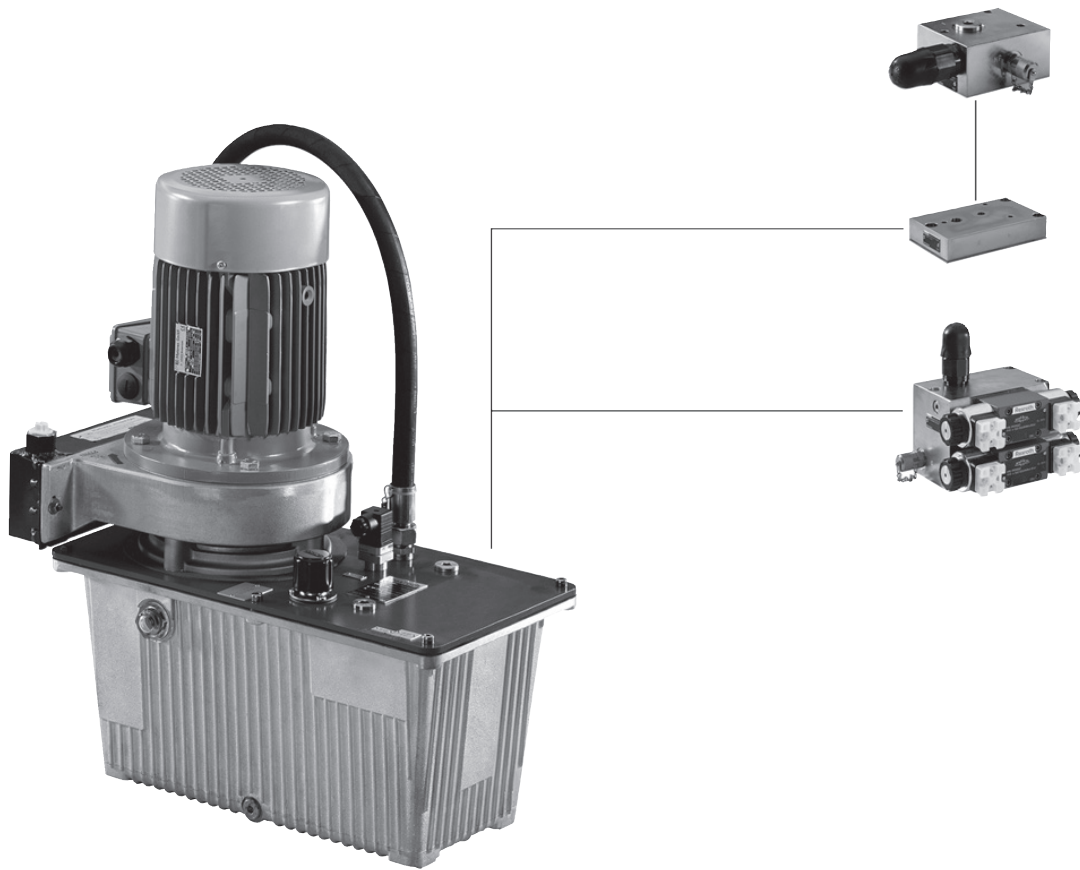
Overview of the modules

Short designation	Module for external attachment	Page
A	Connection module	65
AD	Connection module with through holes	66
ADB	Connection module with pressure relief valve	67
AY	Connection module with Y channel	65
E	End module	72
EP1	End module with P1 channel	72
Z	Sandwich module	68
ZG	Sandwich module with mounting thread for threaded bolt	70
ZGP1	Sandwich module with mounting thread for threaded bolt and P1 channel	70
ZGPT	Sandwich module with PT interruption and mounting thread for threaded bolt	71
ZGTP1	Sandwich module with PTP1 interruption and mounting thread for threaded bolt	71

Short designation	Reducing module, type "R"	Page
ZPT	Sandwich module with PT interruption	69
ZP1	Sandwich module with P1 channel	68
RBAIH15A	Tank connection module with reduction from IH15B to IH15A	73
RIH15AR	Reducing module IH15B to IH15A (right)	75
RIH20BL	Reducing module IH15B to IH20B (left)	74
RIH20BR	Reducing module IH15B to IH20B (right)	76

Short designation	Module for drive module UPE5, type "UPE5"	Page
UPE5A	Connection module	81
UPE5AR	Connection module with check valve	82
UPE5AY	Connection module with Y channel	81
UPE5AYR	Connection module with Y channel and check valve	82
UPE5BA	Tank connection module	83
UPE5BAP1	Tank connection module with P1 channel	83
UPE5F30	Filter module (T line $p_{\max} = 7$ bar)	84
UPE5F30P1	Filter module with P1 channel (T line $p_{\max} = 7$ bar)	84
UPE5F60	Filter module (T line $p_{\max} = 7$ bar)	84
UPE5F60P1	Filter module with P1 channel (T line $p_{\max} = 7$ bar)	84
UPE5SSB	Accumulator shut-off module	86
UPE5SSBP1	Accumulator shut-off module with P1 channel	86

Basic module, type "G": Attachment



Basic module, type "G" (dimensions in mm)

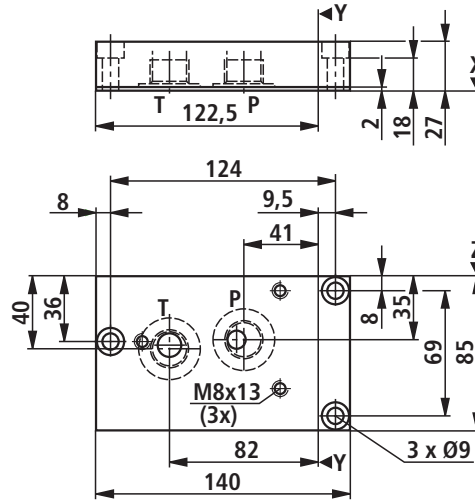
Tank connection module, type "BA"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
R904101347	Tank connection module	IH15MB-1X/BA

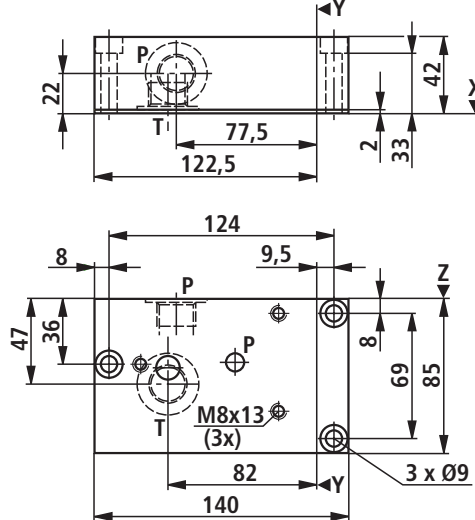
Tank connection module with P connection at the front side, type "BAP"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Tank connection module with external P connection at the front side	IH15MB-1X/BAP- ²⁶ <input type="text"/>
R904101844		IH15MB-1X/BAP-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Basic module, type "G" (dimensions in mm)

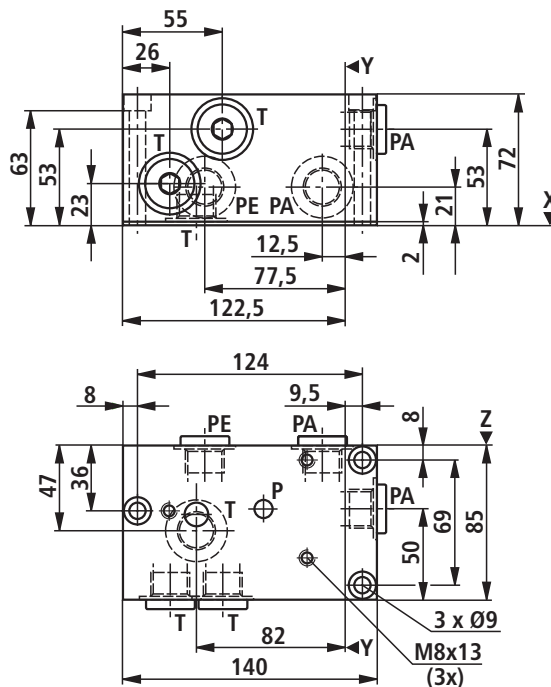
Tank connection module with 2x P and T connection at the front side, type "BAP-2PT"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Tank connection module with 2x external PT connections at the front side	IH15MB-1X/BAP-2PT- <input type="text" value="26"/>
R901134710		IH15MB-1X/BAP-2PT/V

<input type="text" value="26"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Basic module, type "G" (dimensions in mm)

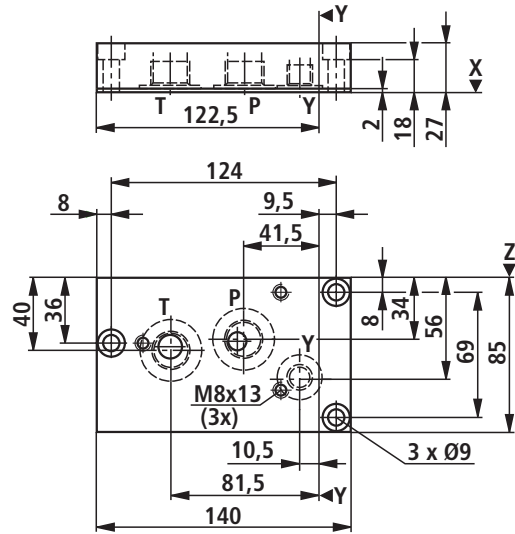
Tank connection module with Y channel, type "BAY"

Symbol



Unit dimensions

Dimension Z = 85 mm

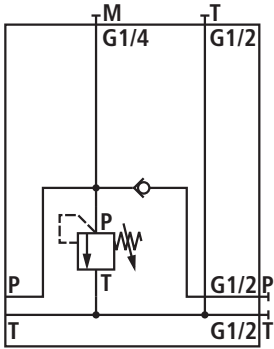


Material no.	Device designation	Type designation
	Tank connection module with Y channel	IH15MB-1X/BAY
R904101843		IH15MB-1X/BAY

Basic module, type "G" (dimensions in mm)

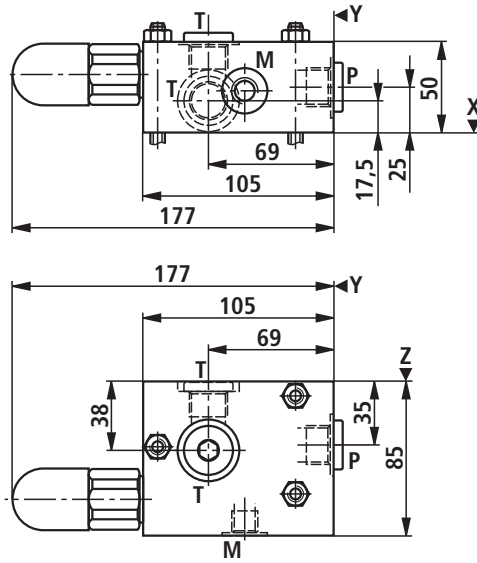
Pressure relief module, type "GDB"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Pressure relief module	IH15EB-1X/GDB- <input type="checkbox"/> 1 <input type="checkbox"/> 2 / <input type="checkbox"/> 14 <input type="checkbox"/> 26
R904101893		IH15EB-1X/GDB-S100/M/V
R904101842		IH15EB-1X/GDB-S200/M/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar 50 bar 100 bar 200 bar 315 bar 400 bar = 25 = 50 = 100 = 200 = 315 = 400

Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive)

More pressure ratings on request!

	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 140 bar 210 bar 330 bar	= 50E = 100E = 140E = 210E = 330E
--	---	--	---

Characteristic curve for type-examination tested pressure relief valves type: DBD../..E
Type testing according to Pressure Equipment Directive 97/23/EC

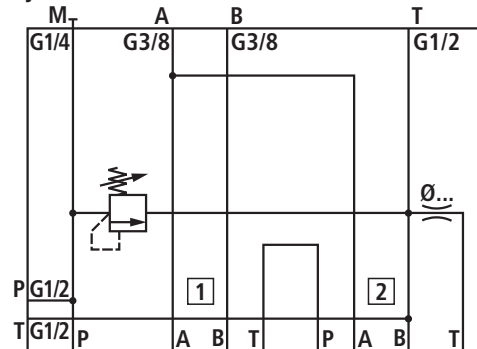
See page 88

<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material Seal material	FKM = V NBR = M

Basic module, type "G" (dimensions in mm)

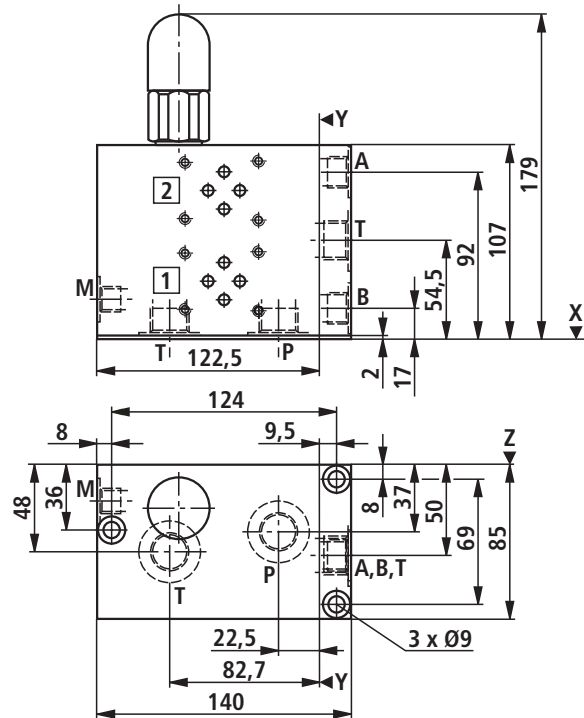
Module block AA - B - T, type "G2AABTDB"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Module block AA - B - T with pressure relief valve	IH15EB-1X/G2AABTDB- 1 2 14 27 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
R904101796		IH15EB-1X/G2AABTDB-S200/M/B10/V

1	<input type="checkbox"/> Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
2	<input type="checkbox"/> Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar = 25 50 bar = 50 100 bar = 100 200 bar = 200 315 bar = 315 400 bar = 400

Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive)

More pressure ratings on request!

		Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 140 bar 210 bar 330 bar	= 50E = 100E = 140E = 210E = 330E
--	--	---	--	---

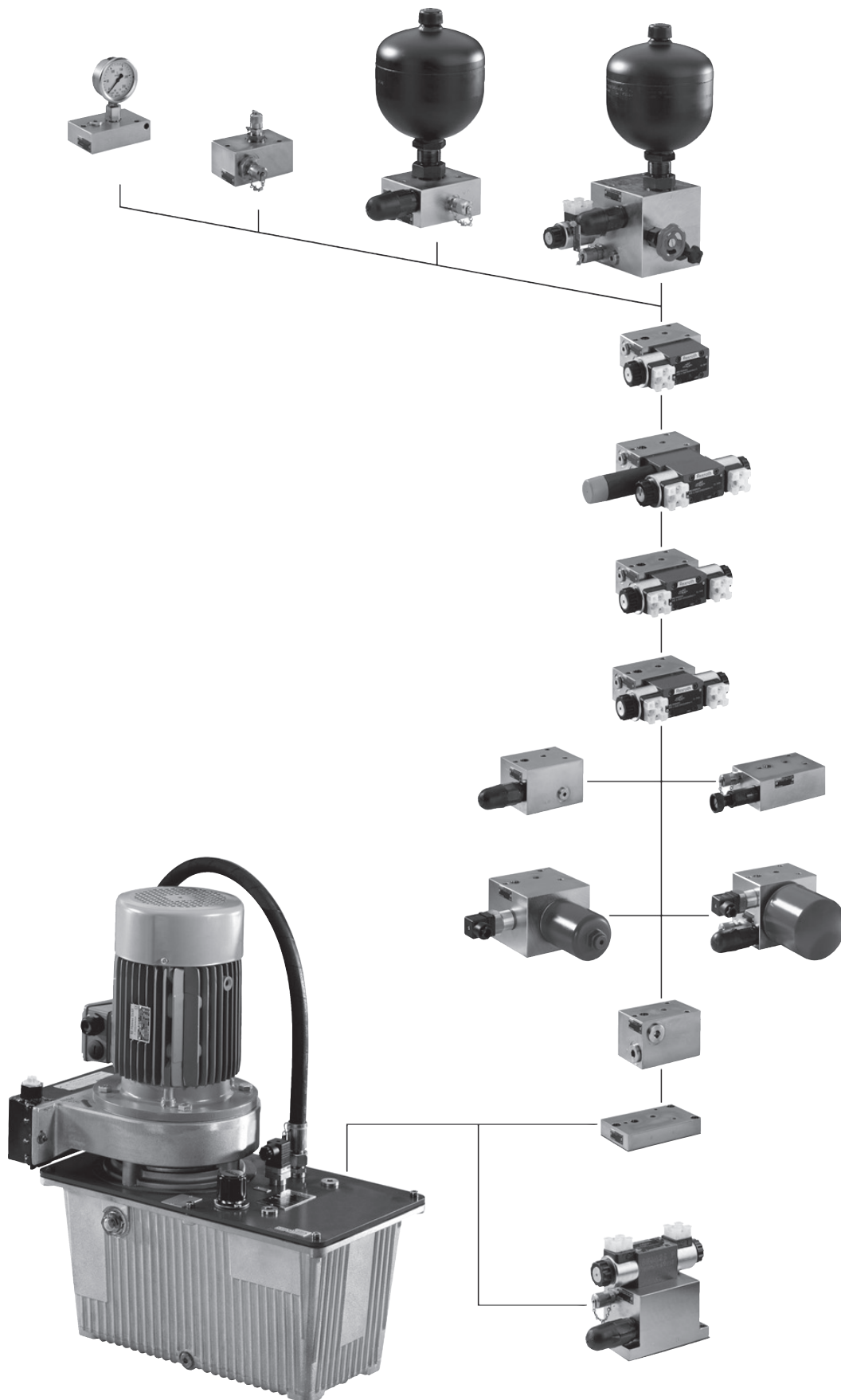
Characteristic curve for type-examination tested pressure relief valves type: DBD...E

Type testing according to Pressure Equipment Directive 97/23/EC

See page 88

14	<input type="checkbox"/> Pressure monitoring	With measuring port Without pressure monitoring	= M = O
26	<input type="checkbox"/> Seal	Seal material Seal material	FKM = V NBR = M
27	<input type="checkbox"/> Throttle	Without throttle Throttle diameter Throttle diameter	= no code = B10 = B25

Directional seat valve module, type "W", "S": Attachment



Directional seat valve module, type "W", "S" (dimensions in mm)

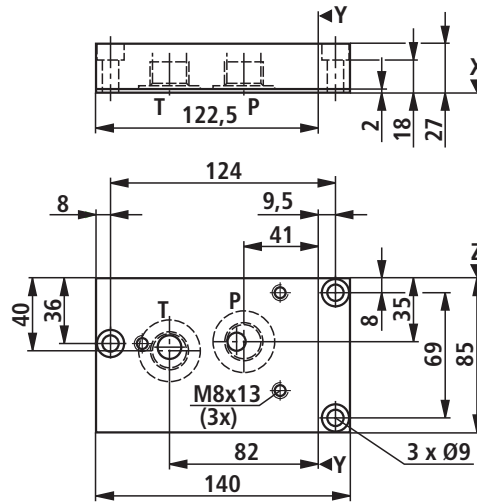
Tank connection module, type "BA"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
R904101347	Tank connection module	IH15MB-1X/BA

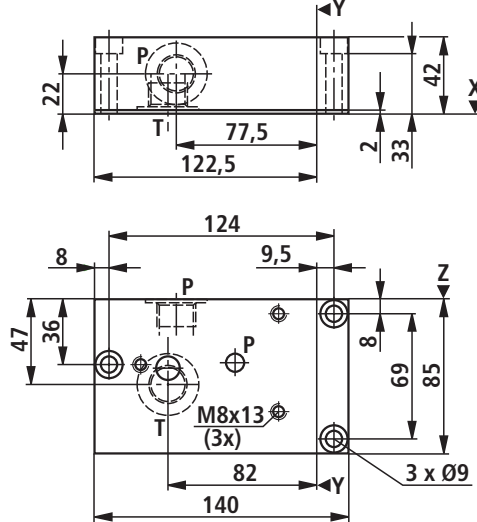
Tank connection module with P connection at the front side, type "BAP"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Tank connection module with external P connection at the front side	IH15MB-1X/BAP- ²⁶ <input type="text"/>
R904101844		IH15MB-1X/BAP-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Directional seat valve module, type "W", "S" (dimensions in mm)

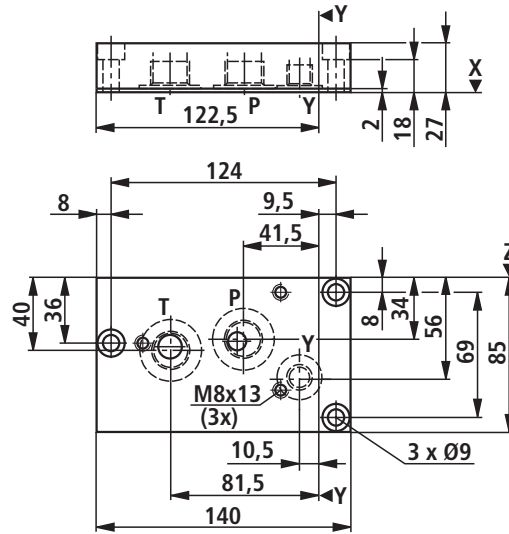
Tank connection module with Y channel, type "BAY"

Symbol



Unit dimensions

Dimension Z = 85 mm

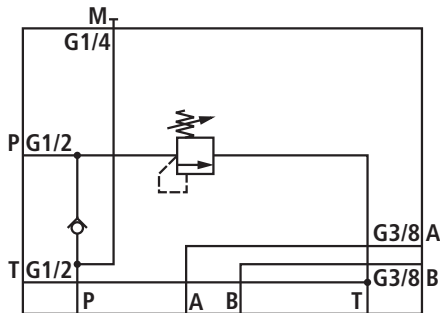


Material no.	Device designation	Type designation
	Tank connection module with Y channel	IH15MB-1X/BAY
R904101843		IH15MB-1X/BAY

Directional seat valve module, type "W", "S" (dimensions in mm)

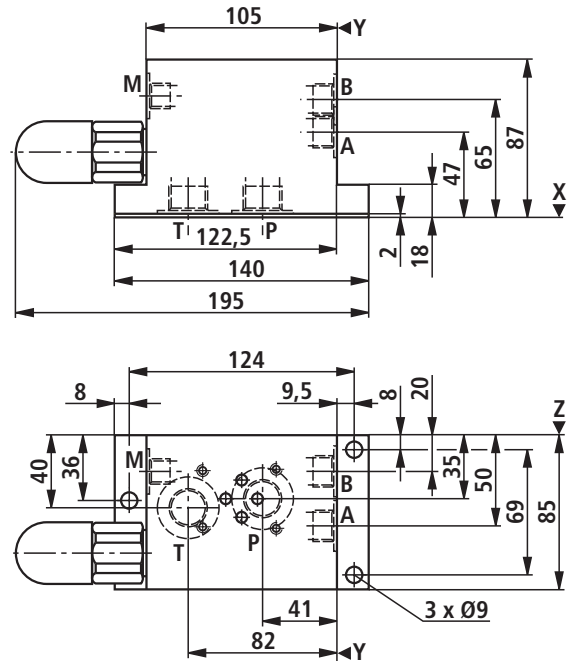
Pressure relief module, type "WDB"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Pressure relief module with one valve station	IH15EB-1X/WDB- <input type="checkbox"/> 1 <input type="checkbox"/> 2 / <input type="checkbox"/> 14 <input type="checkbox"/> 26
R904101759		IH15EB-1X/WDB-S200/M/V
R901042115		IH15EB-1X/WDB-S200/O/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar = 25 50 bar = 50 100 bar = 100 200 bar = 200 315 bar = 315 400 bar = 400

Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive)

More pressure ratings on request!

