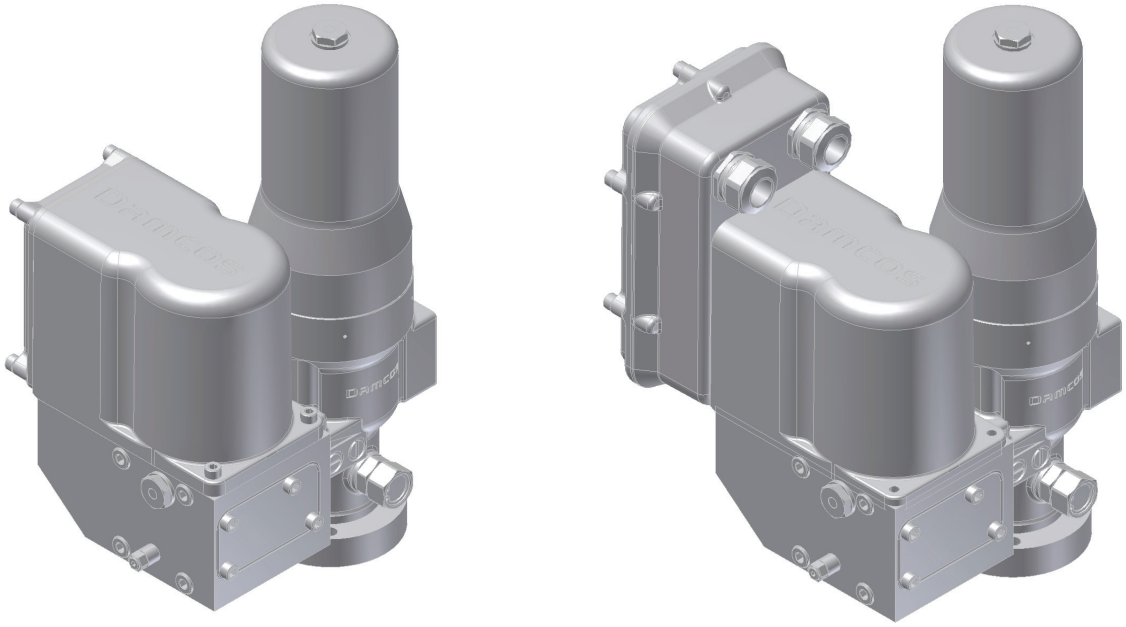
Product Data Sheet
January 2013
SD 1520-0E06

LPUM - Local Power Unit

General



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Process Management

Description

The LPUM - (Local Power Unit) - is an integrated electro-hydraulic system for remote control of valves and actuators.

The LPUM is especially developed for mounting direct on valve actuators, primarily on board ships.

The LPUM consists of a hydraulic pump which is driven by an asynchronous capacitor motor and several valve functions.

Features

The LPUM:

- matches the actuators:
  - BRC 125, BRC 250, BRC 500
  - BRCF 125, BRCF 250, BRCF 500
  - KC 65, KC 125
  - KF 65, KF 125
  - KFR 125
- has no external position indicator cable
- easy de-airing and oil filling

Controls

The standard version of LPUM has no internal control. LPUM can be equipped with P-NET interface and thus controlled electrically.

For further information about the control please see separate data sheets.

Position Indication Signal

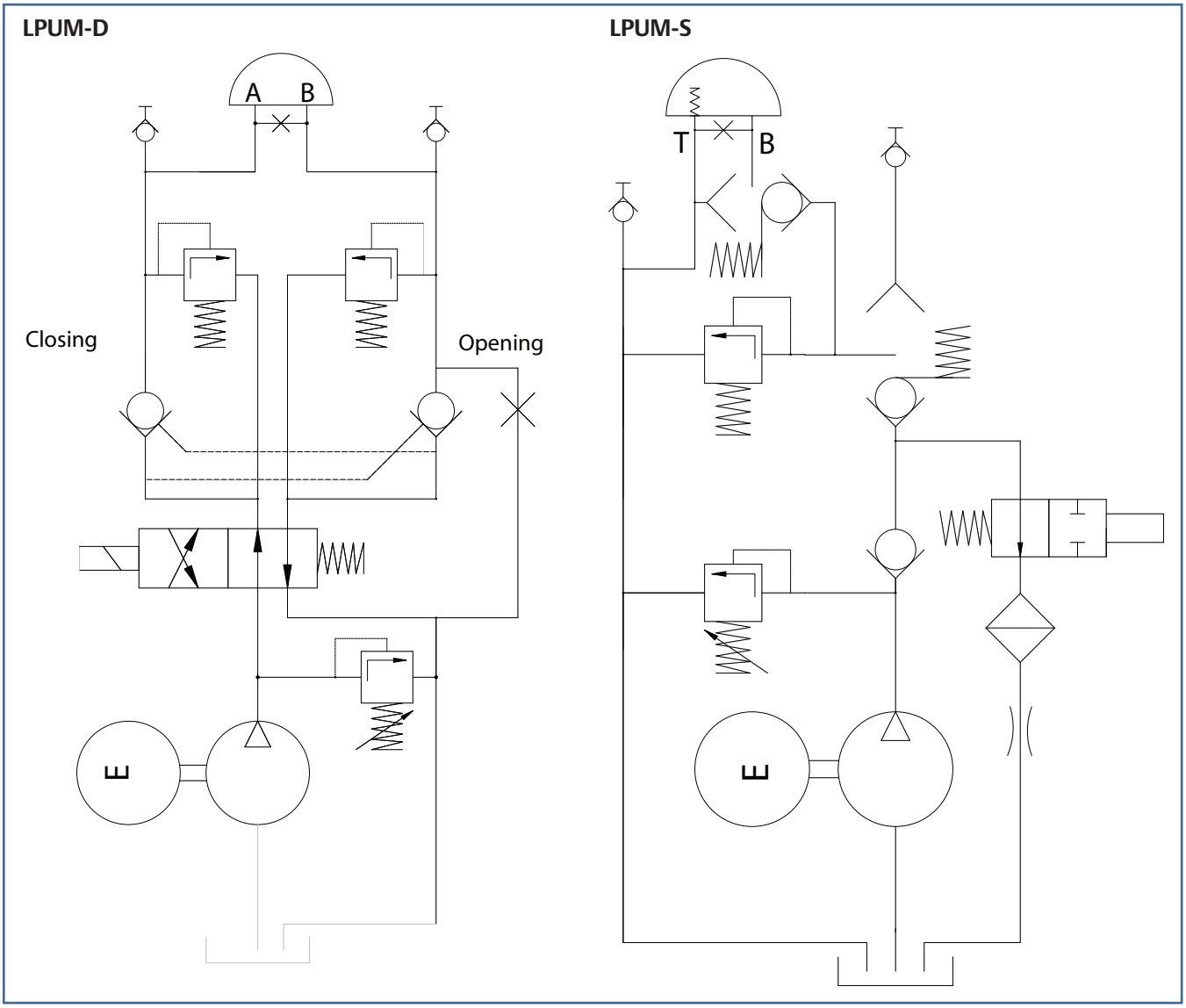
The position indicator (DPI) is built into the pump block with internal wiring from position indicator to the terminal box.

For further information about the DPI position indicator please see separate data sheets.

The LPUM's are basically in two different versions:

- LPUM-S for single-acting spring operated actuators (fail safe)
- LPUM-D for double-acting actuators (fail set)

Hydraulic Diagram for LPUM



Materials

Electrical housing, also for P-Net	Aluminium DS4261, AISI 12, anodized
Slides, etc.	Brass / steel
Screws, sign plate, rivets and bracket	Stainless steel
Seals	NBR/PTFE
Valve block	Al Mg Si1
Cable glands	Brass/Nickel

Hydraulic Specification

Operating speed

The operating duration can be calculated from the oil displacement of the actuator. The LPUM delivers a flow of 200 ml/min at 50 Hz.

Example: A BRC 250 can be opened in :

50 ml / 200 ml x 60 sec. = 15 sec.

Note: Max. running time limited to approx.45 seconds.

Actuator type:	Oil displacement:	Operating time (sec.) open/close for LPUM-D:	
	ml	50 Hz	60 Hz
BRC 125	26	8	6.7
BRC 250	50	15	12.5
BRC 500	100	30	25
KC 65	21	6.3	5.3
KC 125	82	25	20.5

		Operating time (sec.) open for LPUM-S:		Closing time (sec.) 22-25 ºC for LPUM-S*:
		50 Hz	60 Hz	50/60 Hz
BRCF 125	26	9	7.5	3
BRCF 250	50	17	14.2	5
BRCF 500	100	30	25	10
KF 65	21	7	5.8	4
KF/KFR 125	82	28	23.3	12