	Setting pressure up to max.	50 bar	= 50E
	Setting pressure up to max.	100 bar	= 100E
	Setting pressure up to max.	140 bar	= 140E
	Setting pressure up to max.	210 bar	= 210E
	Setting pressure up to max.	330 bar	= 330E

Characteristic curve for type-examination tested pressure relief valves type: DBD...E
Type testing according to Pressure Equipment Directive 97/23/EC

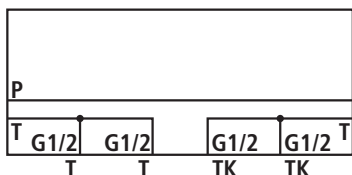
See page 88

<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material Seal material	FKM = V NBR = M

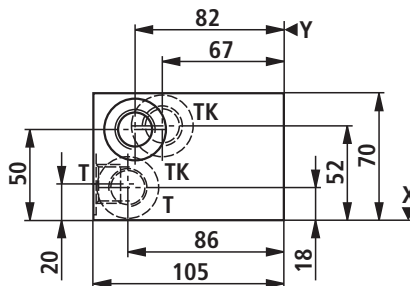
Directional seat valve module, type "W", "S" (dimensions in mm)

Cooler module, type "WSK"

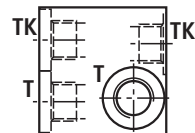
Symbol



Unit dimensions

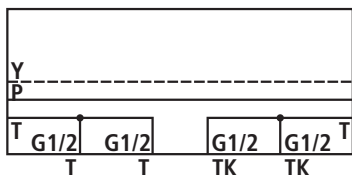


Dimension Z = 70 mm



Cooler module with Y channel, type "WSKY"

Symbol



Material no.	Device designation	Type designation
	Cooler module	IH15MB-1X/WSK- ²⁶ <input type="checkbox"/>
R904101577		IH15MB-1X/WSK-V

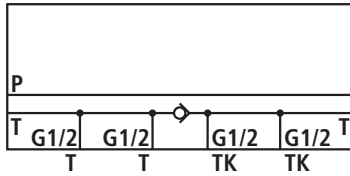
Material no.	Device designation	Type designation
	Cooler module with Y channel	IH15MB-1X/WSKY- ²⁶ <input type="checkbox"/>
R904101753		IH15MB-1X/WSKY-V

²⁶ <input type="checkbox"/>	Seal	Seal material	FKM	= V
		Seal material	NBR	= M

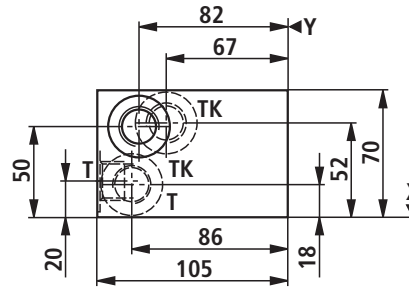
Directional seat valve module, type "W", "S" (dimensions in mm)

Cooler module with bypass, type "WSKB"
(cracking pressure 3 bar)

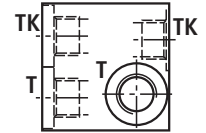
Symbol



Unit dimensions

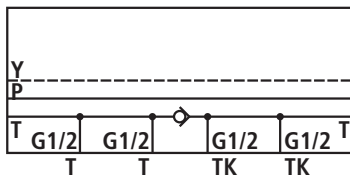


Dimension Z = 70 mm



Cooler module with Y channel and bypass,
type "WSKYB" (cracking pressure 3 bar)

Symbol



Material no.	Device designation	Type designation
	Cooler module with bypass	IH15MB-1X/WSKB- <input type="text" value="26"/>
R901165376		IH15MB-1X/WSKB-V

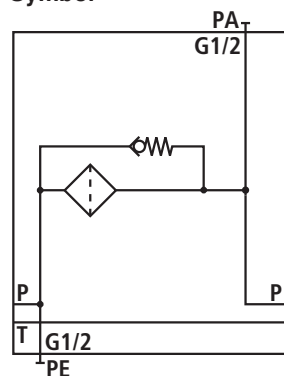
Material no.	Device designation	Type designation
	Cooler module with Y channel and bypass	IH15MB-1X/WSKYB- <input type="text" value="26"/>
R901165377		IH15MB-1X/WSKYB-V

<input type="text" value="26"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

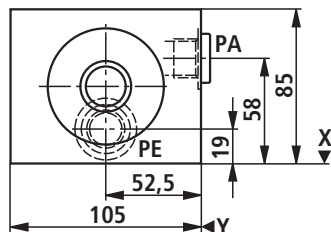
Directional seat valve module, type "W", "S" (dimensions in mm)

Pressure filter module, type "DF40" ($q_{Vmax} = 40$ l/min, $p_{max} = 250$ bar)

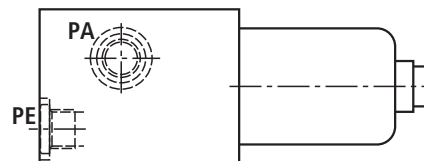
Symbol



Unit dimensions



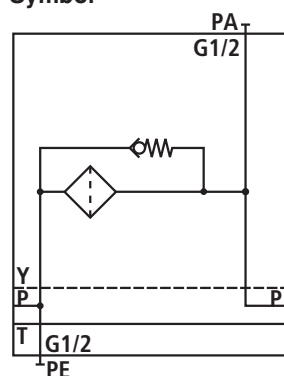
Dimension Z = 213 mm



Pressure filter module with Y channel, type "DF40Y"

($q_{Vmax} = 40$ l/min, $p_{max} = 250$ bar)

Symbol



Installation information:

Wind the filter cartridge as tight as possible on the block.
Then, wind it back by 1/8 to 1/4 of a rotation.

Material no.	Device designation	Type designation
	Pressure filter module ($p_{max} = 250$ bar)	IH15EB-1X/DF40- <input type="checkbox"/> ¹⁹ / <input type="checkbox"/> ²⁰ / <input type="checkbox"/> ²⁶
R901278451		IH15EB-1X/DF40-06/E/V
R901278454		IH15EB-1X/DF40-10/E/V

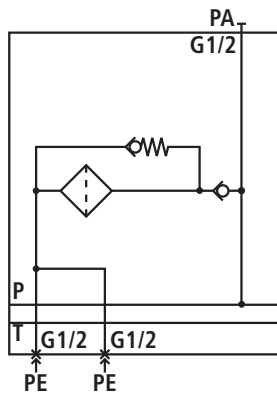
Material no.	Device designation	Type designation
	Pressure filter module with Y channel ($p_{max} = 250$ bar)	IH15EB-1X/DF40Y- <input type="checkbox"/> ¹⁹ / <input type="checkbox"/> ²⁰ / <input type="checkbox"/> ²⁶
R901278455		IH15EB-1X/DF40Y-06/E/V

<input type="checkbox"/> ¹⁹	Filter rating	06 μ m 10 μ m	= 06 = 10
<input type="checkbox"/> ²⁰	Clogging indicator	Without clogging indicator Visual clogging indicator Electric clogging indicator	= A = O = E
<input type="checkbox"/> ²⁶	Seal	Seal material	FKM = V NBR = M

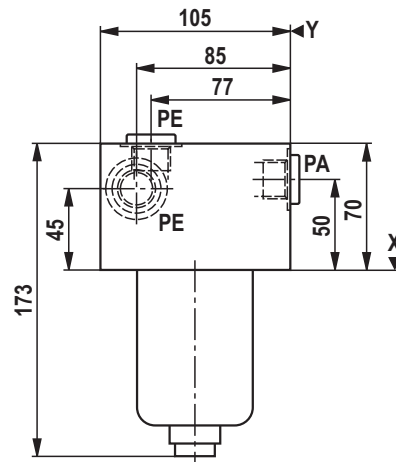
Directional seat valve module, type "W", "S" (dimensions in mm)

Pressure filter module for vertical installation position,
type "DFS40" ($q_{Vmax} = 40$ l/min, $p_{max} = 250$ bar)

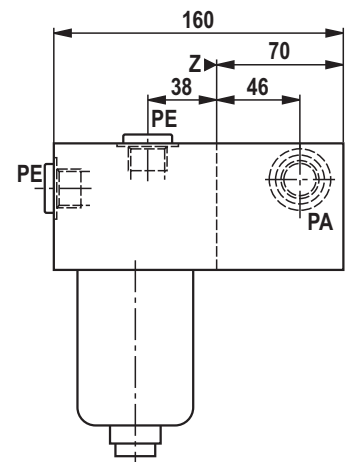
Symbol



Unit dimensions



Dimension Z = 70 mm



Installation information:

Wind the filter cartridge as tight as possible on the block.
Then, wind it back by 1/8 to 1/4 of a rotation.

Material no.	Device designation	Type designation
	Pressure filter module for vertical installation position ($p_{max} = 250$ bar)	IH15EB-1X/DFS40- <input type="text" value="19"/> / <input type="text" value="20"/> / <input type="text" value="26"/>
R901278456		IH15EB-1X/DFS40-10/A/V
R901278457		IH15EB-1X/DFS40-10/E/V
R901278458		IH15EB-1X/DFS40-10/O/V
R901278459		IH15EB-1X/DFS40-06/E/V

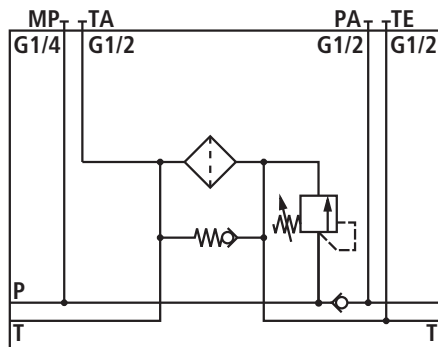
<input type="text" value="19"/>	Filter rating	06 μ m 10 μ m	= 06 = 10
<input type="text" value="20"/>	Clogging indicator	Without clogging indicator Visual clogging indicator Electric clogging indicator	= A = O = E
<input type="text" value="26"/>	Seal	Seal material	FKM NBR
			= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Filter module with pressure relief valve,
type "F30DB", "F60DB" ($p_{max} = 7 \text{ bar}$) –

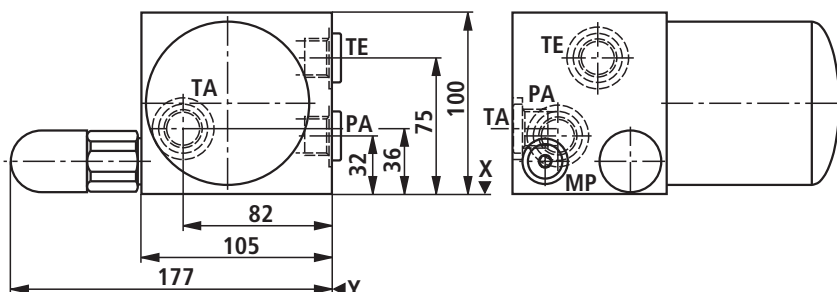
Filter module with pressure relief valve cannot be directly
attached to the UPE5 drive module.

Symbol



Unit dimensions

Dimension Z = 180 mm F30DB
Dimension Z = 290 mm F60DB



Installation information:

Wind the filter cartridge as tight as possible on the block.
Then, wind the filter cartridge by further 1/3 of a rotation.

Material no.	Device designation	Type designation
	Filter module with pressure relief valve	IH15EB-1X/F30DB- 1 2 14 19 20 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
R901068157		IH15EB-1X/F30DB-S100/M/10/A/V
R904101858		IH15EB-1X/F30DB-S100/M/10/E/V
R904101859		IH15EB-1X/F30DB-S100/M/10/O/V
R901068229		IH15EB-1X/F30DB-S100/O/10/A/V
R901068227		IH15EB-1X/F30DB-S100/O/10/E/V
R901068228		IH15EB-1X/F30DB-S100/O/10/O/V

Material no.	Device designation	Type designation
	Filter module with pressure relief valve	IH15EB-1X/F60DB- 1 2 14 19 20 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
R901068161		IH15EB-1X/F60DB-S100/M/10/A/V
R904101881		IH15EB-1X/F60DB-S100/M/10/E/V
R904101880		IH15EB-1X/F60DB-S100/M/10/O/V
R901068225		IH15EB-1X/F60DB-S100/O/10/A/V
R901068223		IH15EB-1X/F60DB-S100/O/10/E/V
R901068224		IH15EB-1X/F60DB-S100/O/10/O/V

Directional seat valve module, type "W", "S"

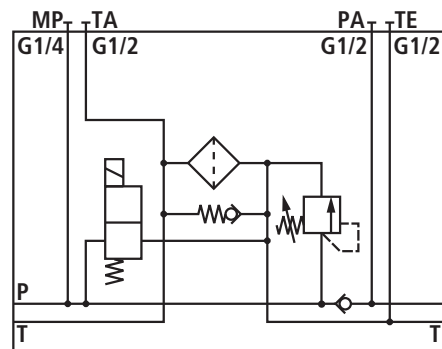
<input type="checkbox"/>	¹ Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob		= S = H = A
<input type="checkbox"/>	² Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar 50 bar 100 bar 200 bar 315 bar 400 bar	= 25 = 50 = 100 = 200 = 315 = 400
Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!				
		Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 140 bar 210 bar 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC				See page 88
<input type="checkbox"/>	¹⁴ Pressure monitoring	With measuring port Without pressure monitoring		= M = O
<input type="checkbox"/>	¹⁹ Filter rating	06 µm 10 µm		= 06 = 10
<input type="checkbox"/>	²⁰ Clogging indicator	Without clogging indicator Visual clogging indicator Electric clogging indicator		= A = O = E
<input type="checkbox"/>	²⁶ Seal	Seal material Seal material	FKM NBR	= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Filter module with pressure relief valve and circulation valve, type "F30DBU", "F60DBU" ($p_{\max} = 7 \text{ bar}$) –

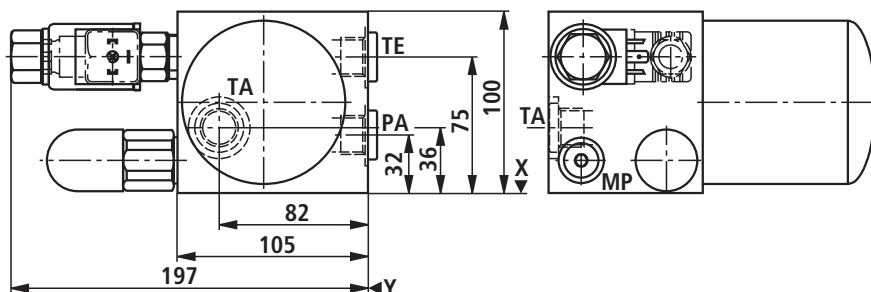
Filter module with pressure relief valve and circulation valve cannot be directly attached to the UPE5 drive module.

Symbol



Unit dimensions

Dimension Z = 180 mm F30DBU
Dimension Z = 290 mm F60DBU



Installation information:

Wind the filter cartridge as tight as possible on the block. Then, wind the filter cartridge by further 1/3 of a rotation.

Material no.	Device designation	Type designation
	Filter module with pressure relief valve and circulation valve	IH15EB-1X/F30DBU- <input type="text"/> ¹ <input type="text"/> ² / <input type="text"/> ₁₄ <input type="text"/> ₄ <input type="text"/> ₈ / <input type="text"/> ₁₉ / <input type="text"/> ₂₀ / <input type="text"/> ₂₆
R901070590		IH15EB-1X/F30DBU-S100/MPG24/10/A/V
R904101867		IH15EB-1X/F30DBU-S100/MPG24/10/E/V
R904101868		IH15EB-1X/F30DBU-S100/MPG24/10/O/V
R901070591		IH15EB-1X/F30DBU-S200/MPG24/10/A/V
R904101869		IH15EB-1X/F30DBU-S200/MPG24/10/E/V
R904101870		IH15EB-1X/F30DBU-S200/MPG24/10/O/V

Material no.	Device designation	Type designation
	Filter module with pressure relief valve and circulation valve	IH15EB-1X/F60DBU- <input type="text"/> ¹ <input type="text"/> ² / <input type="text"/> ₁₄ <input type="text"/> ₄ <input type="text"/> ₈ / <input type="text"/> ₁₉ / <input type="text"/> ₂₀ / <input type="text"/> ₂₆
R901070592		IH15EB-1X/F60DBU-S100/MPG24/10/A/V
R904101348		IH15EB-1X/F60DBU-S100/MPG24/10/E/V
R904101873		IH15EB-1X/F60DBU-S100/MPG24/10/O/V
R901070593		IH15EB-1X/F60DBU-S200/MPG24/10/A/V
R904101872		IH15EB-1X/F60DBU-S200/MPG24/10/E/V
R904101871		IH15EB-1X/F60DBU-S200/MPG24/10/O/V

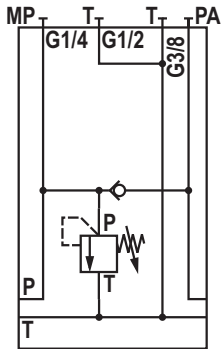
Directional seat valve module, type "W", "S"

<input type="checkbox"/>	1 Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob		= S = H = A
<input type="checkbox"/>	2 Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar 50 bar 100 bar 200 bar 315 bar 400 bar	= 25 = 50 = 100 = 200 = 315 = 400
Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!				
		Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 140 bar 210 bar 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC				See page 88
<input type="checkbox"/>	4 Designation of the 2/2 seat valve	Normally closed Normally open		= N = P
<input type="checkbox"/>	8 Solenoid voltage of the seat valves	Volt	24 V DC	= G24
<input type="checkbox"/>	14 Pressure monitoring	With measuring port Without pressure monitoring		= M = O
<input type="checkbox"/>	19 Filter rating	06 µm 10 µm		= 06 = 10
<input type="checkbox"/>	20 Clogging indicator	Without clogging indicator Visual clogging indicator Electric clogging indicator		= A = O = E
<input type="checkbox"/>	26 Seal	Seal material Seal material	FKM NBR	= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

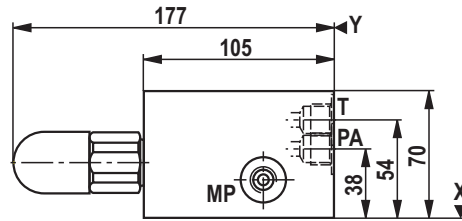
Pressure relief module, type "SDB"

Symbol



Unit dimensions

Dimension Z = 85 mm



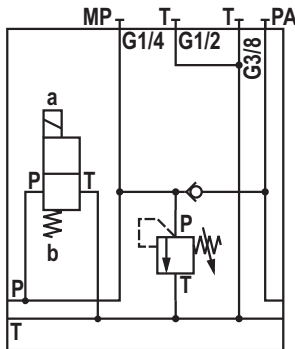
Material no.	Device designation	Type designation
	Pressure relief module	IH15EB-1X/SDB- <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>
R901065894		IH15EB-1X/SDB-A100/M/V
R901065267		IH15EB-1X/SDB-A100/O/V
R901065895		IH15EB-1X/SDB-H100/M/V
R901065269		IH15EB-1X/SDB-H100/O/V
R901065896		IH15EB-1X/SDB-S100/M/V
R904101875		IH15EB-1X/SDB-S100/O/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. 25 bar Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 200 bar Setting pressure up to max. 315 bar Setting pressure up to max. 400 bar	= 25 = 50 = 100 = 200 = 315 = 400
Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!			
		Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 140 bar Setting pressure up to max. 210 bar Setting pressure up to max. 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC			See page 88
<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material FKM Seal material NBR	= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

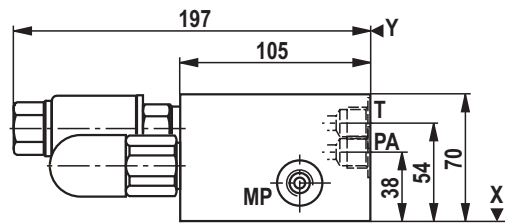
Pressure relief module with circulation valve, type "SDBU"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Pressure relief module with circulation valve	IH15EB-1X/SDBU- 1 2 14 4 8 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/>
R901039998		IH15EB-1X/SDBU-A200/MPG24/V
R901040000		IH15EB-1X/SDBU-A200/OPG24/V
R901039996		IH15EB-1X/SDBU-H200/MPG24/V
R901089997		IH15EB-1X/SDBU-H200/OPG24/V
R904101825		IH15EB-1X/SDBU-S50/MPG24/V
R904101343		IH15EB-1X/SDBU-S100/MPG24/V
R904101833		IH15EB-1X/SDBU-S200/MPG24/V
R901039995		IH15EB-1X/SDBU-S200/OPG24/V
R904101882		IH15EB-1X/SDBU-S315/MPG24/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. 25 bar Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 200 bar Setting pressure up to max. 315 bar Setting pressure up to max. 400 bar	= 25 = 50 = 100 = 200 = 315 = 400

Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive)
More pressure ratings on request!

		Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 140 bar Setting pressure up to max. 210 bar Setting pressure up to max. 330 bar	= 50E = 100E = 140E = 210E = 330E
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Characteristic curve for type-examination tested pressure relief valves type: DBD...E
Type testing according to Pressure Equipment Directive 97/23/EC

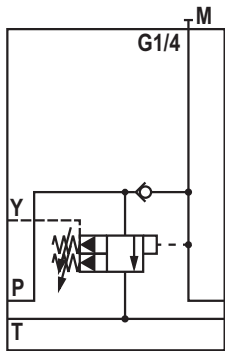
See page 88

<input type="checkbox"/> 4	Designation of the 2/2 seat valve	Normally closed Normally open	= N = P
<input type="checkbox"/> 8	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material	FKM = V NBR = M

Directional seat valve module, type "W", "S" (dimensions in mm)

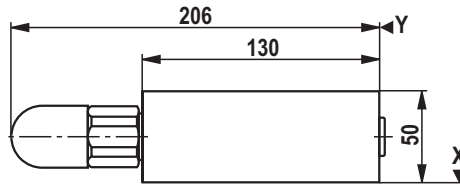
Pressure cut-off module, type "SDA"

Symbol



Unit dimensions

Dimension Z = 95 mm



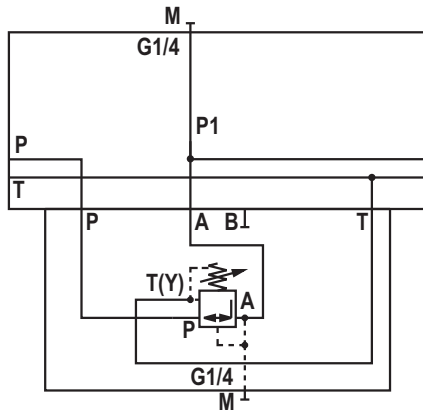
Material no.	Device designation	Type designation
	Pressure cut-off module	IH15EB-2X/SDA- <input type="checkbox"/> ²³ / <input type="checkbox"/> ²⁴ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901152738		IH15EB-2X/SDA-2/K/M/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring		= M = O
<input type="checkbox"/> ²³ Adjustment type	Hexagon with protective cap		= 2
<input type="checkbox"/> ²⁴ Pressure rating of the pressure cut-off valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 200 bar 350 bar	= C = F = K = R
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM NBR	= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

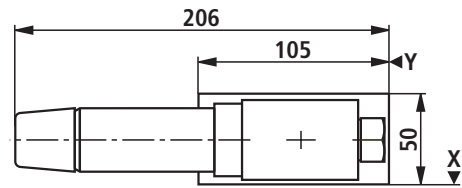
Pressure reducing module, type "WDR"

Symbol



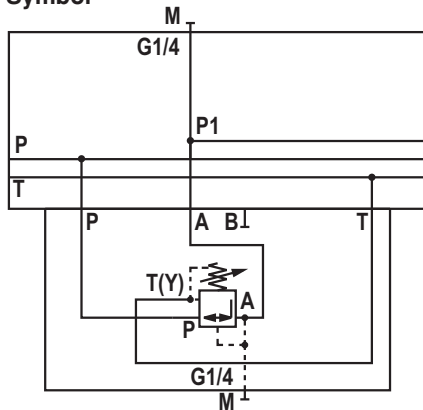
Unit dimensions

Dimension Z = 120 mm



Pressure reducing module with P1 channel, type "WDRP1"

Symbol



Material no.	Device designation	Type designation
	Pressure reducing module	IH15MB-1X/WDR- <input type="text" value="16"/> / <input type="text" value="17"/> / <input type="text" value="14"/> / <input type="text" value="26"/>
R901066169		IH15MB-1X/WDR-1/210/M/V
R901066168		IH15MB-1X/WDR-1/210/O/V
R904101852		IH15MB-1X/WDR-2/75/M/V
R904102085		IH15MB-1X/WDR-2/75/O/V
R904101559		IH15MB-1X/WDR-2/150/M/V
R904101853		IH15MB-1X/WDR-2/210/M/V
R904101854		IH15MB-1X/WDR-2/315/M/V
R901066167		IH15MB-1X/WDR-3/210/M/V
R901066166		IH15MB-1X/WDR-3/210/O/V
R901066165		IH15MB-1X/WDR-7/210/M/V
R901066164		IH15MB-1X/WDR-7/210/O/V

Directional seat valve module, type "W", "S"

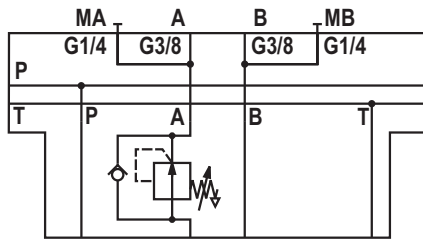
Material no.	Device designation	Type designation
	Pressure reducing module with P1 channel	IH15MB-1X/WDRP1- <input type="checkbox"/> ¹⁶ / <input type="checkbox"/> ¹⁷ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101755		IH15MB-1X/WDRP1-1/150/M/V
R901067481		IH15MB-1X/WDRP1-1/150/O/V
R904101636		IH15MB-1X/WDRP1-2/75/M/V
R901067480		IH15MB-1X/WDRP1-2/75/O/V
R904101855		IH15MB-1X/WDRP1-2/150/M/V
R901067478		IH15MB-1X/WDRP1-2/150/O/V
R901067482		IH15MB-1X/WDRP1-3/210/M/V
R901067483		IH15MB-1X/WDRP1-3/210/O/V
R901067485		IH15MB-1X/WDRP1-7/210/M/V
R901067486		IH15MB-1X/WDRP1-7/210/O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring	= M = O	
<input type="checkbox"/> ¹⁶ Adjustment element at the pressure reducing valve	Rotary knob Setscrew with hexagon and protective cap Lockable rotary knob with scale Rotary knob with scale	= 1 = 2 = 3 = 7	
<input type="checkbox"/> ¹⁷ Secondary pressure	Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure	25 bar 75 bar 150 bar 210 bar 315 bar	= 25 = 75 = 150 = 210 = 315
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM NBR	= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

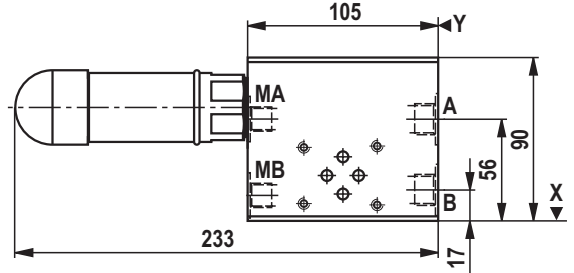
Sandwich module with pressure reducing valve in channel A, type "WZDR-A"

Symbol



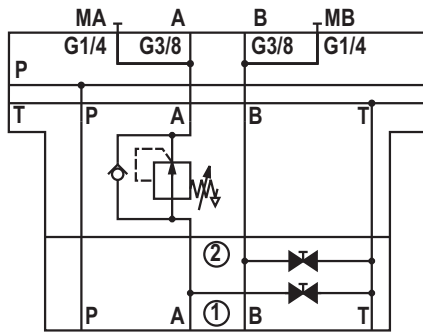
Unit dimensions

Dimension Z = 95 mm



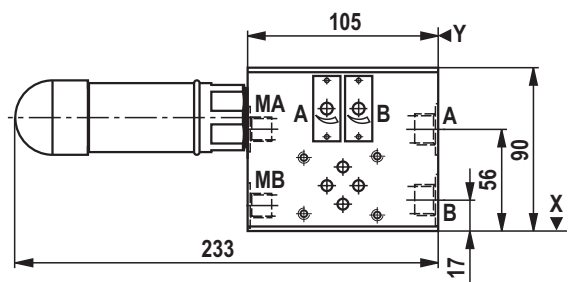
Sandwich module with pressure reducing valve in channel A and drain cock, type "WZDR-A/A"

Symbol



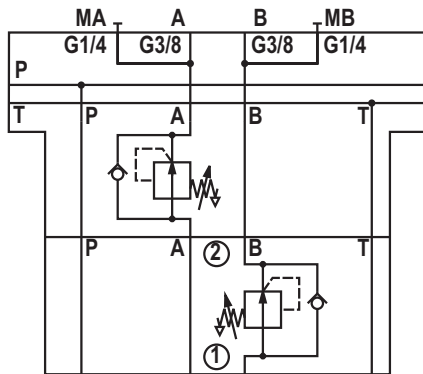
Unit dimensions

Dimension Z = 145 mm



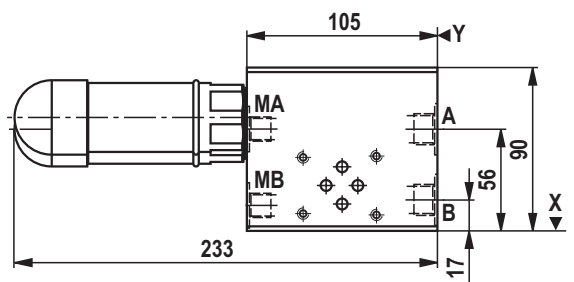
Sandwich module with pressure reducing valve in channel AB, type "WZDR-AB"

Symbol



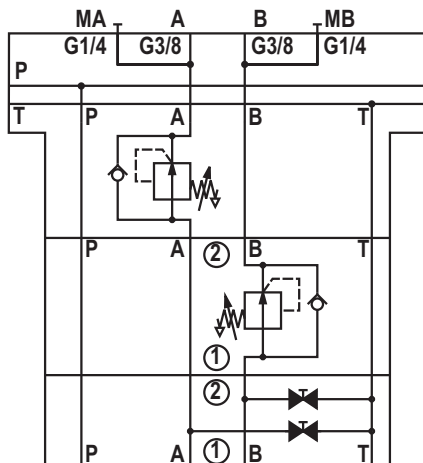
Unit dimensions

Dimension Z = 155 mm



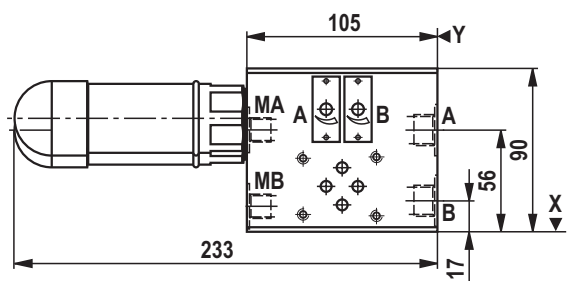
Sandwich module with pressure reducing valve in channel AB and drain cock, type "WZDR-AB/A"

Symbol



Unit dimensions

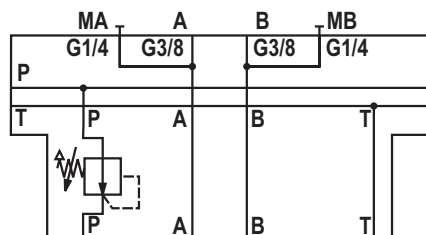
Dimension Z = 205 mm



Directional seat valve module, type "W", "S" (dimensions in mm)

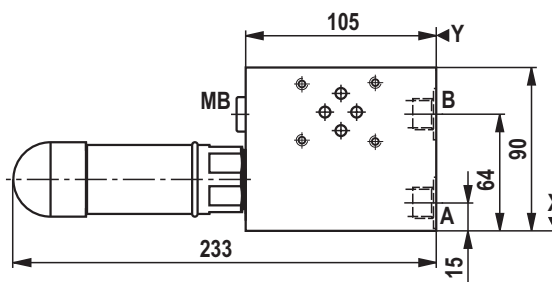
Sandwich module with pressure reducing valve in channel P, type "WZDR-P"

Symbol



Unit dimensions

Dimension Z = 95 mm



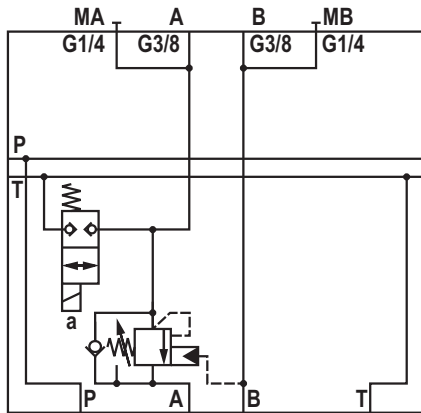
Material no.	Device designation	Type designation
	Sandwich module with pressure reducing valve	IH15EB-1X/WZDR- <input type="checkbox"/> ₂₉ / <input type="checkbox"/> ₃₂ <input type="checkbox"/> ₃₃ / <input type="checkbox"/> ₃₄ / <input type="checkbox"/> ₁₄ / <input type="checkbox"/> ₂₆
R904102218		IH15EB-1X/WZDR-AB/2/100/M/V
R904102219		IH15EB-1X/WZDR-AB/2/100D/M/V
R901040102		IH15EB-1X/WZDR-AB/2/210/M/V
R901063736		IH15EB-1X/WZDR-AB/2/210D/M/V
R904101639		IH15EB-1X/WZDR-A/2/100/M/V
R904102089		IH15EB-1X/WZDR-A/2/100D/M/V
R901024724		IH15EB-1X/WZDR-A/2/210D/M/V
R904101807		IH15EB-1X/WZDR-A/2/315/M/V
R901110142		IH15EB-1X/WZDR-P/2/210/M/V
R901110143		IH15EB-1X/WZDR-P/2/210D/M/V

<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material Seal material	FKM = V NBR = M
<input type="checkbox"/> 29	Cartridge valve	In channel A In channel A and B In channel P	= A = AB = P
<input type="checkbox"/> 32	Stop valve	Without stop valve With stop valve	= no code = A
<input type="checkbox"/> 33	Adjustment element at the pressure reducing valve	Setscrew with hexagon and protective cap Rotary knob with scale, lockable	= 2 = 3
<input type="checkbox"/> 34	Secondary pressure	Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure with pressure switch Max. secondary pressure with pressure switch Max. secondary pressure with pressure switch	100 bar = 100 210 bar = 210 315 bar = 315 100 bar = 100D 210 bar = 210D 315 bar = 315D

Directional seat valve module, type "W", "S" (dimensions in mm)

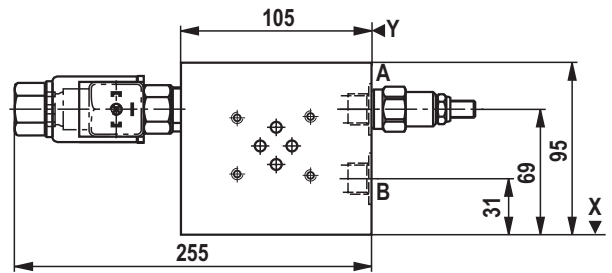
Sandwich module with lowering brake valve in channel A, type "WZSB-A"

Symbol



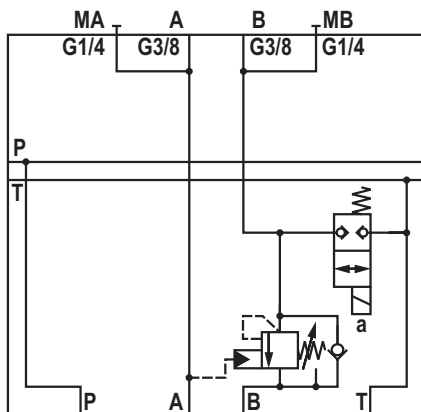
Unit dimensions

Dimension Z = 110 mm



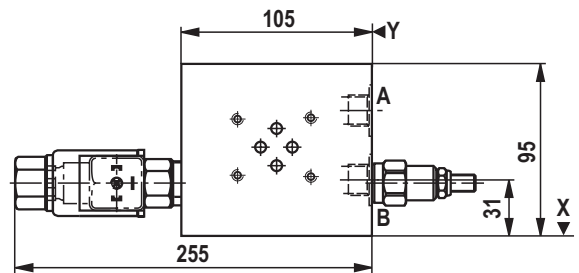
Sandwich module with lowering brake valve in channel B, type "WZSB-B"

Symbol



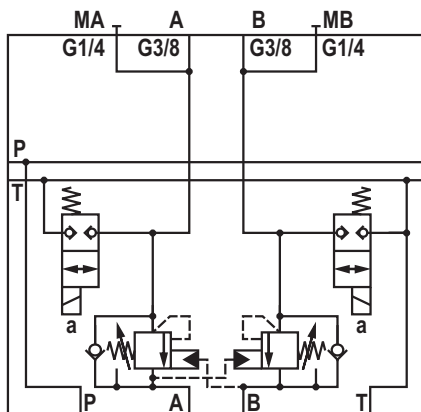
Unit dimensions

Dimension Z = 110 mm



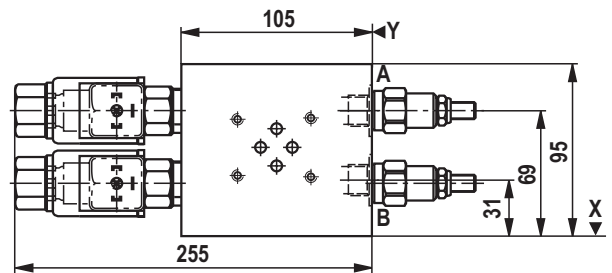
Sandwich module with lowering brake valve in channel A and B, type "WZSB-AB"

Symbol



Unit dimensions

Dimension Z = 110 mm



Directional seat valve module, type: "W", "S"

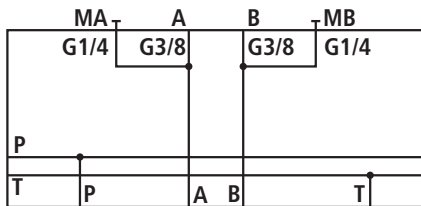
Material no.	Device designation	Type designation
	Sandwich module with lowering brake valve	IH15EB-1X/WZSB- <input type="checkbox"/> ²⁹ / <input type="checkbox"/> ¹⁴ <input type="checkbox"/> ⁴ <input type="checkbox"/> ⁸ / <input type="checkbox"/> ²⁶
R901160333		IH15EB-1X/WZSB-AB/MNG24/V

<input type="checkbox"/> ⁴	Designation of the 2/2 seat valve	Normally closed Normally open	= N = P
<input type="checkbox"/> ⁸	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="checkbox"/> ¹⁴	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ²⁶	Seal	Seal material Seal material	FKM NBR = V = M
<input type="checkbox"/> ²⁹	Cartridge valve	In channel A In channel B In channel A and B	= A = B = AB

Directional seat valve module, type "W", "S" (dimensions in mm)

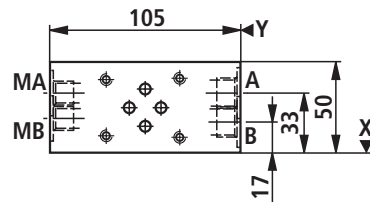
Sandwich module, type "WZ"

Symbol



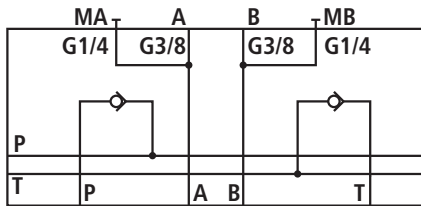
IH15MB-1X/WZ-...

Unit dimensions

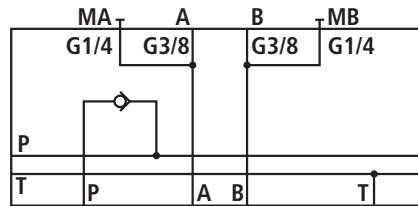


Dimension Z = 70 mm
without check valve

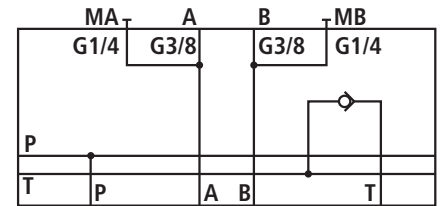
Dimension Z = 85 mm
with check valve



IH15MB-1X/WZ-PT/...



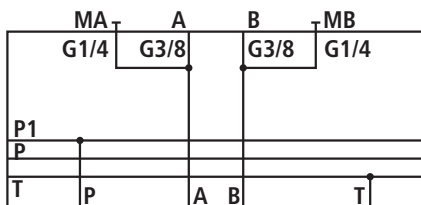
IH15MB-1X/WZ-P/...



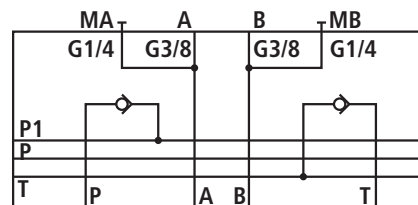
IH15MB-1X/WZ-T/...

Sandwich module with P1 channel, type "WZP1"

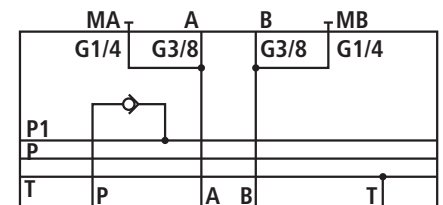
Symbol



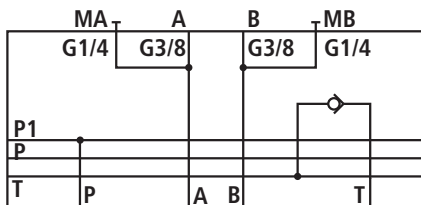
IH15MB-1X/WZP1-...



IH15MB-1X/WZP1-PT/...



IH15MB-1X/WZP1-P/...



IH15MB-1X/WZP1-T/...

Material no.	Device designation	Type designation
	Sandwich module	IH15MB-1X/WZ- <input type="text" value="21"/> / <input type="text" value="14"/> / <input type="text" value="26"/>
R904101345		IH15MB-1X/WZ-M/V
R904101410		IH15MB-1X/WZ-O/V
R901067488		IH15MB-1X/WZ-PT/M/V
R901067489		IH15MB-1X/WZ-PT/O/V
R901067490		IH15MB-1X/WZ-P/M/V
R901067491		IH15MB-1X/WZ-P/O/V
R901065897		IH15MB-1X/WZ-T/M/V
R904101455		IH15MB-1X/WZ-T/O/V

Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Sandwich module with P1 channel	IH15MB-1X/WZP1- <input type="checkbox"/> ²¹ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101830		IH15MB-1X/WZP1-M/V
R904101598		IH15MB-1X/WZP1-O/V
R901067493		IH15MB-1X/WZP1-PT/M/V
R901067495		IH15MB-1X/WZP1-PT/O/V
R901067497		IH15MB-1X/WZP1-P/M/V
R904101756		IH15MB-1X/WZP1-P/O/V
R901067498		IH15MB-1X/WZP1-T/M/V
R901067499		IH15MB-1X/WZP1-T/O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ²¹ Check valve	Without check valve In channel P In channel T In channel P and T	= no code = P = T = PT
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM NBR = V = M

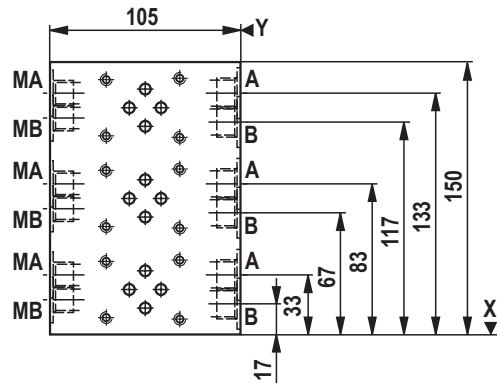
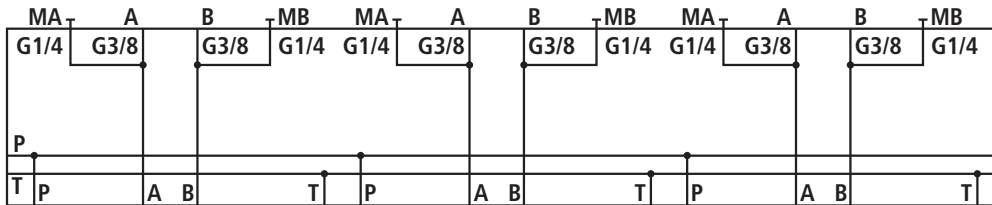
Directional seat valve module, type "W", "S" (dimensions in mm)

Sandwich module with 3 valve stations, type "WZ3"

Symbol

Unit dimensions

Dimension Z = 70 mm

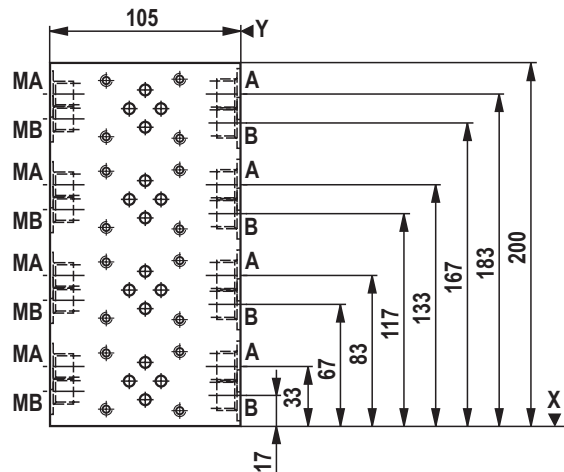
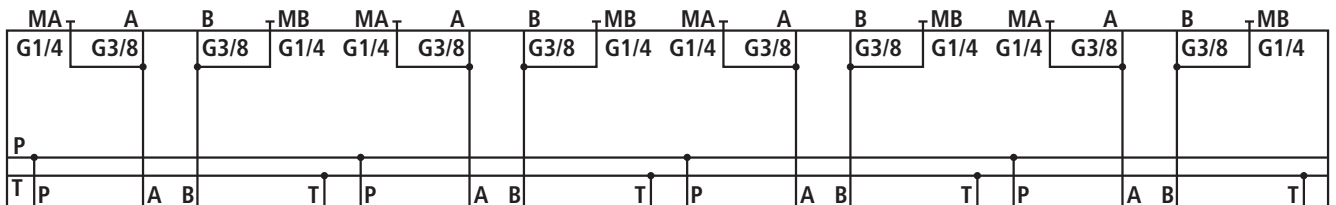


Sandwich module with 4 valve stations, type "WZ4"

Symbol

Unit dimensions

Dimension Z = 70 mm



Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Sandwich module, 3 valve stations	IH15MB-1X/WZ3- ¹⁴ <input type="checkbox"/> / ²⁶ <input type="checkbox"/>
R901096707		IH15EB-1X/WZ3-M/V
R901096708		IH15EB-1X/WZ3-O/V

Material no.	Device designation	Type designation
	Sandwich module, 4 valve stations	IH15MB-1X/WZ4- ¹⁴ <input type="checkbox"/> / ²⁶ <input type="checkbox"/>
R901090430		IH15EB-1X/WZ4-M/V
R901096706		IH15EB-1X/WZ4-O/V

¹⁴ <input type="checkbox"/>	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
²⁶ <input type="checkbox"/>	Seal	Seal material Seal material	FKM = V NBR = M

Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Sandwich module in special design -008, 1 valve station	IH15MB-1X/WZ- ¹⁴ <input type="checkbox"/> / ²⁶ <input type="checkbox"/> -008
R901128760		IH15MB-1X/WZ-M/V-008
R901125893		IH15MB-1X/WZ-O/V-008

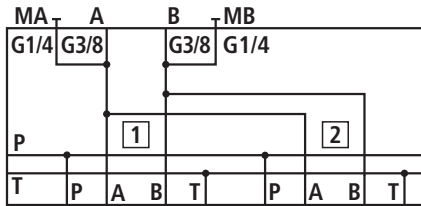
Material no.	Device designation	Type designation
	Sandwich module in special design -008, 4 valve stations	IH15MB-1X/WZ4- ¹⁴ <input type="checkbox"/> / ²⁶ <input type="checkbox"/> -008
R901128761		IH15MB-1X/WZ4-M/V-008
R901125863		IH15MB-1X/WZ4-O/V-008

¹⁴ <input type="checkbox"/>	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
²⁶ <input type="checkbox"/>	Seal	Seal material Seal material	FKM NBR = V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

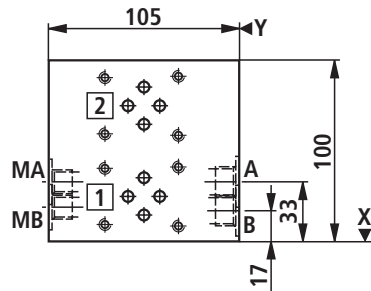
Sandwich module 2 - AA - BB, type "WZ2AABB"

Symbol



Unit dimensions

Dimension Z = 70 mm

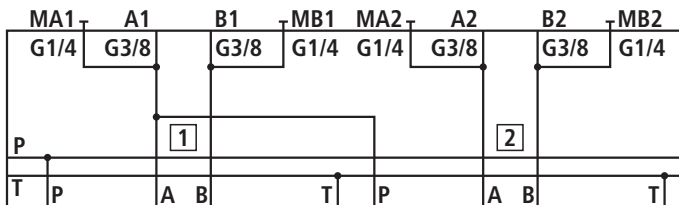


Material no.	Device designation	Type designation
	Sandwich module, 2 valve stations, AA-BB channel connected	IH15MB-1X/WZ2AABB- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101364		IH15MB-1X/WZ2AABB-M/V
R904101411		IH15MB-1X/WZ2AABB-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM = V NBR = M

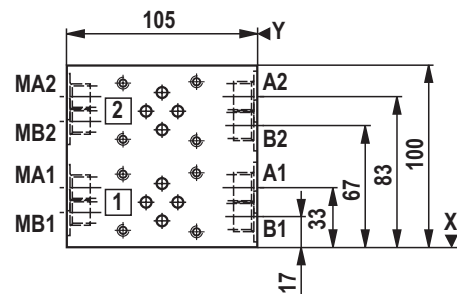
Sandwich module 2 - AP, type "WZ2AP"

Symbol



Unit dimensions

Dimension Z = 70 mm



Material no.	Device designation	Type designation
	Sandwich module, 2 valve stations, A-P channel connected	IH15MB-1X/WZ2AP- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901094521		IH15MB-1X/WZ2AP-M/V
R901094520		IH15MB-1X/WZ2AP-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM = V NBR = M

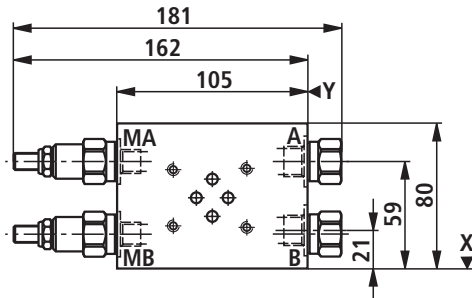
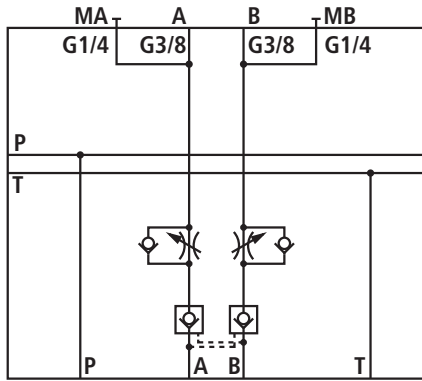
Directional seat valve module, type "W", "S" (dimensions in mm)

Sandwich module with cartridge valves, type "WZE"

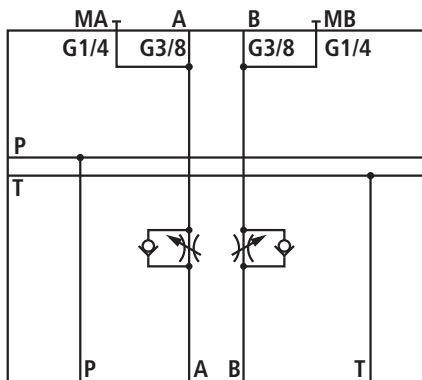
Symbol

Unit dimensions

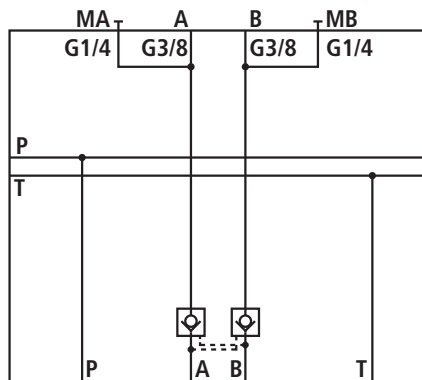
Dimension Z = 110 mm



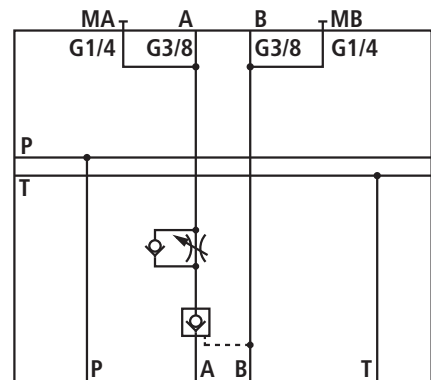
IH15EB-1X/WZE-FSR/AB...



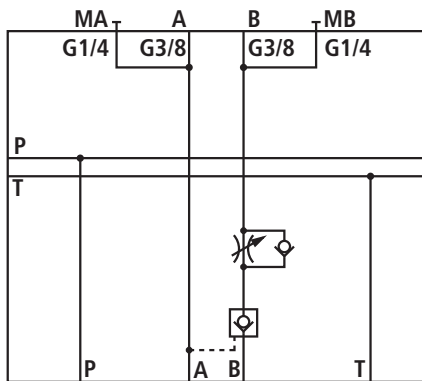
IH15EB-1X/WZE-FS/AB...



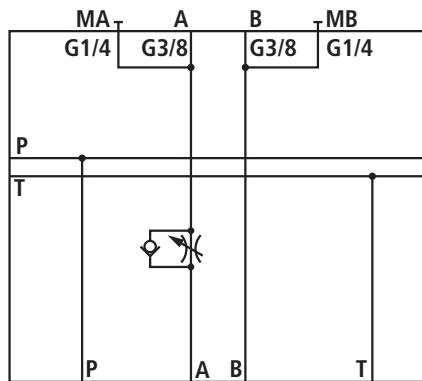
IH15EB-1X/WZE-R/AB...



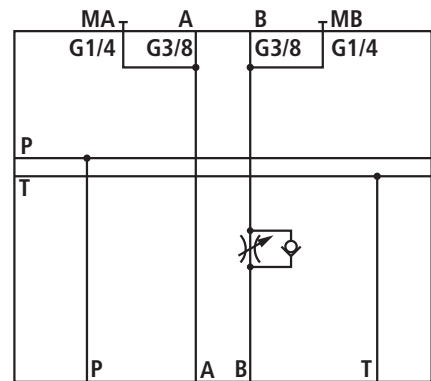
IH15EB-1X/WZE-FSR/A...



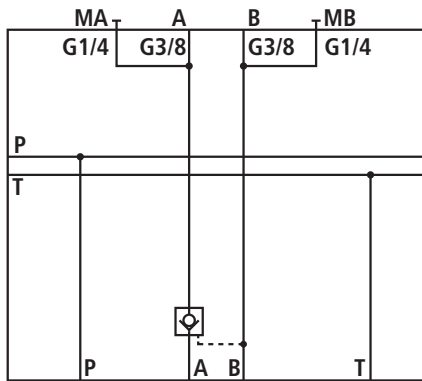
IH15EB-1X/WZE-FSR/B...



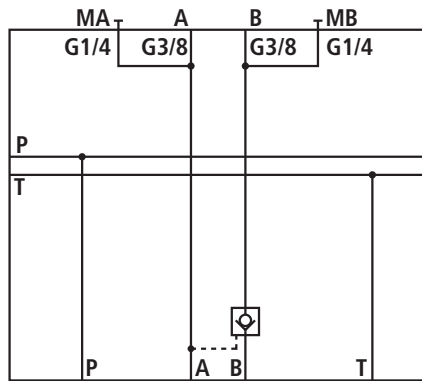
IH15EB-1X/WZE-FS/A...



IH15EB-1X/WZE-FS/B...



IH15EB-1X/WZE-R/A...

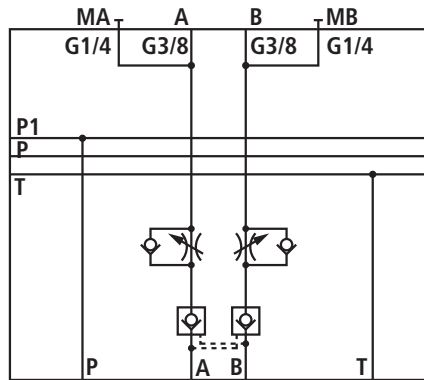


IH15EB-1X/WZE-R/B...

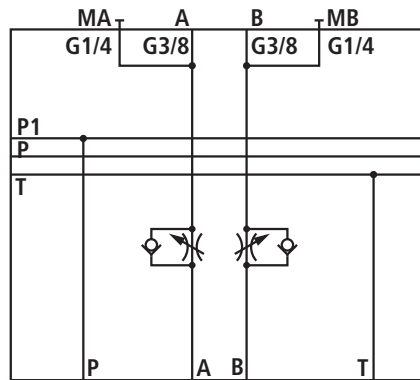
Directional seat valve module, type "W", "S" (dimensions in mm)

Sandwich module with cartridge valves, type "WZEP1"

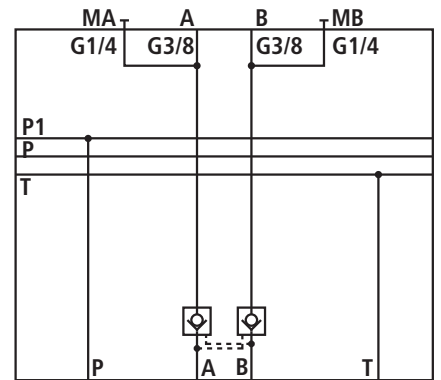
Symbol



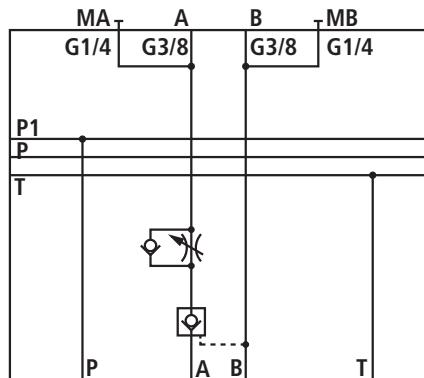
IH15EB-1X/WZEP1-FSR/AB...



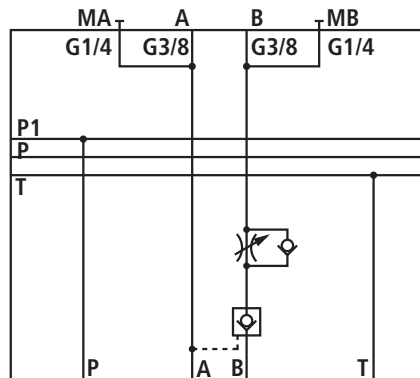
IH15EB-1X/WZEP1-FS/AB...



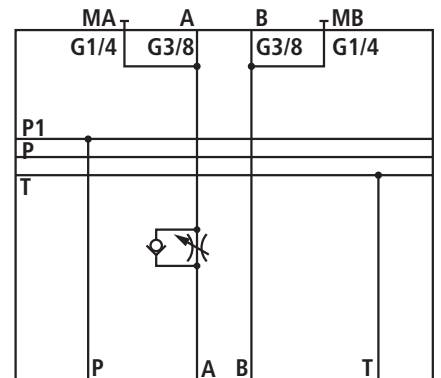
IH15EB-1X/WZEP1-R/AB...



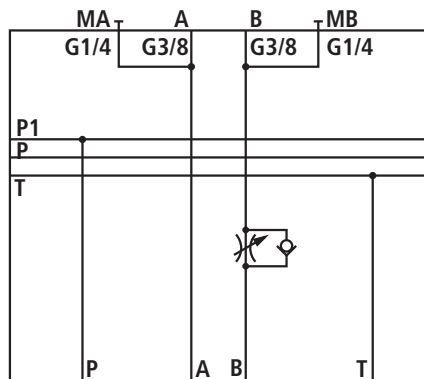
IH15EB-1X/WZEP1-FSR/A...



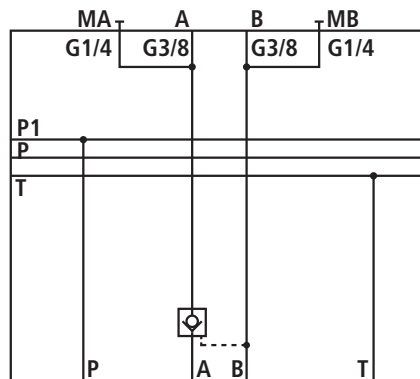
IH15EB-1X/WZEP1-FSR/B...



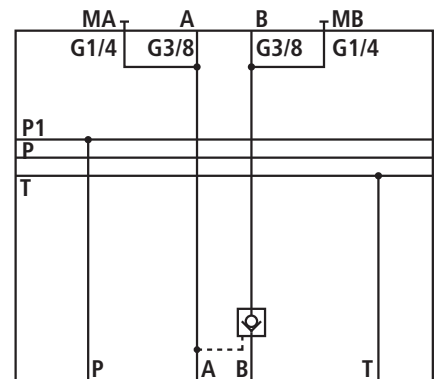
IH15EB-1X/WZEP1-FS/A...



IH15EB-1X/WZEP1-FS/B...



IH15EB-1X/WZEP1-R/A...



IH15EB-1X/WZEP1-R/B...

Material no.	Device designation	Type designation
	Sandwich module with cartridge valves	IH15EB-1X/WZE- <input type="checkbox"/> ²⁸ / <input type="checkbox"/> ²⁹ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101344		IH15EB-1X/WZE-FSR/AB/M/V
R901067578		IH15EB-1X/WZE-FSR/AB/O/V
R901067579		IH15EB-1X/WZE-FS/AB/M/V
R901067580		IH15EB-1X/WZE-FS/AB/O/V
R901067581		IH15EB-1X/WZE-R/AB/M/V
R901067582		IH15EB-1X/WZE-R/AB/O/V

Directional seat valve module, type "W", "S"

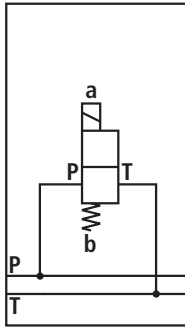
Material no.	Device designation	Type designation
	Sandwich module with cartridge valves and P1 channel	IH15EB-1X/WZEP1- <input type="checkbox"/> ²⁸ / <input type="checkbox"/> ²⁹ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901067583		IH15EB-1X/WZEP1-FSR/AB/M/V
R901067584		IH15EB-1X/WZEP1-FSR/AB/O/V
R901067585		IH15EB-1X/WZEP1-FS/AB/M/V
R901067586		IH15EB-1X/WZEP1-FS/AB/O/V
R901067587		IH15EB-1X/WZEP1-R/AB/M/V
R901067675		IH15EB-1X/WZEP1-R/AB/O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ²⁶ Seal	Seal material Seal material	FKM = V NBR = M
<input type="checkbox"/> ²⁸ Cartridge valve	Adjustable throttle check valve Pilot operated check valve Adjustable throttle check valve and pilot operated check valve	= FS = R = FSR
<input type="checkbox"/> ²⁹ Cartridge valve	In channel A In channel B In channel A and B	= A = B = AB

Directional seat valve module, type "W", "S" (dimensions in mm)

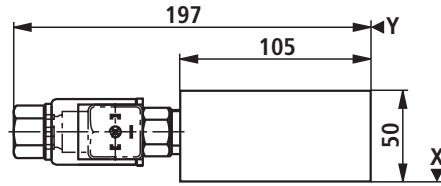
Circulation module, type "SU"

Symbol



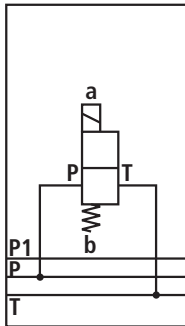
Unit dimensions

Dimension Z = 70 mm



Circulation module with P1 channel, type "SUP1"

Symbol



Material no.	Device designation	Type designation
	Circulation module	IH15EB-1X/SU- <input type="text" value="4"/> <input type="text" value="8"/> / <input type="text" value="26"/>
R904101894		IH15EB-1X/SU-NG24/V
R904101895		IH15EB-1X/SU-PG24/V

Material no.	Device designation	Type designation
	Circulation module with P1 channel	IH15EB-1X/SUP1- <input type="text" value="4"/> <input type="text" value="8"/> / <input type="text" value="26"/>
R904101896		IH15EB-1X/SUP1-NG24/V
R904101897		IH15EB-1X/SUP1-PG24/V

<input type="text" value="4"/>	Designation of the 2/2 seat valve	Normally closed Normally open	= N = P
<input type="text" value="8"/>	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="text" value="26"/>	Seal	Seal material Seal material	FKM NBR = V = M

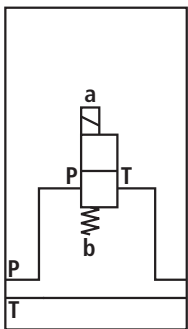
Directional seat valve module, type "W", "S" (dimensions in mm)

Module P, type "SP"

Symbol

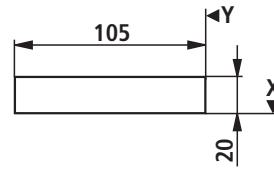


IH15EB-1X/SP -V
-M

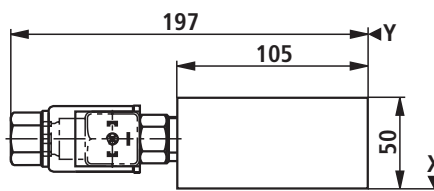


IH15EB-1X/SP -N ...
-P ...

Unit dimensions



Dimension Z = 70 mm

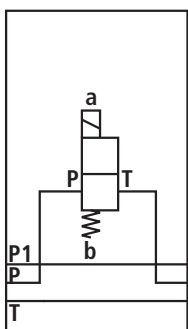


Module P with P1 channel, type "SPP1"

Symbol

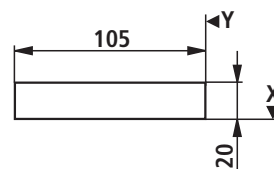


IH15EB-1X/SPP1 -V
-M

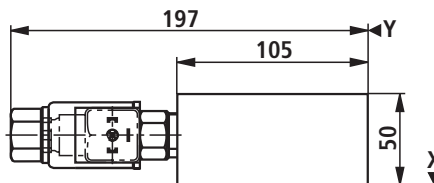


IH15EB-1X/SPP1 -N ...
-P ...

Unit dimensions



Dimension Z = 70 mm



Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Control module P	IH15EB-1X/SP- <input type="text"/> ²⁶
R904101760		IH15EB-1X/SP/V

Material no.	Device designation	Type designation
	Control module P	IH15EB-1X/SP- <input type="text"/> ⁴ <input type="text"/> ⁸ / <input type="text"/> ²⁶
R904101795		IH15EB-1X/SP-NG24/V
R904101898		IH15EB-1X/SP-PG24/V

Material no.	Device designation	Type designation
	Control module P with P1 channel	IH15EB-1X/SPP1- <input type="text"/> ²⁶
R901070019		IH15EB-1X/SPP1/V

Material no.	Device designation	Type designation
	Control module P with P1 channel	IH15EB-1X/SPP1- <input type="text"/> ⁴ <input type="text"/> ⁸ / <input type="text"/> ²⁶
R904101899		IH15EB-1X/SPP1-NG24/V
R904101900		IH15EB-1X/SPP1-PG24/V

<input type="text"/> ⁴	Designation of the 2/2 seat valve	Normally closed Normally open	= N = P
<input type="text"/> ⁸	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="text"/> ²⁶	Seal	Seal material Seal material	FKM = V NBR = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Module T, type "ST"

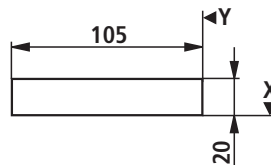
Symbol



IH15EB-1X/ST ^{-V}
_{-M}

Unit dimensions

Dimension Z = 70 mm



Module T with P1 channel, type "STP1"

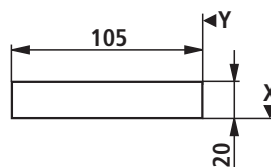
Symbol



IH15EB-1X/STP1 ^{-V}
_{-M}

Unit dimensions

Dimension Z = 70 mm



Material no.	Device designation	Type designation
	Control module T	IH15EB-1X/ST- ²⁶ <input type="text"/>
R901300263		IH15EB-1X/ST/V

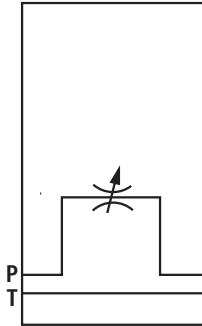
Material no.	Device designation	Type designation
	Control module T with P1 channel	IH15EB-1X/STP1- ²⁶ <input type="text"/>
R901300262		IH15EB-1X/STP1/V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Directional seat valve module, type "W", "S" (dimensions in mm)

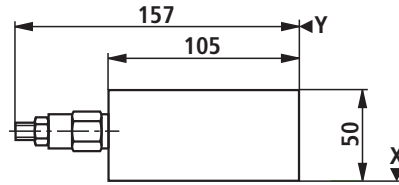
Module PDV, type "SPDV"

Symbol



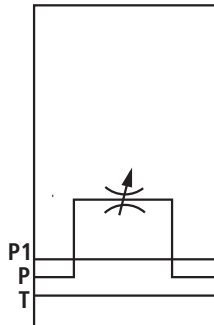
Unit dimensions

Dimension Z = 70 mm



Module PDV with P1 channel, type "SPDVP1"

Symbol



Material no.	Device designation	Type designation
	Control module P with throttle valve	IH15MB-1X/SPDV - ²⁶ <input type="text"/>
R901215052		IH15MB-1X/SPDV -V

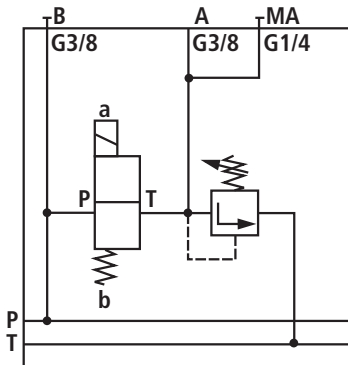
Material no.	Device designation	Type designation
	Control module P with throttle valve and P1 channel	IH15MB-1X/SPDVP1 - ²⁶ <input type="text"/>
R901300246		IH15MB-1X/SPDVP1 - V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Directional seat valve module, type "S" (dimensions in mm)

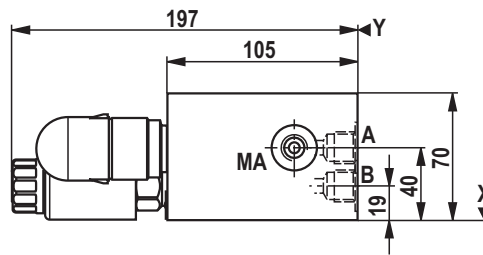
Module P - B - A - T with pressure relief valve, type "SPBAT2DB"

Symbol



Unit dimensions

Dimension Z = 85 mm



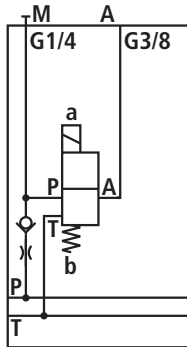
Material no.	Device designation	Type designation
	Module SPBAT2DB	IH15EB-1X/SPBAT2DB- <input type="checkbox"/> 1 <input type="checkbox"/> 2 / <input type="checkbox"/> 14 <input type="checkbox"/> 4 <input type="checkbox"/> 8 <input type="checkbox"/> 26
R901168798		IH15EB-1X/SPBAT2DB-S315/OPG24/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with internal hexagon Rotary knob	= S = H
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	25 bar 50 bar 100 bar 200 bar 350 bar 500 bar = 25 = 50 = 100 = 200 = 350 = 500
Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!			
		Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar 100 bar 140 bar 210 bar 330 bar = 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD 6../..E Type testing according to Pressure Equipment Directive 97/23/EC			See page 88
<input type="checkbox"/> 4	Designation of the 2/2 seat valve	Normally closed Normally open	= N = P
<input type="checkbox"/> 8	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material	FKM = V

Directional seat valve module, type "W", "S" (dimensions in mm)

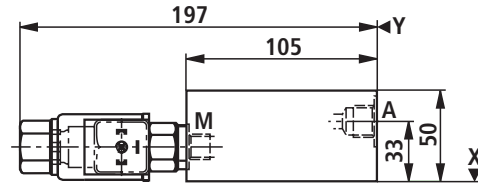
Module P - A, type "SPA3"

Symbol



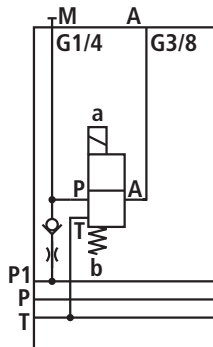
Unit dimensions

Dimension Z = 70 mm



Module P - A with P1 channel, type "SPA3P1"

Symbol



Material no.	Device designation	Type designation
	Control module P - A	IH15EB-1X/SPA3- 5 14 8 27 26 □ / □ □ / □ / □
R901019899		IH15EB-1X/SPA3-C/MG24/V
R904101901		IH15EB-1X/SPA3-C/OG24/V
R901070054		IH15EB-1X/SPA3-U/MG24/V
R904101902		IH15EB-1X/SPA3-U/OG24/V

Material no.	Device designation	Type designation
	Control module P - A with P1 channel	IH15EB-1X/SPA3P1- 5 14 8 27 26 □ / □ □ / □ / □
R901070056		IH15EB-1X/SPA3P1-C/MG24/V
R901070058		IH15EB-1X/SPA3P1-C/OG24/V
R901070059		IH15EB-1X/SPA3P1-U/MG24/V
R901070060		IH15EB-1X/SPA3P1-U/OG24/V

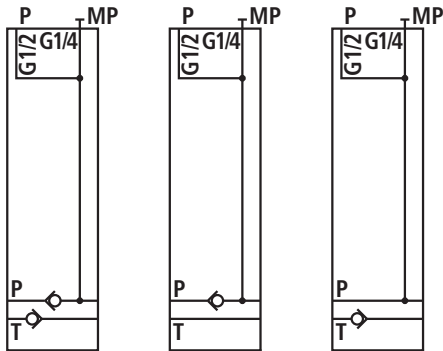
Directional seat valve module, type "W", "S"

5	Designation of the 3/2 seat valve			= U
				= C
8	Solenoid voltage of the seat valves	Volt	24 V DC	= G24
14	Pressure monitoring	With measuring port Without pressure monitoring		= M = O
26	Seal	Seal material Seal material	FKM NBR	= V = M
27	Throttle	Without throttle Throttle diameter Throttle diameter	Ø 1.0 mm Ø 2.5 mm	= no code = B10 = B25

Directional seat valve module, type "W", "S" (dimensions in mm)

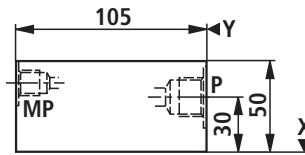
Module with check valve, type "SR"

Symbol



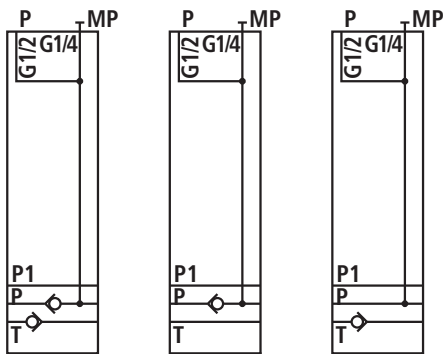
Unit dimensions

Dimension Z = 70 mm



Module with check valve and P1 channel, type "SRP1"

Symbol



Material no.	Device designation	Type designation
	Control module with check valve	IH15EB-1X/SR - <input type="text"/> ²¹ / <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901070301		IH15EB-1X/SR-PT/M/V
R904101888		IH15EB-1X/SR-PT/O/V
R901065236		IH15EB-1X/SR-P/M/V
R904101558		IH15EB-1X/SR-P/O/V
R901070303		IH15EB-1X/SR-T/M/V
R904101596		IH15EB-1X/SR-T/O/V

Material no.	Device designation	Type designation
	Control module with check valve and P1 channel	IH15EB-1X/SRP1- <input type="text"/> ²¹ / <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901070304		IH15EB-1X/SRP1-PT/M/V
R904101892		IH15EB-1X/SRP1-PT/O/V
R901070305		IH15EB-1X/SRP1-P/M/V
R904101889		IH15EB-1X/SRP1-P/O/V
R901070306		IH15EB-1X/SRP1-T/M/V
R904101890		IH15EB-1X/SRP1-T/O/V

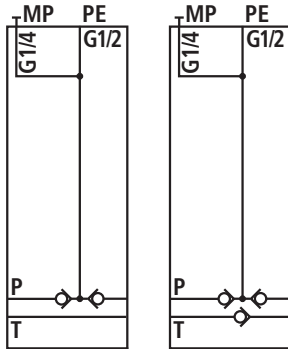
Directional seat valve module, type "W", "S"

14 <input type="checkbox"/>	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
21 <input type="checkbox"/>	Check valve	Without check valve In channel P In channel T In channel P and T	= no code = P = T = PT
26 <input type="checkbox"/>	Seal	Seal material Seal material	FKM = V NBR = M

Directional seat valve module, type "W", "S" (dimensions in mm)

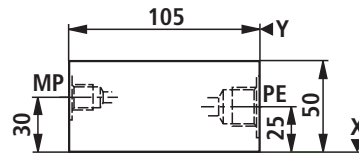
Module with check valve, type "SR2"

Symbol



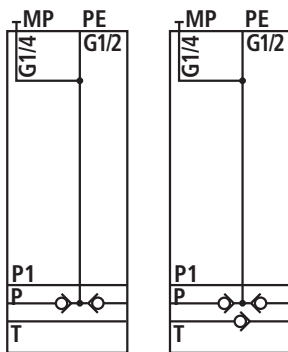
Unit dimensions

Dimension Z = 70 mm



Module with check valve and P1 channel, type "SR2P1"

Symbol



Material no.	Device designation	Type designation
	Control module with check valve	IH15EB-1X/SR2 - <input type="checkbox"/> ²¹ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901140077		IH15EB-1X/SR2-P/O/V

Material no.	Device designation	Type designation
	Control module with check valve and P1 channel	IH15EB-1X/SR2P1- <input type="checkbox"/> ²¹ / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901300658		IH15EB-1X/SR2P1-P/O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without measuring port	= M = O
<input type="checkbox"/> ²¹ Check valve	Without check valve In channel P In channel T In channel P and T	= no code = P = T = PT
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM NBR
		= V = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Project planning information

When designing the control with accumulator you have to make sure that the accumulator is protected against inadmissible overpressure by means of a type examination-tested pressure relief valve. The type-examination tested pressure relief valve must not accept any control tasks. The set pressure of the type-examination tested pressure relief valve must be less than or equal to the maximum admissible operating pressure of the accumulator.

In order to achieve the best utilization of the accumulator volume possible as well as long service life, compliance with the following nitrogen filling pressure value is recommended:

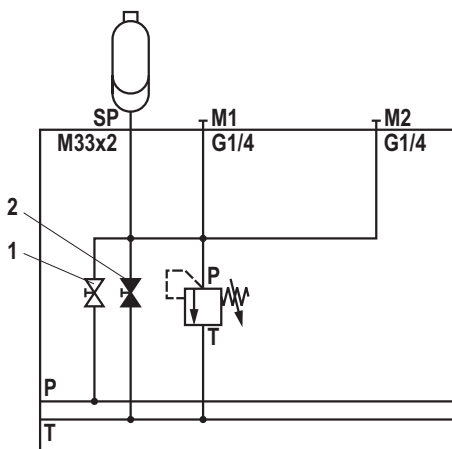
$$p_o = 0.9 \times p_{(\text{minimum operating pressure})}$$

Mounting information

The accumulators is to be fastened so that in case of operational vibrations, safe hold is guaranteed. No holding forces may be applied via the oil and gas connection.

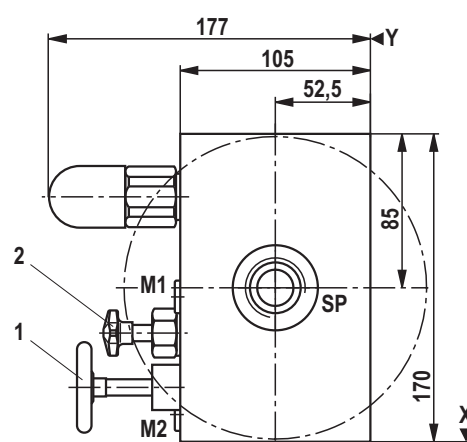
Sandwich module with accumulator shut-off module, type "ZSSB"

Symbol



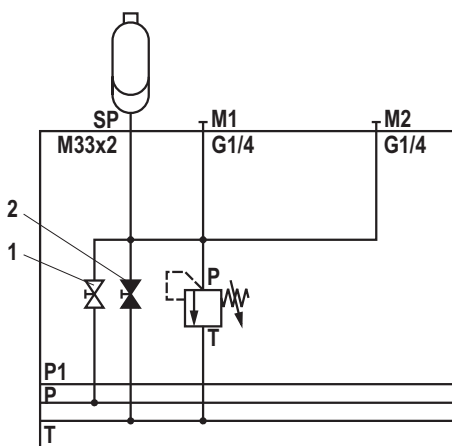
Unit dimensions

Dimension Z = max. 295 mm



Sandwich module with accumulator shut-off module and P1 channel, type "ZSSBP1"

Symbol



- Operating information:
- 1 System stop valve must be open in the operating condition
 - 2 Manual unloading must be closed in the operating condition

Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Sandwich module with accumulator shut-off module	IH15EB-1X/ZSSB- <input type="checkbox"/> ¹ <input type="checkbox"/> ³ / <input type="checkbox"/> ³¹ / <input type="checkbox"/> ¹⁴ <input type="checkbox"/> ⁸ / <input type="checkbox"/> ¹⁸ / <input type="checkbox"/> ²⁶
R904101904		IH15EB-1X/ZSSB-S140E/E/MG24/1,40/V
R904101903		IH15EB-1X/ZSSB-S140E/M/M/1,40/V
R904102293		IH15EB-1X/ZSSB-S140E/M/M/2,00/V

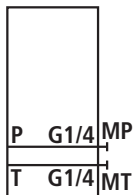
Material no.	Device designation	Type designation
	Sandwich module with accumulator shut-off module and P1 channel	IH15EB-1X/ZSSBP1- <input type="checkbox"/> ¹ <input type="checkbox"/> ³ / <input type="checkbox"/> ³¹ / <input type="checkbox"/> ¹⁴ <input type="checkbox"/> ⁸ / <input type="checkbox"/> ¹⁸ / <input type="checkbox"/> ²⁶
R904101906		IH15EB-1X/ZSSBP1-S140E/E/MG24/1,40/V
R904101905		IH15EB-1X/ZSSBP1-S140E/M/M/1,40/V

<input type="checkbox"/> ¹	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> ³	Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!	Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 140 bar Setting pressure up to max. 210 bar Setting pressure up to max. 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD...E Type testing according to Pressure Equipment Directive 97/23/EC			See page 89
<input type="checkbox"/> ⁸	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="checkbox"/> ¹⁴	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> ¹⁸	Diaphragm-type accumulator	Nominal volume in l	Max. pressure in bar
		0.35 0.50 0.70 0.70 1.40 1.40 2.00 2.80 3.50	210 210 210 350 140 350 350 350 350
	Bladder-type accumulator	0.50 4.00	400 330
<input type="checkbox"/> ²⁶	Seal	Seal material Seal material	FKM NBR = V = M
<input type="checkbox"/> ³¹	Unloading	Manual Manual and electromagnetic	= M = E

Directional seat valve module, type "W", "S" (dimensions in mm)

End module, type "WSE"

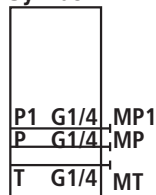
Symbol



IH15MB-1X/WSE...

End module with P1 channel, type "WSEP1"

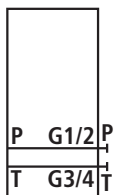
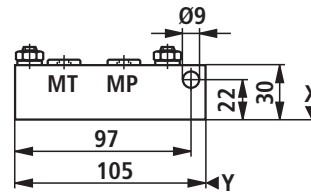
Symbol



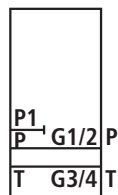
IH15MB-1X/WSEP1...

Unit dimensions

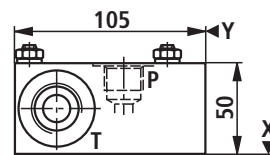
Dimension Z = 70 mm



IH15MB-1X/WSE-PT...



IH15MB-1X/WSEP1-PT...



Material no.	Device designation	Type designation
	End module	IH15MB-1X/WSE- <input type="text" value="22"/> / <input type="text" value="14"/> / <input type="text" value="26"/>
R904101349		IH15MB-1X/WSE-M/V
R904101555		IH15MB-1X/WSE-O/V
R904101793		IH15MB-1X/WSE-PT/M/V
R904101857		IH15MB-1X/WSE-PT/O/V

Material no.	Device designation	Type designation
	End module with P1 channel	IH15MB-1X/WSEP1- <input type="text" value="22"/> / <input type="text" value="14"/> / <input type="text" value="26"/>
R904101599		IH15MB-1X/WSEP1-M/V
R901067146		IH15MB-1X/WSEP1-O/V
R901070307		IH15MB-1X/WSEP1-PT/M/V
R901070308		IH15MB-1X/WSEP1-PT/O/V

<input type="text" value="14"/>	Pressure monitoring	With measuring port	= M
		Without pressure monitoring	= O
<input type="text" value="22"/>	Ports	Without ports	= no code
		P and T	= PT
<input type="text" value="26"/>	Seal	Seal material	FKM = V
		Seal material	NBR = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Project planning information

When designing the control with accumulator you have to make sure that the accumulator is protected against inadmissible overpressure by means of a type examination-tested pressure relief valve. The type-examination tested pressure relief valve must not accept any control tasks. The set pressure of the type-examination tested pressure relief valve must be less than or equal to the maximum admissible operating pressure of the accumulator.

In order to achieve the best utilization of the accumulator volume possible as well as long service life, compliance with the following nitrogen filling pressure value is recommended:

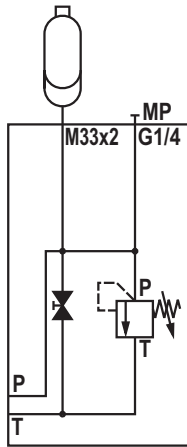
$$p_o = 0.9 \times p_{(\text{minimum operating pressure})}$$

Mounting information

The accumulators is to be fastened so that in case of operational vibrations, safe hold is guaranteed. No holding forces may be applied via the oil and gas connection.

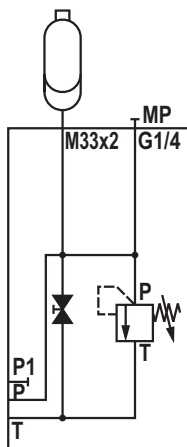
End module with pressure relief valve, accumulator and stop valve, type "SEDBSA"

Symbol



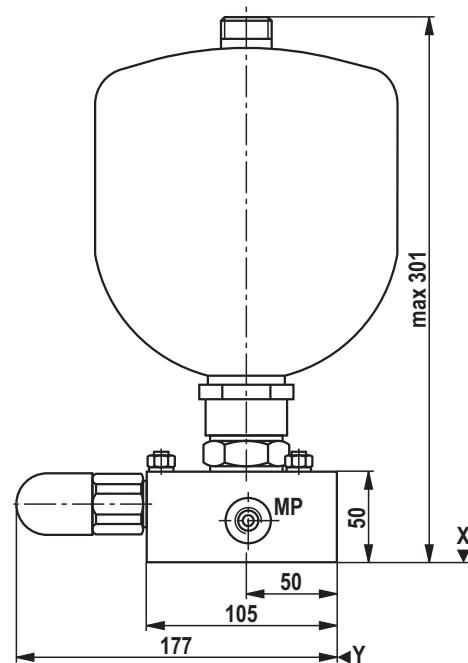
End module with pressure relief valve, accumulator, stop valve and P1 channel, type "SEDBSAP1"

Symbol



Unit dimensions

Dimension Z = max 120 mm



Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	End module with pressure relief valve, accumulator and stop valve	IH15EB-1X/SEDBSA- 1 3 14 18 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
R904102091		IH15EB-1X/SEDBSA-S100/M/0,70/V
R904101415		IH15EB-1X/SEDBSA-S100/M/1,40/V

Material no.	Device designation	Type designation
	End module with pressure relief valve, accumulator, stop valve and P1 channel	IH15EB-1X/SEDBSAP1- 1 3 14 18 26 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
R904101886		IH15EB-1X/SEDBSAP1-S100/M/1,40/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 3	Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar = 50E 100 bar = 100E 140 bar = 140E 210 bar = 210E 330 bar = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC			See page 89
<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 18	Diaphragm-type accumulator	Nominal volume in l	Max. pressure in bar
		0.35	210 = 0.35
		0.50	210 = 0.50
		0.70	210 = 0.70
		0.70	350 = 0.70
		1.40	140 = 1.40
		1.40	350 = 1.40
		2.00	350 = 2.00
		2.80	350 = 2.80
		3.50	350 = 3.50
	Bladder-type accumulator	0.50	400 = 0.50
		4.00	330 = 4.00
<input type="checkbox"/> 26	Seal	Seal material Seal material	FKM = V NBR = M

Directional seat valve module, type "W", "S" (dimensions in mm)

Project planning information

When designing the control with accumulator you have to make sure that the accumulator is protected against inadmissible overpressure by means of a type examination-tested pressure relief valve. The type-examination tested pressure relief valve must not accept any control tasks. The set pressure of the type-examination tested pressure relief valve must be less than or equal to the maximum admissible operating pressure of the accumulator.

In order to achieve the best utilization of the accumulator volume possible as well as long service life, compliance with the following nitrogen filling pressure value is recommended:

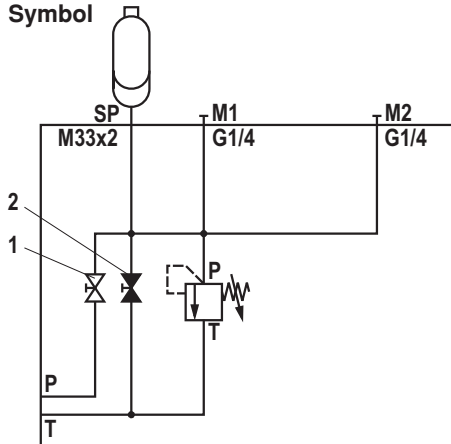
$$p_o = 0.9 \times p_{(\text{minimum operating pressure})}$$

Mounting information

The accumulators is to be fastened so that in case of operational vibrations, safe hold is guaranteed. No holding forces may be applied via the oil and gas connection.

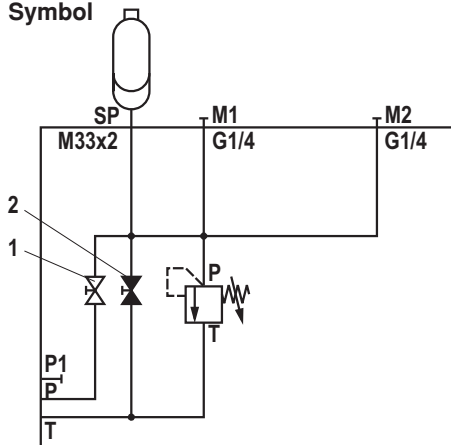
Accumulator shut-off module, type "SSB"

Symbol



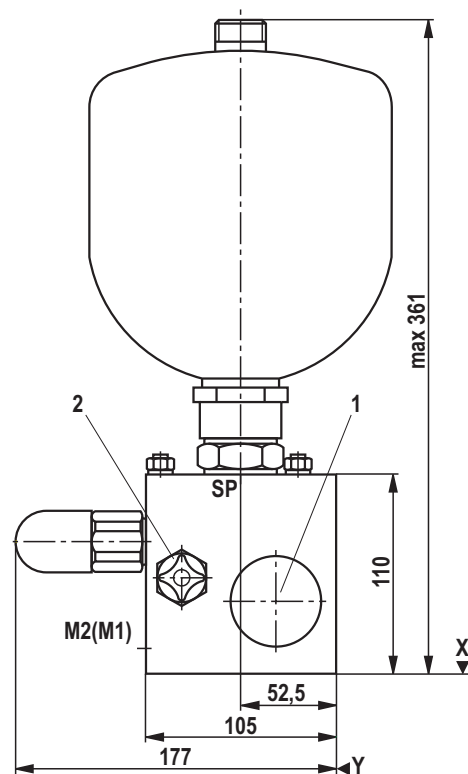
Accumulator shut-off module with P1 channel, type "SSBP1"

Symbol



Unit dimensions

Dimension Z = 172 mm



- Operating information:
- 1 System stop valve must be open in the operating condition
 - 2 Manual unloading must be closed in the operating condition

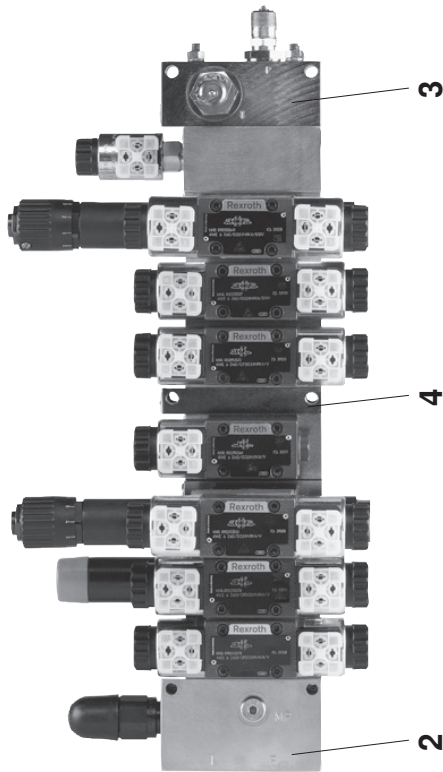
Material no.	Device designation	Type designation
	Accumulator shut-off module	IH15EB-1X/SSB- <div style="display: flex; justify-content: space-around; align-items: center;"> 1 3 31 14 8 18 26 </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> </div>
R904101840		IH15EB-1X/SSB-S140E/E/MG24/1,40/V
R901044115		IH15EB-1X/SSB-S140E/E/OG24/1,40/V
R904101848		IH15EB-1X/SSB-S140E/M/M/1,40/V
R901066444		IH15EB-1X/SSB-S140E/M/O/1,40/V
R901039971		IH15EB-1X/SSB-S330E/M/M/0,50/V
R901070594		IH15EB-1X/SSB-S330E/M/O/0,50/V

Directional seat valve module, type "W", "S"

Material no.	Device designation	Type designation
	Accumulator shut-off module with P1 channel	IH15EB-1X/SSBP1- <div style="display: flex; justify-content: space-around; font-size: small;"> 1 3 31 14 8 18 26 </div> <div style="display: flex; justify-content: space-around; font-size: x-small; margin-top: 5px;"> <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> </div>
R904101846		IH15EB-1X/SSBP1-S140E/E/MG24/1,40/V
R901070596		IH15EB-1X/SSBP1-S140E/E/OG24/1,40/V
R904101845		IH15EB-1X/SSBP1-S140E/M/M/1,40/V
R901070597		IH15EB-1X/SSBP1-S140E/M/O/1,40/V

1	<input type="checkbox"/> Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
3	<input type="checkbox"/> Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!	Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 140 bar Setting pressure up to max. 210 bar Setting pressure up to max. 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC			See page 89
8	<input type="checkbox"/> Solenoid voltage of the seat valves	Volt	24 V DC = G24
14	<input type="checkbox"/> Pressure monitoring	With measuring port Without pressure monitoring	= M = O
18	<input type="checkbox"/> Diaphragm-type accumulator	Nominal volume in l	Max. pressure in bar
		0.35	210 = 0.35
		0.50	210 = 0.50
		0.70	210 = 0.70
		0.70	350 = 0.70
		1.40	140 = 1.40
		1.40	350 = 1.40
		2.00	350 = 2.00
		2.80	350 = 2.80
		3.50	350 = 3.50
	Bladder-type accumulator	0.50	400 = 0.50
		4.00	330 = 4.00
26	<input type="checkbox"/> Seal	Seal material Seal material	FKM = V NBR = M
31	<input type="checkbox"/> Unloading	Manual Manual and electromagnetic	= M = E

Module for external attachment: Attachment with application examples

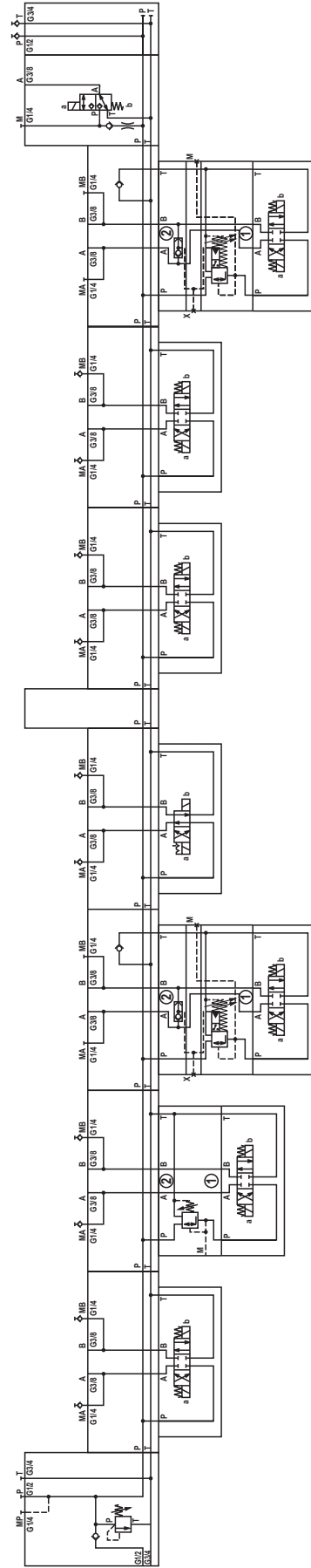


2 Connection module with pressure relief valve type ADB (see page 67)

3 End module type E (see page 72)

4 Sandwich module type Z or ZPT (see page 68 and 69)
The sandwich module can also be combined with the connection module item 1 type A or item 2 type ADB and with the end module item 3.

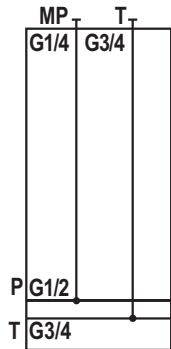
The length dimensions are calculated by adding dimension "X" of the directional valve modules (see page 14 to 62)



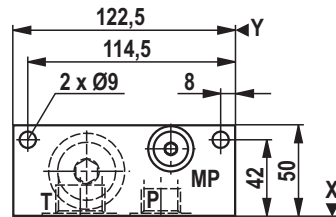
Module for external attachment (dimensions in mm)

Connection module, type "A"

Symbol



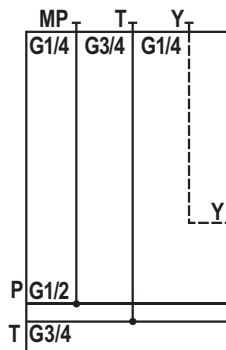
Unit dimensions



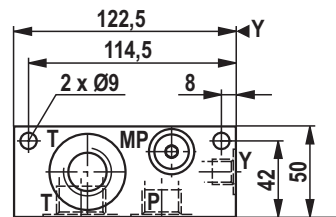
Dimension Z = 70 mm

Connection module with Y channel, type "AY"

Symbol



Unit dimensions



Dimension Z = 70 mm

Material no.	Device designation	Type designation
	Connection module	IH15MB-1X/A- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101350		IH15MB-1X/A-M/V
R904101514		IH15MB-1X/A-O/V

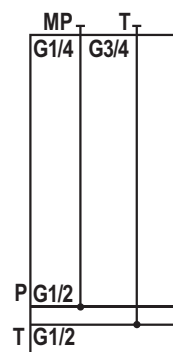
Material no.	Device designation	Type designation
	Connection module with Y channel	IH15MB-1X/AY- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901066327		IH15MB-1X/AY-M/V
R904101841		IH15MB-1X/AY-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M
	Without measuring port		= O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for external attachment (dimensions in mm)

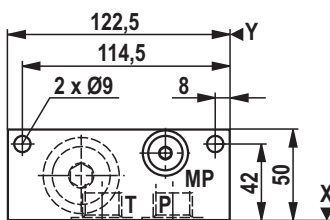
Connection module with through hole,
type "AD"

Symbol



Unit dimensions

Dimension Z = 70 mm



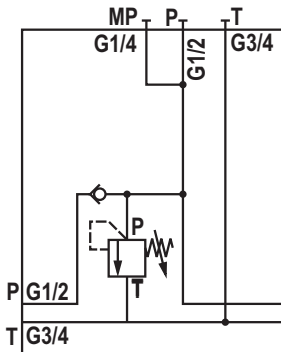
Material no.	Device designation	Type designation
	Connection module with through holes	IH15MB-1X/AD- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101797		IH15MB-1X/AD-M/V
R901066320		IH15MB-1X/AD-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M
	Without pressure monitoring		= O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for external attachment (dimensions in mm)

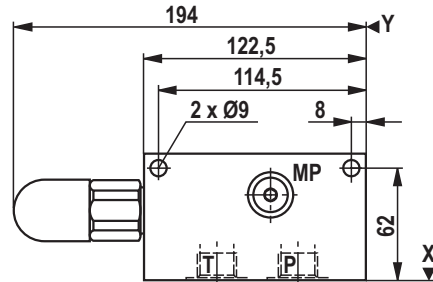
Connection module with pressure relief valve, type "ADB"

Symbol



Unit dimensions

Dimension Z = 85 mm



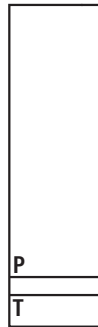
Material no.	Device designation	Type designation
	Connection module with pressure relief valve	IH15EB-1X/ADB- <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>
R901069495		IH15EB-1X/ADB-A200/M/V
R901069497		IH15EB-1X/ADB-A200/O/V
R901069494		IH15EB-1X/ADB-H200/M/V
R901069496		IH15EB-1X/ADB-H200/O/V
R901069238		IH15EB-1X/ADB-S200/M/V
R901069240		IH15EB-1X/ADB-S200/O/V

<input type="checkbox"/> 1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap Rotary knob Lockable rotary knob	= S = H = A
<input type="checkbox"/> 2	Pressure rating of the pressure relief valve	Setting pressure up to max. 25 bar Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 200 bar Setting pressure up to max. 315 bar Setting pressure up to max. 400 bar	= 25 = 50 = 100 = 200 = 315 = 400
Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!			
		Setting pressure up to max. 50 bar Setting pressure up to max. 100 bar Setting pressure up to max. 140 bar Setting pressure up to max. 210 bar Setting pressure up to max. 330 bar	= 50E = 100E = 140E = 210E = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD...E Type testing according to Pressure Equipment Directive 97/23/EC			See page 88
<input type="checkbox"/> 14	Pressure monitoring	With measuring port Without pressure monitoring	= M = O
<input type="checkbox"/> 26	Seal	Seal material FKM Seal material NBR	= V = M

Module for external attachment (dimensions in mm)

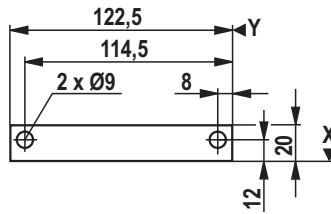
Sandwich module, type "Z"

Symbol



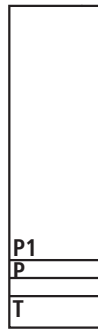
Unit dimensions

Dimension Z = 70 mm



Sandwich module with P1 channel, type "ZP1"

Symbol



Material no.	Device designation	Type designation
	Sandwich module	IH15MB-1X/Z- ²⁶ <input type="text"/>
R904101642		IH15MB-1X/Z-V

Material no.	Device designation	Type designation
	Sandwich module with P1 channel	IH15MB-1X/ZP1-V ²⁶ <input type="text"/>
R904101834		IH15MB-1X/ZP1-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for external attachment (dimensions in mm)

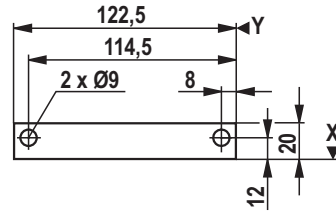
Sandwich module with PT interruption, type "ZPT"

Symbol



Unit dimensions

Dimension Z = 70 mm



Sandwich module with PTP1 interruption, type "ZPTP1"

Symbol



Material no.	Device designation	Type designation
	Sandwich module with PT interruption	IH15MB-1X/ZPT- ²⁶ <input type="text"/>
R901072044		IH15MB-1X/ZPT-V

Material no.	Device designation	Type designation
	Sandwich module with PTP1 interruption	IH15MB-1X/ZPTP1- ²⁶ <input type="text"/>
R901072043		IH15MB-1X/ZPTP1-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

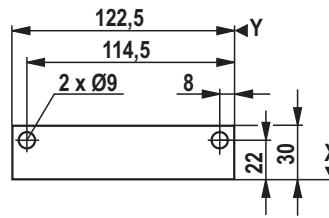
Module for external attachment (dimensions in mm)

Sandwich module with mounting thread for threaded bolt, type "ZG"

Symbol



Unit dimensions



Dimension Z = 70 mm

Sandwich module with mounting thread for threaded bolt and P1 channel, type "ZGP1"

Symbol



Material no.	Device designation	Type designation
	Sandwich module with mounting thread for threaded bolt	IH15MB-1X/ZG- ²⁶ <input type="text"/>
R904101503		IH15MB-1X/ZG-V

Material no.	Device designation	Type designation
	Sandwich module with mounting thread for threaded bolt and P1 channel	IH15MB-1X/ZGP1- ²⁶ <input type="text"/>
R904101831		IH15MB-1X/ZGP1-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for external attachment (dimensions in mm)

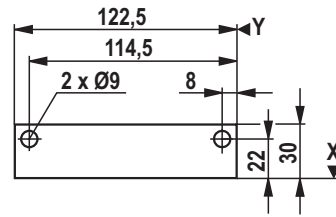
Sandwich module with mounting thread for threaded bolt with PT interruption, type "ZGPT"

Symbol



Unit dimensions

Dimension Z = 70 mm



Sandwich module with mounting thread for threaded bolt with PTP1 interruption, type "ZGPTP1"

Symbol



Material no.	Device designation	Type designation
	Sandwich module with PT interruption and mounting thread for threaded bolt	IH15MB-1X/ZGPT- ²⁶ <input type="text"/>
R904101761		IH15MB-1X/ZGPT-V

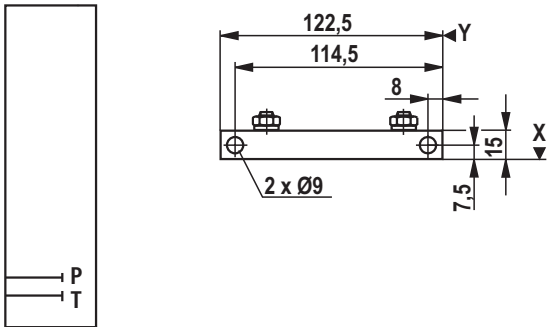
Material no.	Device designation	Type designation
	Sandwich module with PTP1 interruption and mounting thread for threaded bolt	IH15MB-1X/ZGPTP1- ²⁶ <input type="text"/>
R904101832		IH15MB-1X/ZGPTP1-V

²⁶ <input type="text"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for external attachment (dimensions in mm)

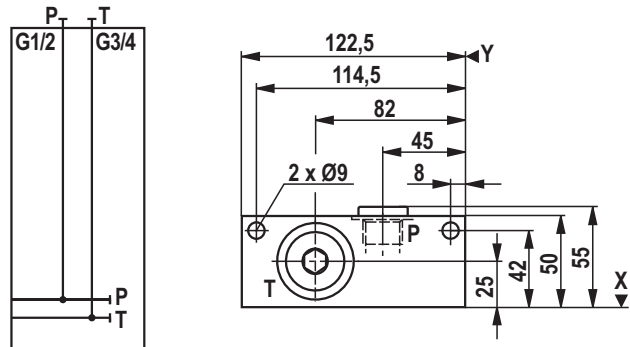
End module, type "E"

Symbol Unit dimensions Dimension Z = 70 mm



with port P and T

Symbol Unit dimensions Dimension Z = 70 mm

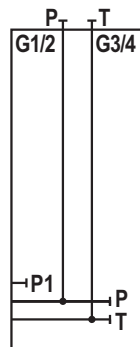


End module with P1 channel, type "EP1"

Symbol



Symbol



Material no.	Device designation	Type designation
	End module	IH15MB-1X/E- <input type="checkbox"/> ²² / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101351		IH15MB-1X/E-PT/M/V
R904101516		IH15MB-1X/E-PT/O/V
R901136829		IH15MB-1X/E-V

Material no.	Device designation	Type designation
	End module with P1 channel	IH15MB-1X/EP1- <input type="checkbox"/> ²² / <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101847		IH15MB-1X/EP1-PT/M/V
R904101849		IH15MB-1X/EP1-PT/O/V
R901137570		IH15MB-1X/EP1-V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M ¹⁾
	Without pressure monitoring		= O ¹⁾
<input type="checkbox"/> ²² Ports	Without ports		= no code
	With port P and T		= PT
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material		NBR

¹⁾ Indication is only necessary if the module is equipped with port P and T.

Reducing module, type "R" (dimensions in mm)

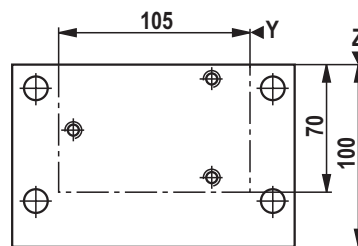
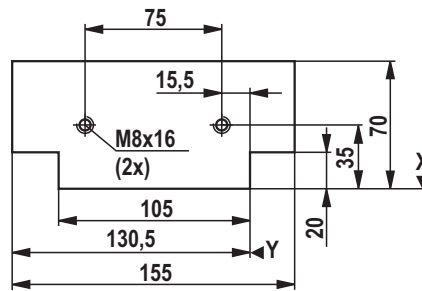
Reducing module IH15B to IH20B (left),
type "RIH20BL"

Symbol



Unit dimensions

Dimension Z = 100 mm



Material no.	Device designation	Type designation
	Reducing module IH15B to IH20B (left)	IH15MB-1X/RIH20BL- <input type="text" value="27"/> / <input type="text" value="26"/>
R904101839		IH15MB-1X/RIH20BL-V

<input type="text" value="26"/>	Seal	Seal material	FKM	= V
		Seal material	NBR	= M
<input type="text" value="27"/>	Throttle	Without throttle		= no code
		Throttle diameter	Ø 1.0 mm	= B10
		Throttle diameter	Ø 2.5 mm	= B25

Reducing module, type "R" (dimensions in mm)

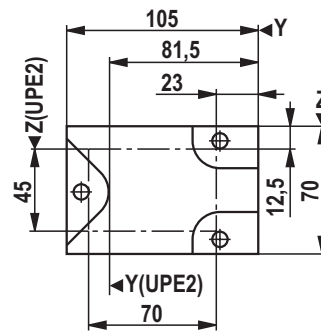
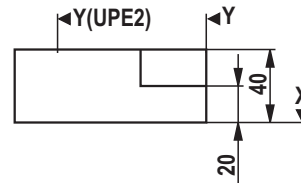
Reducing module IH15B to IH15A (right),
type "RIH15AR"

Symbol



Unit dimensions

Dimension Z = 70 mm



Material no.	Device designation	Type designation
	Reducing module IH15B to IH15A (right)	IH15MB-1X/RIH15AR- <input type="text" value="27"/> / <input type="text" value="26"/>
R904101836		IH15MB-1X/RIH15AR-V

<input type="text" value="26"/> Seal	Seal material Seal material	FKM NBR	= V = M
<input type="text" value="27"/> Throttle	Without throttle Throttle diameter Throttle diameter	Ø 1.0 mm Ø 2.5 mm	= no code = B10 = B25

Reducing module, type "R" (dimensions in mm)

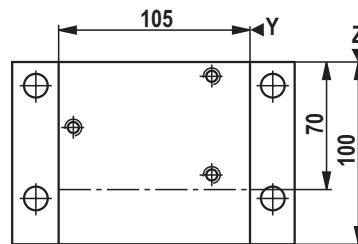
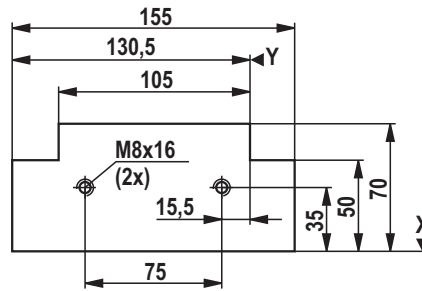
Reducing module IH15B to IH20B (right), type "RIH20BR"

Symbol



Unit dimensions

Dimension Z = 100 mm



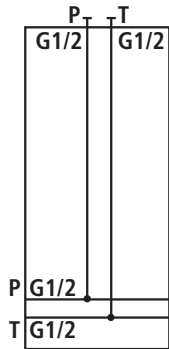
Material no.	Device designation	Type designation
	Reducing module IH15B to IH20B (right)	IH15MB-1X/RIH20BR- <input type="text" value="27"/> / <input type="text" value="26"/>
R904101837		IH15MB-1X/RIH20BR-V

<input type="text" value="26"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M
<input type="text" value="27"/> Throttle	Without throttle		= no code
	Throttle diameter	Ø 1.0 mm	= B10
	Throttle diameter	Ø 2.5 mm	= B25

Module with threaded connection for pipeline installation (dimensions in mm)

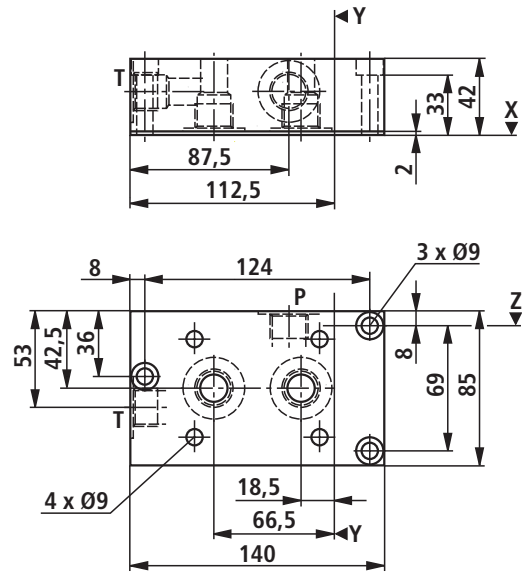
Tank connection module for sandwich module with threaded connection, type "BAZG"

Symbol



Unit dimensions

Dimension Z = 85 mm



Material no.	Device designation	Type designation
	Tank connection module for sandwich module for pipeline installation	IH15MB-1X/BAZG- <input type="text" value="26"/>
R901112004		IH15MB-1X/BAZG-V

<input type="text" value="26"/> Seal	Seal material	FKM	= V
	Seal material	NBR	= M

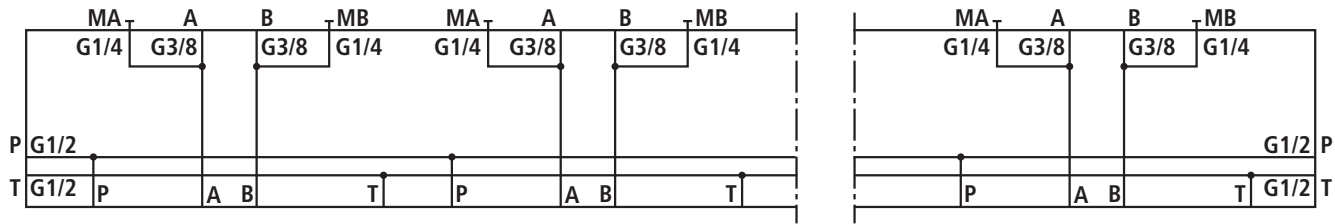
Module with threaded connection for pipeline installation (dimensions in mm)

Sandwich module with threaded connection, type "WZG..."

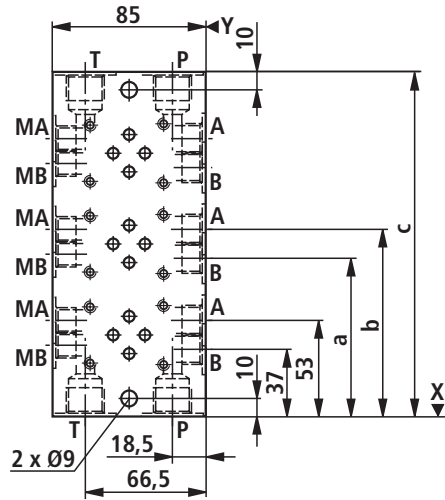
Symbol

Unit dimensions

Dimension Z = 70 mm



Number of valve stations	Dimension a	Dimension b	Dimension c
2-fold	87	103	140
3-fold	137	153	190
4-fold	187	203	240
5-fold	237	253	290
6-fold	287	303	340
7-fold	337	353	390
8-fold	387	403	440
9-fold	437	453	490
10-fold	487	503	540



Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 2 valve stations	IH15MB-1X/WZG2- <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901300657		IH15MB-1X/WZG2-M/V
R901135266		IH15MB-1X/WZG2-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 3 valve stations	IH15MB-1X/WZG3- <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901300653		IH15MB-1X/WZG3-M/V
R901300656		IH15MB-1X/WZG3-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 4 valve stations	IH15MB-1X/WZG4- <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901300650		IH15MB-1X/WZG4-M/V
R901300652		IH15MB-1X/WZG4-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 5 valve stations	IH15MB-1X/WZG5- <input type="text"/> ¹⁴ / <input type="text"/> ²⁶
R901300649		IH15MB-1X/WZG5-M/V
R901300648		IH15MB-1X/WZG5-O/V

Module with threaded connection for pipeline installation (dimensions in mm)

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 6 valve stations	IH15MB-1X/WZG6- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901301740		IH15MB-1X/WZG6-M/V
R901301741		IH15MB-1X/WZG6-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 7 valve stations	IH15MB-1X/WZG7- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901301738		IH15MB-1X/WZG7-M/V
R901301739		IH15MB-1X/WZG7-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 8 valve stations	IH15MB-1X/WZG8- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901301736		IH15MB-1X/WZG8-M/V
R901301737		IH15MB-1X/WZG8-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 9 valve stations	IH15MB-1X/WZG9- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901301734		IH15MB-1X/WZG9-M/V
R901301735		IH15MB-1X/WZG9-O/V

Material no.	Device designation	Type designation
	Sandwich module with threaded connection, 10 valve stations	IH15MB-1X/WZG10- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901301732		IH15MB-1X/WZG10-M/V
R901301733		IH15MB-1X/WZG10-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port Without pressure monitoring		= M = O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

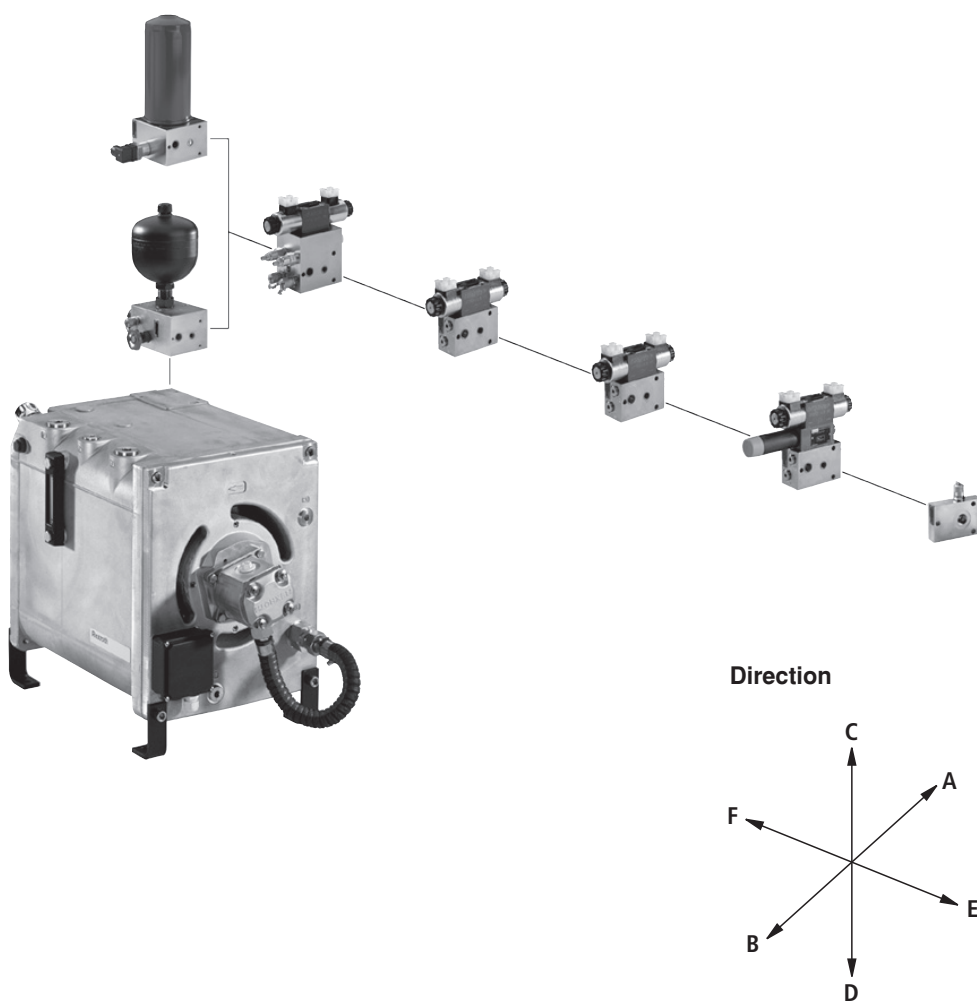
Module for drive module UPE5, type "UPE5": Description, general

The control modules for the UPE5 drive module serves the realization of complete hydraulic controls. They can be fitted and mounted individually.

The filter **or** accumulator shut-off module establishes the connection of the hydraulic control to the K2 connection of the drive module (see 51145).

Using the connection modules, the IH15B control modules can be attached to the filter **or** accumulator shut-off module.

Module for drive module UPE5, type "UPE5": Attachment



Project planning information

The total length of the IH15B control should not be longer than the UPE5 drive module.

Maximum recommended total length $l = 500$ mm.

Please consult us if the total length of the required control should be longer.

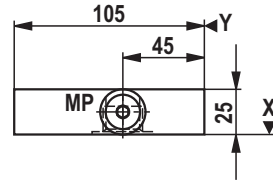
Module for drive module UPE5, type "UPE5" (dimensions in mm)

Connection module, type "UPE5A"

Symbol



Unit dimensions

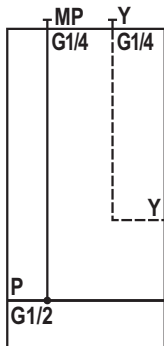


Dimension Z = 70 mm

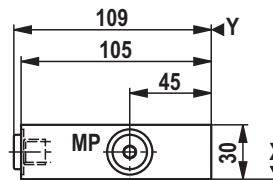
Material no.	Device designation	Type designation
	Connection module	IH15MB-1X/UPE5A- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101342		IH15MB-1X/UPE5A-M/V
R901070572		IH15MB-1X/UPE5A-O/V

Connection module with Y channel, type "UPE5AY"

Symbol



Unit dimensions



Dimension Z = 70 mm



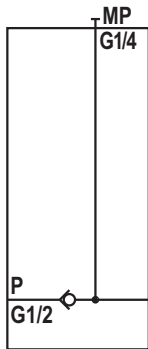
Material no.	Device designation	Type designation
	Connection module with Y channel	IH15MB-1X/UPE5AY- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R904101850		IH15MB-1X/UPE5AY-M/V
R901070573		IH15MB-1X/UPE5AY-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M
	Without measuring port		= O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

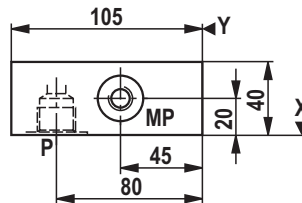
Module for drive module UPE5, type "UPE5" (dimensions in mm)

Connection module with check valve, type "UPE5AR"

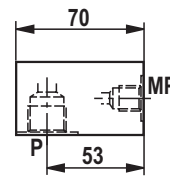
Symbol



Unit dimensions



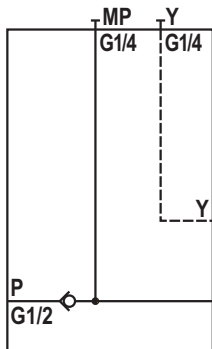
Dimension Z = 70 mm



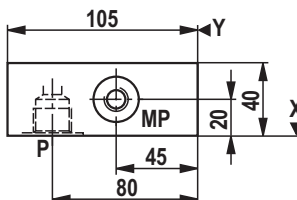
Material no.	Device designation	Type designation
	Connection module with check valve	IH15MB-1X/UPE5AR- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901184480		IH15MB-1X/UPE5AR-M/V
R901189885		IH15MB-1X/UPE5AR-O/V

Connection module with Y channel and check valve, type "UPE5AYR"

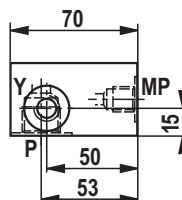
Symbol



Unit dimensions



Dimension Z = 70 mm



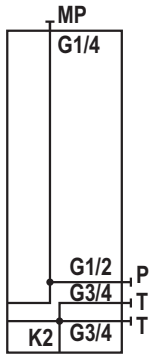
Material no.	Device designation	Type designation
	Connection module with Y channel and check valve	IH15MB-1X/UPE5AYR- <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901184481		IH15MB-1X/UPE5AYR-M/V
R901189886		IH15MB-1X/UPE5AYR-O/V

<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M
	Without pressure monitoring		= O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for drive module UPE5, type "UPE5" (dimensions in mm)

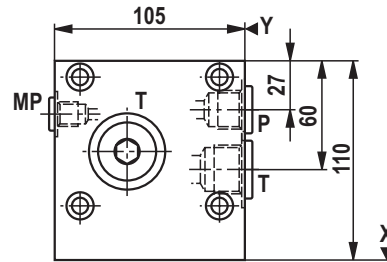
Tank connection module, type "UPE5BA"

Symbol



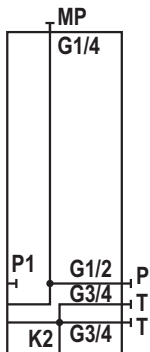
Unit dimensions

Dimension Z = 70 mm



Tank connection module with P1 channel, type "UPE5BAP1"

Symbol



Material no.	Device designation	Type designation
	Tank connection module, type "UPE5BAP1"	IH15MB-1X/UPE5BA-PT/ <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901125941		IH15MB-1X/UPE5BA-PT/M/V
R901124952		IH15MB-1X/UPE5BA-PT/O/V

Material no.	Device designation	Type designation
	Tank connection module with P1 channel, type "UPE5BAP1"	IH15MB-1X/UPE5BAP1-PT/ <input type="checkbox"/> ¹⁴ / <input type="checkbox"/> ²⁶
R901128499		IH15MB-1X/UPE5BAP1-PT/M/V
R901128498		IH15MB-1X/UPE5BAP1-PT/O/V

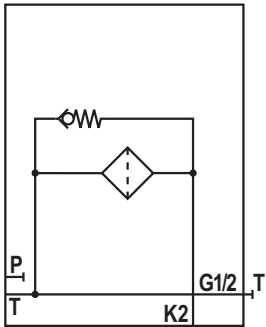
<input type="checkbox"/> ¹⁴ Pressure monitoring	With measuring port		= M
	Without measuring port		= O
<input type="checkbox"/> ²⁶ Seal	Seal material	FKM	= V
	Seal material	NBR	= M

Module for drive module UPE5, type "UPE5" (dimensions in mm)

Filter module, type "UPE5F30", "UPE5F60"

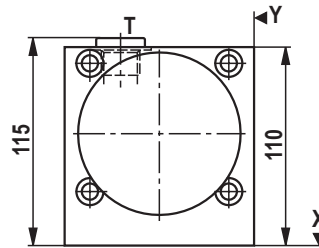
($p_{\max} = 7 \text{ bar}$)

Symbol

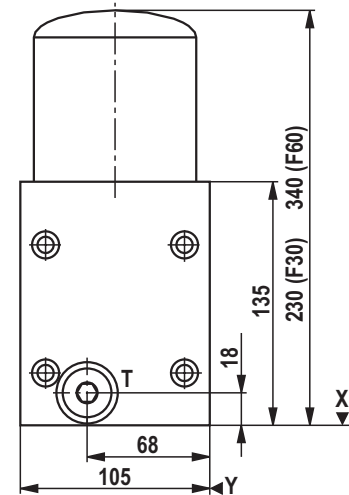


Unit dimensions

Dimension Z = 165 mm UPE5F30 position
Dimension Z = 275 mm UPE5F60 position
Dimension Z = 70 mm position "F"



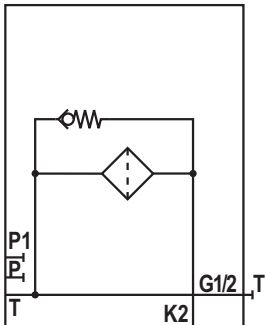
Position of the filter
Version "C"



Position of the filter
Version "F"

Filter module with P1 channel, type "UPE5F30P1", "UPE5F60P1" ($p_{\max} = 7 \text{ bar}$)

Symbol



Installation information:

Wind the filter cartridge as tight as possible on the block.
Then, wind the filter cartridge by further 1/3 of a rotation.

Material no.	Device designation	Type designation
	Filter module	IH15EB-1X/UPE5F30- <input type="text"/> <input type="text"/> / <input type="text"/> / <input type="text"/>
R901070574		IH15EB-1X/UPE5F30-C/10/A/V
R904101860		IH15EB-1X/UPE5F30-C/10/E/V
R901070575		IH15EB-1X/UPE5F30-C/10/O/V

Material no.	Device designation	Type designation
	Filter module	IH15EB-1X/UPE5F60- <input type="text"/> <input type="text"/> / <input type="text"/> / <input type="text"/>
R901070576		IH15EB-1X/UPE5F60-C/10/A/V
R904101346		IH15EB-1X/UPE5F60-C/10/E/V
R901070577		IH15EB-1X/UPE5F60-C/10/O/V

Module for drive module UPE5, type "UPE5"

Material no.	Device designation	Type designation
	Filter module with P1 channel	IH15EB-1X/UPE5F30P1- <input type="text"/> ³⁰ <input type="text"/> ¹⁹ / <input type="text"/> ²⁰ / <input type="text"/> ²⁶
R901070579		IH15EB-1X/UPE5F30P1-C/10/A/V
R904101863		IH15EB-1X/UPE5F30P1-C/10/E/V
R901070580		IH15EB-1X/UPE5F30P1-C/10/O/V

Material no.	Device designation	Type designation
	Filter module with P1 channel	IH15EB-1X/UPE5F60P1- <input type="text"/> ³⁰ <input type="text"/> ¹⁹ / <input type="text"/> ²⁰ / <input type="text"/> ²⁶
R901070581		IH15EB-1X/UPE5F60P1-C/10/A/V
R904101862		IH15EB-1X/UPE5F60P1-C/10/E/V
R901070582		IH15EB-1X/UPE5F60P1-C/10/O/V

<input type="text"/> ¹⁹	Filter rating	06 µm 10 µm	= 06 = 10
<input type="text"/> ²⁰	Clogging indicator	Without clogging indicator Visual clogging indicator Electric clogging indicator	= A = O = E
<input type="text"/> ²⁶	Seal	Seal material Seal material	FKM = V NBR = M
<input type="text"/> ³⁰	Position of the filter	Direction C Direction F	= C = F

Module for drive module UPE5, type "UPE5" (dimensions in mm)

Project planning information

When designing the control with accumulator you have to make sure that the accumulator is protected against inadmissible overpressure by means of a type examination-tested pressure relief valve. The type-examination tested pressure relief valve must not accept any control tasks. The set pressure of the type-examination tested pressure relief valve must be less than or equal to the maximum admissible operating pressure of the accumulator.

In order to achieve the best utilization of the accumulator volume possible as well as long service life, compliance with the following nitrogen filling pressure value is recommended:

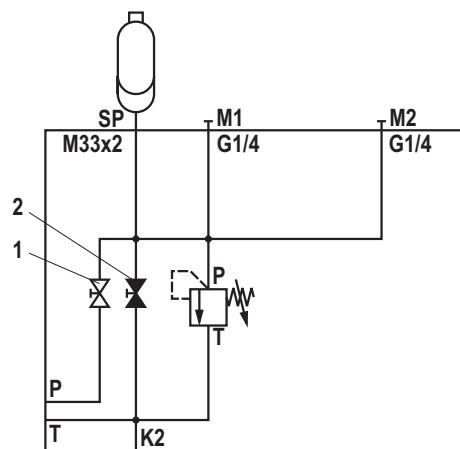
$$p_o = 0.9 \times p_{(\text{minimum operating pressure})}$$

Mounting information

The accumulators is to be fastened so that in case of operational vibrations, safe hold is guaranteed. No holding forces may be applied via the oil and gas connection.

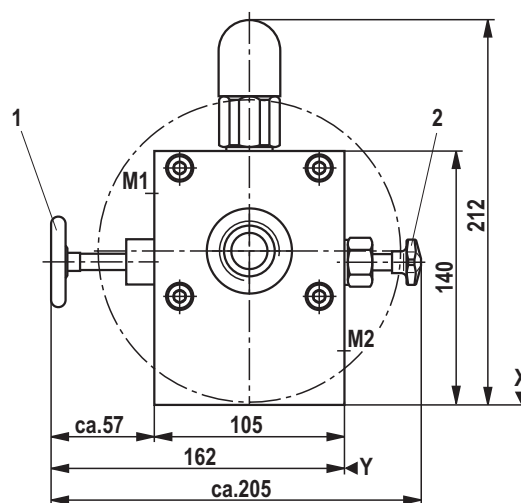
Accumulator shut-off module, type "UPE5SSB"

Symbol



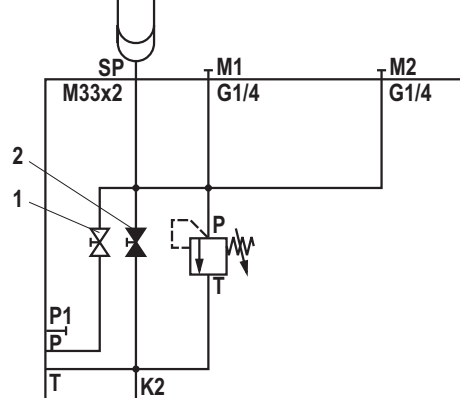
Unit dimensions

Dimension Z = max 336 mm



Accumulator shut-off module with P1 channel, type "UPE5SSBP1"

Symbol



- Operating information:
- 1 System stop valve must be open in the operating condition
 - 2 Manual unloading must be closed in the operating condition

Material no.	Device designation	Type designation
	Accumulator shut-off module	IH15EB-1X/UPE5SSB- <div style="display: flex; justify-content: space-around; align-items: center;"> 1 2 31 14 8 18 26 </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 5px;"> </div>
R904101864		IH15EB-1X/UPE5SSB-S140E/E/MG24/1,40/V
R901070583		IH15EB-1X/UPE5SSB-S140E/E/OG24/1,40/V
R904101791		IH15EB-1X/UPE5SSB-S140E/M/M/1,40/V
R901070584		IH15EB-1X/UPE5SSB-S140E/M/O/1,40/V

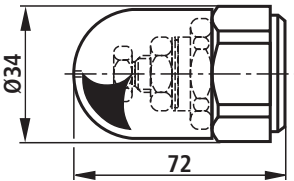
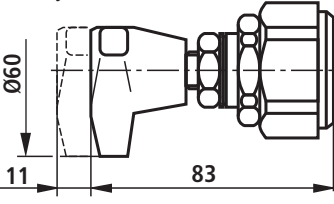
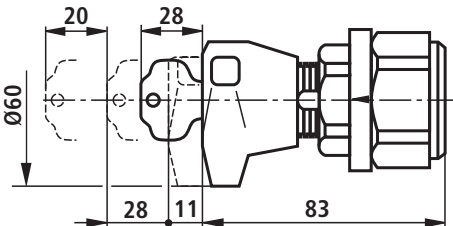
Module for drive module UPE5, type "UPE5"

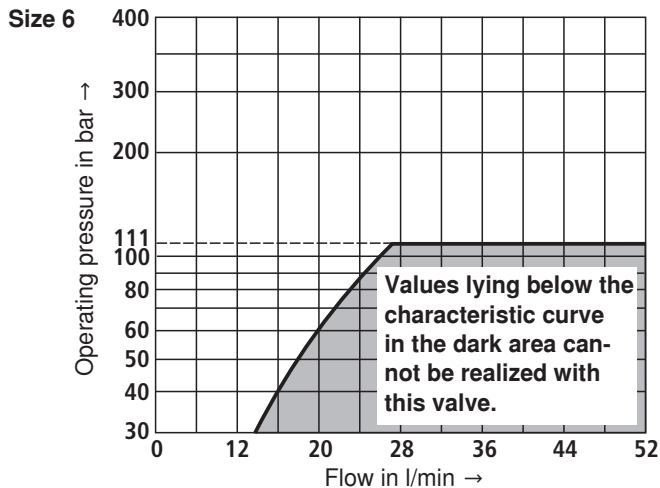
Material no.	Device designation	Type designation
	Accumulator shut-off module with P1 channel	IH15EB-1X/UPE5SSBP1- <div style="display: flex; justify-content: space-around; font-size: small;"> 1 3 31 14 8 18 26 </div> <div style="display: flex; justify-content: space-around; border: 1px solid black; width: 100%; height: 20px; margin-top: 5px;"></div>
R904101866		IH15EB-1X/UPE5SSBP1-S140E/E/MG24/1,40/V
R901070586		IH15EB-1X/UPE5SSBP1-S140E/E/OG24/1,40/V
R904101865		IH15EB-1X/UPE5SSBP1-S140E/M/M/1,40/V
R901070587		IH15EB-1X/UPE5SSBP1-S140E/M/O/1,40/V

1	Adjustment element at the pressure relief valve	Setscrew with hexagon and protective cap	= S
<input type="checkbox"/>		Rotary knob	= H
<input type="checkbox"/>		Lockable rotary knob	= A
3	Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!		
<input type="checkbox"/>		Setting pressure up to max.	50 bar = 50E
<input type="checkbox"/>		Setting pressure up to max.	100 bar = 100E
<input type="checkbox"/>		Setting pressure up to max.	140 bar = 140E
<input type="checkbox"/>		Setting pressure up to max.	210 bar = 210E
<input type="checkbox"/>		Setting pressure up to max.	330 bar = 330E
Characteristic curve for type-examination tested pressure relief valves type: DBD...E Type testing according to Pressure Equipment Directive 97/23/EC			See page 89
8	Solenoid voltage of the seat valves	Volt	24 V DC = G24
<input type="checkbox"/>			
14	Pressure monitoring	With measuring port	= M
<input type="checkbox"/>		Without pressure monitoring	= O
18	Diaphragm-type accumulator	Nominal volume in l	Max. pressure in bar
<input type="checkbox"/>		0.35	210 = 0.35
<input type="checkbox"/>		0.50	210 = 0.50
<input type="checkbox"/>		0.70	210 = 0.70
<input type="checkbox"/>		0.70	350 = 0.70
<input type="checkbox"/>		1.40	140 = 1.40
<input type="checkbox"/>		1.40	350 = 1.40
<input type="checkbox"/>		2.00	350 = 2.00
<input type="checkbox"/>		2.80	350 = 2.80
<input type="checkbox"/>		3.50	350 = 3.50
	Bladder-type accumulator	0.50	400 = 0.50
		4.00	330 = 4.00
26	Seal	Seal material	FKM = V
<input type="checkbox"/>		Seal material	NBR = M
31	Unloading	Manual	= M
<input type="checkbox"/>		Manual and electromagnetic	= E

Type key

Information on the type key

<p>1 <input type="checkbox"/> Adjustment element at the pressure relief valve</p>	<p>Setscrew with hexagon and protective cap</p> 		<p>= S</p>
	<p>Rotary knob</p> 		<p>= H</p>
	<p>Lockable rotary knob</p> 		<p>= A</p>
<p>2 <input type="checkbox"/> Pressure rating of the pressure relief valve</p>	<p>Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.</p>	<p>25 bar 50 bar 100 bar 200 bar 315 bar 400 bar</p>	<p>= 25 = 50 = 100 = 200 = 315 = 400</p>
<p>Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive) More pressure ratings on request!</p>			
	<p>Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.</p>	<p>50 bar 100 bar 140 bar 210 bar 330 bar</p>	<p>= 50E = 100E = 140E = 210E = 330E</p>
<p>Characteristic curve for type-examination tested pressure relief valves type: DBD../..E Type testing according to Pressure Equipment Directive 97/23/EC</p>			



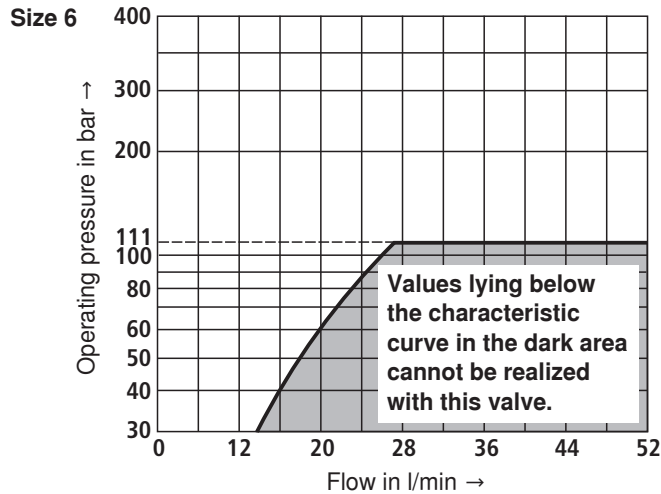
Type key

Information on the type key

³ Pressure rating of the type-examination tested pressure relief valve, according to Directive 97/23/EC (Pressure Equipment Directive)
More pressure ratings on request!

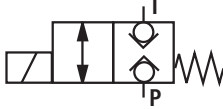
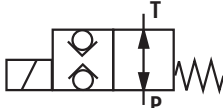
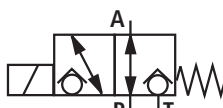
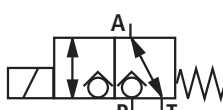
Setting pressure up to max.	50 bar	= 50E
Setting pressure up to max.	100 bar	= 100E
Setting pressure up to max.	140 bar	= 140E
Setting pressure up to max.	210 bar	= 210E
Setting pressure up to max.	330 bar	= 330E

Characteristic curve for type-examination tested pressure relief valves type: DBD...E
Type testing according to Pressure Equipment Directive 97/23/EC



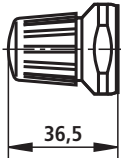
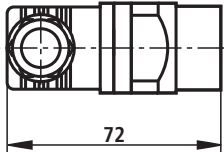
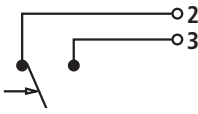

Type key

Information on the type key

4 <input type="checkbox"/> Designation of the 2/2 seat valve			= N
			= P
5 <input type="checkbox"/> Designation of the 3/2 seat valve			= U
			= C
8 <input type="checkbox"/> Solenoid voltage of the seat valves	Volt	24 V DC	= G24
14 <input type="checkbox"/> Pressure monitoring	With measuring port Without pressure monitoring		= M = O
15 <input type="checkbox"/> Max. pressure range of the pressure gauge	Without pressure monitoring Display range 60 bar Display range 100 bar Display range 250 bar Display range 400 bar		= no code = 60 = 100 = 250 = 400
16 <input type="checkbox"/> Adjustment element at the pressure reducing valve	Rotary knob Setscrew with hexagon and protective cap Lockable rotary knob with scale Rotary knob with scale		= 1 = 2 = 3 = 7
17 <input type="checkbox"/> Secondary pressure	Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure	25 bar 75 bar 150 bar 210 bar 315 bar	= 25 = 75 = 150 = 210 = 315
18 <input type="checkbox"/> Diaphragm-type accumulator	Nominal volume in l	Max. pressure in bar	
	0.35	210	= 0.35
	0.50	210	= 0.50
	0.70	210	= 0.70
	0.70	350	= 0.70
	1.40	140	= 1.40
	1.40	350	= 1.40
	2.00	350	= 2.00
	2.80	350	= 2.80
	3.50	350	= 3.50
Bladder-type accumulator	0.50	400	= 0.50
	4.00	330	= 4.00

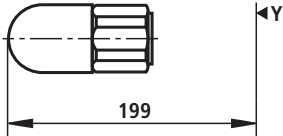
Type key

Information on the type key

¹⁹ <input type="checkbox"/> Filter rating	06 µm 10 µm	= 06 = 10
²⁰ <input type="checkbox"/> Clogging indicator	Without clogging indicator	= A
	Visual clogging indicator 	= O
	Electric clogging indicator 	= E
Technical data of the electric clogging indicator		
	Maximum voltage	V 42
	Switching power	VA 100
	Protection class with protective cap	IP 65
	Contacts	Normally closed contact
Terminal assignment		
		
	Filter element clean	Filter element contaminated
²¹ <input type="checkbox"/> Check valve	Without check valve In channel P In channel T In channel P and T	= no code = P = T = PT
²² <input type="checkbox"/> Ports	Without ports P and T	= no code = PT

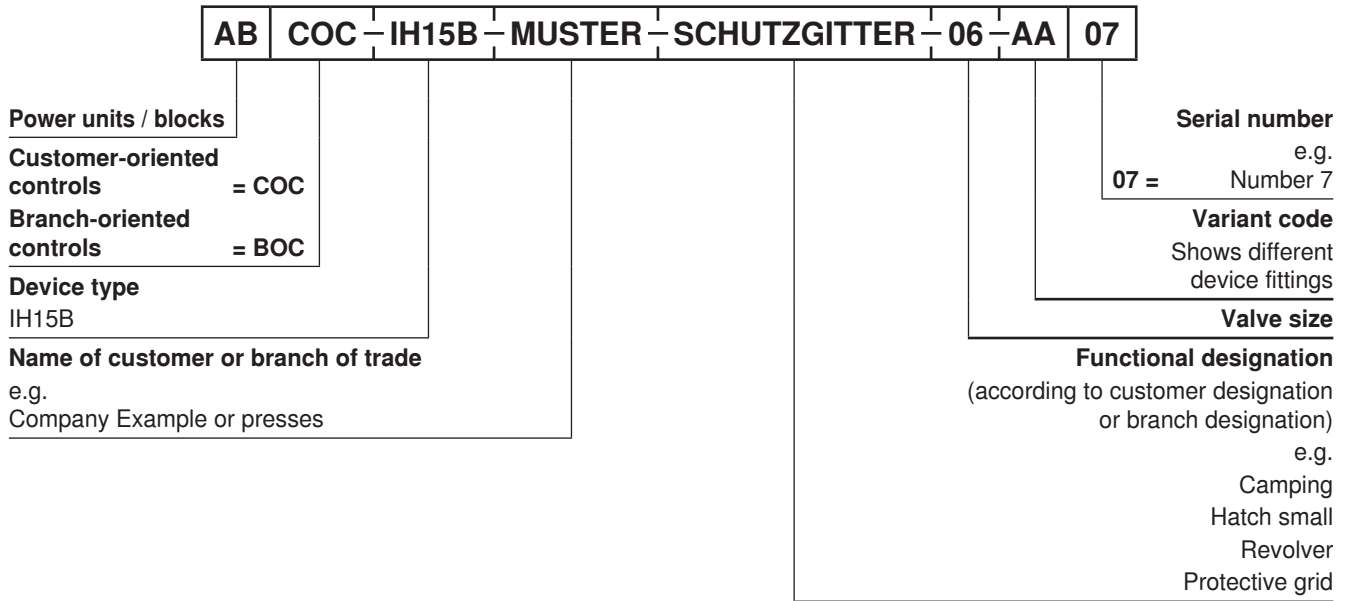
Type key

Information on the type key

23	Adjustment type	Hexagon with protective cap	= 2
			
24	Pressure rating of the pressure cut-off valve	Setting pressure up to max. Setting pressure up to max. Setting pressure up to max. Setting pressure up to max.	50 bar = C 100 bar = F 200 bar = K 350 bar = R
26	Seal	Seal material Seal material	FKM = V NBR = M
27	Throttle	Without throttle Throttle diameter Throttle diameter	= no code = B10 = B25
28	Cartridge valve	Adjustable throttle check valve Pilot operated check valve Adjustable throttle check valve and pilot operated check valve	= FS = R = FSR
29	Cartridge valve	In channel A In channel B In channel A and B	= A = B = AB
30	Position of the filter	Direction C Direction F	= C = F
31	Unloading	Manual Manual and electromagnetic	= M = E
32	Stop valve	Without stop valve With stop valve	= no code = A
33	Adjustment element at the pressure reducing valve	Setscrew with hexagon and protective cap Rotary knob with scale, lockable	= 2 = 3
34	Secondary pressure	Max. secondary pressure Max. secondary pressure Max. secondary pressure Max. secondary pressure with pressure switch Max. secondary pressure with pressure switch Max. secondary pressure with pressure switch	100 bar = 100 210 bar = 210 315 bar = 315 100 bar = 100D 210 bar = 210D 315 bar = 315D

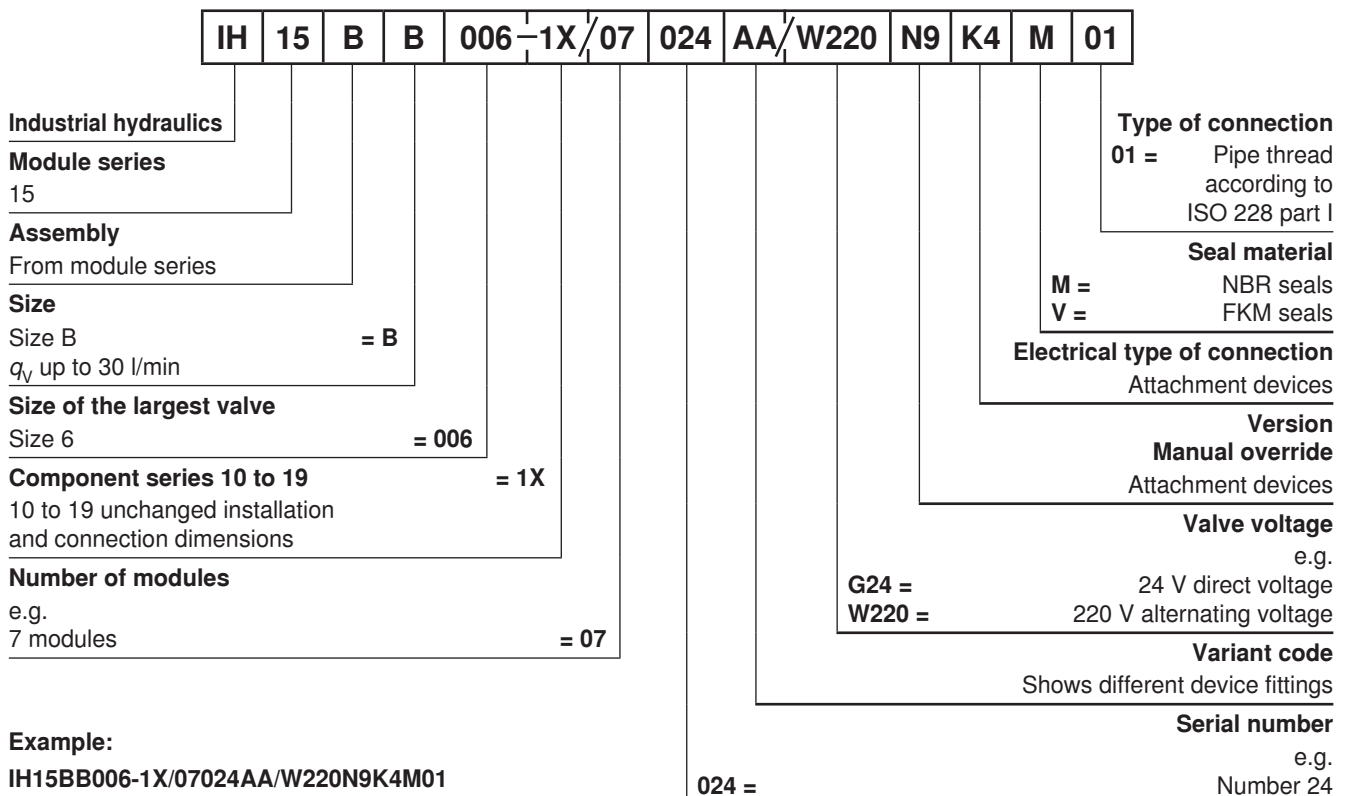
Type keys for module with vertical stacking

Type: ABCOC / ABBOC



Type key for complete control system

Type: IH15BB



Example:

IH15BB006-1X/07024AA/W220N9K4M01

Assembly IH15B of size B up to 30 l/min with valves of size 6, 7 modules, serial number 24, variant AA, 220 V alternating voltage, N9 manual override, K4 type of connection, seal material Perbunan, type of connection with pipe thread according to ISO 228 part 1

Accessories

Filter element

Material no.	Module	Denomination	Size	Material	Filter rating
R928037999	F30 / UPE5F30	80.30/22 H6XL-S00-5-M	30	NBR	06 µm
R928039389	F30 / UPE5F30	80.30/22 H6XL-S00-5-V	30	FKM	06 µm
R928037978	F30 / UPE5F30	80.30/22 H10XL-S00-5-M	30	NBR	10 µm
R928039388	F30 / UPE5F30	80.30/22 H10XL-S00-5-V	30	FKM	10 µm
R928038331	F60 / UPE5F60	84.60 H10XL-S00-5-M	60	NBR	10 µm
R928038332	F60 / UPE5F60	84.60 H10XL-S00-5-V	60	FKM	10 µm
R928037988	F60 / UPE5F60	84.60 H6XL-S00-5-M	60	NBR	06 µm
R928037989	F60 / UPE5F60	84.60 H6XL-S00-5-V	60	FKM	06 µm
R928006053	DF30 / DFS30	2.0004 H10XL-A00-0-M	30	NBR	10 µm
R928006080	DF30 / DFS30	2.0004 H10XL-A00-0-V	30	FKM	10 µm
R928006655	DF40 / DFS40	2.0040 H6XL-B00-0-M	40	NBR	06 µm
R928006682	DF40 / DFS40	2.0040 H6XL-B00-0-V	40	FKM	06 µm
R928006656	DF40 / DFS40	2.0040 H10XL-B00-0-M	40	NBR	10 µm
R928006683	DF40 / DFS40	2.0040 H10XL-B00-0-V	40	FKM	10 µm
R928006124	DF50 / DFS50	2.0005 H6XL-C00-0-M	50	NBR	06 µm
R928006151	DF50 / DFS50	2.0005 H6XL-C00-0-V	50	FKM	06 µm
R928006125	DF50 / DFS50	2.0005 H10XL-C00-0-M	50	NBR	10 µm
R928006152	DF50 / DFS50	2.0005 H10XL-C00-0-V	50	FKM	10 µm

Assembly tool for filter cartridge

- Strap wrench Material no.: R904001048

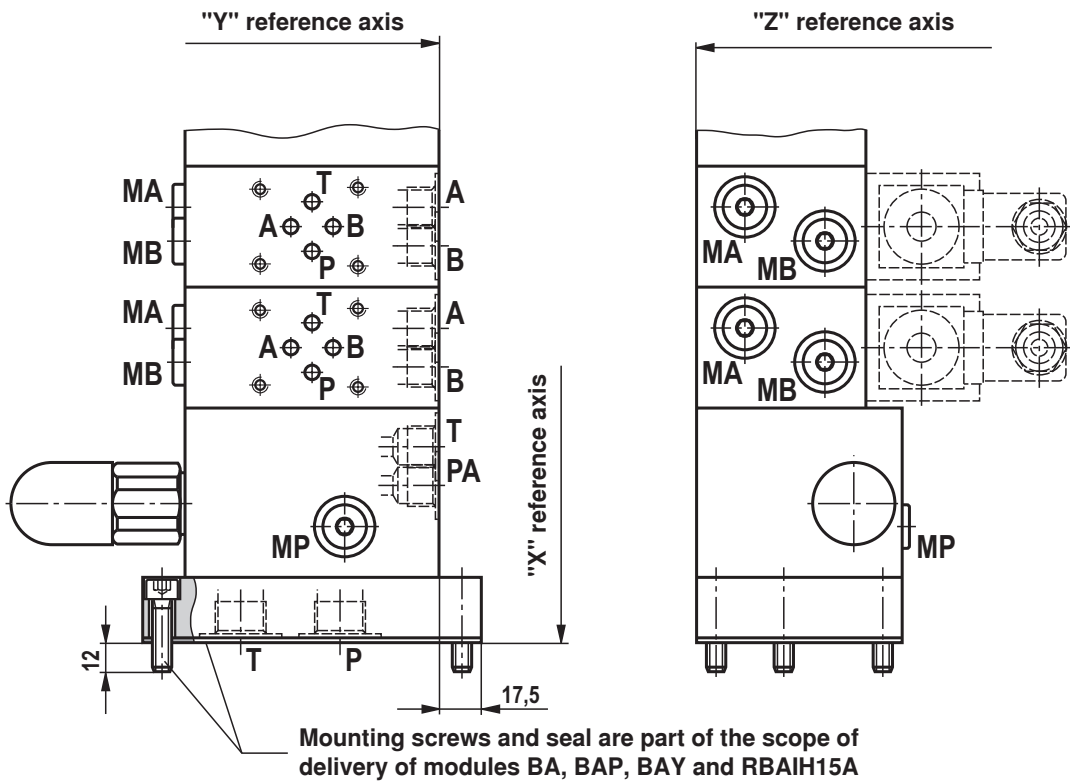
Installation information for F30, F60, UPE5F30 and UPE5F60:

- Wind the filter cartridge as tight as possible on the block.
Then, wind the filter cartridge further by further 1/3 of a rotation.

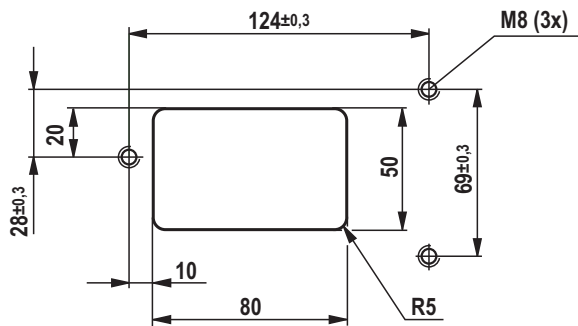
Installation information for DF30, DF40, DF50, DFS30, DFS40 and DFS50:

- Wind the filter cartridge as tight as possible on the block.
Then, wind it back by 1/8 to 1/4 of a rotation.

Dimensions: Unit dimensions (dimensions in mm)



Dimensions: Tank break-through (dimensions in mm)



Notes