* *With standard orifice*

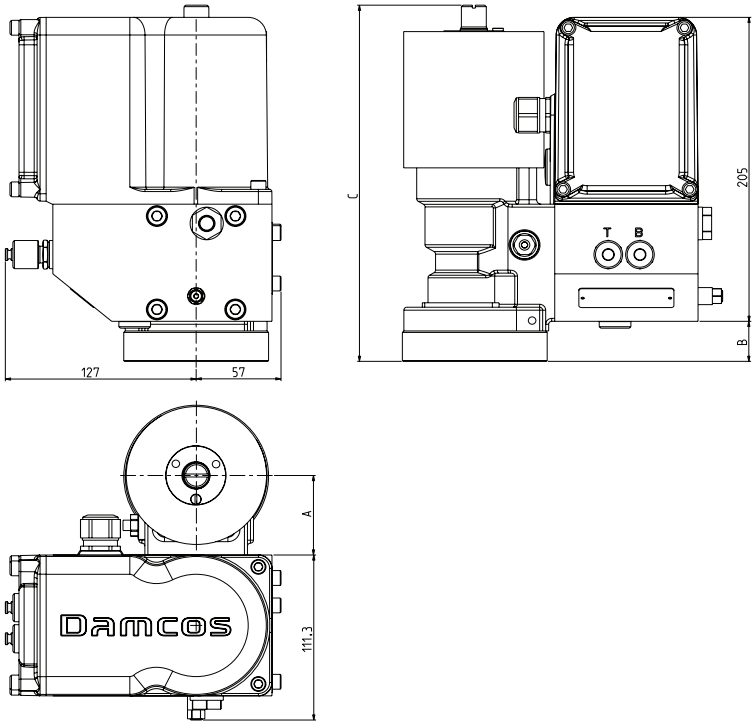
Working pressure	135 bar
Relief valve cracking pressure	150 bar
Safety valve pressure	210 ± 40 bar
Test pressure	225 bar
Ambient temperature	-5°C to 55°C
Tank volume/ utility volume	approx. 105 ml. / 35 ml.
Weight	7.5 kg

Electrical specification

Power supply	220-230 V AC 50 or 60 Hz
Starting current (220 V 50 Hz)	3.3A
Running current max. (220 V 50 Hz)	2.5A
Running current at 20°C (220 V 50 Hz)	2.2A
Max. running time	~ 45 sec. dependent on ambient temp. (max. 10% duty cycle)
Enclosure rating	IP 68, (3 bar in 24 hours)
The solenoid valve in - LPUM-S consumes approx.: 12 W corresponding to 0.07A LPUM-D consumes approx.: 9 W corresponding to 0.07 A	

Dimensions LPUM-S on BRCF actuator

See also the dimensions for LPUM P-NET

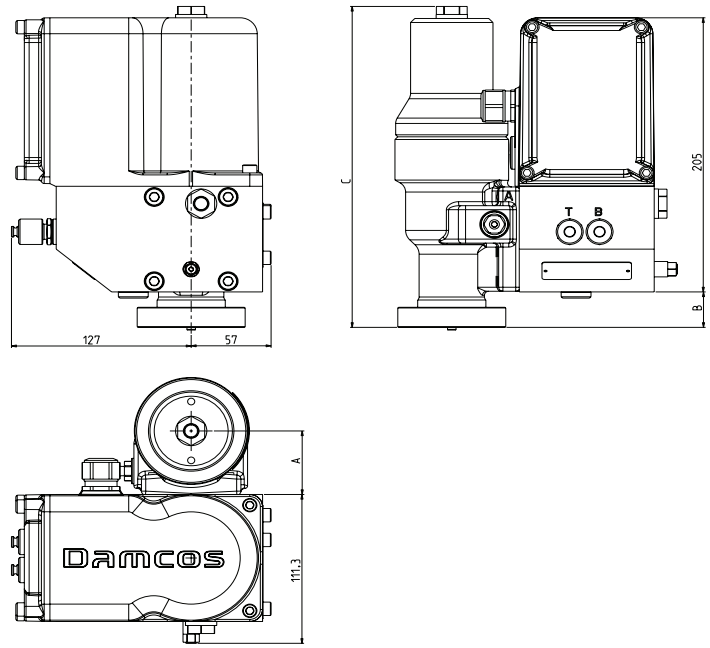


	A	B	C
BRCF 125	53	27	243.5
BRCF 250	60	31.5	292.5
BRCF 500	73	33,5	347

All dimensions in mm

Dimensions LPUM-S on KF/KFR actuator

See also the dimensions for LPUM P-NET

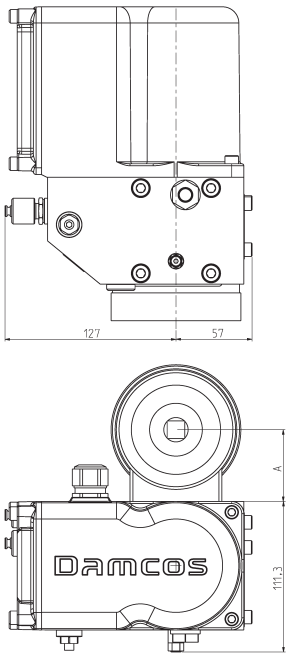


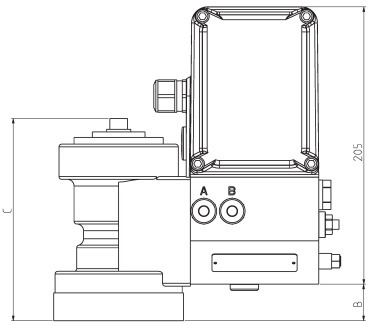
	A	B	C
KF 65	47.5	26.5	266
KF/KFR 125	50	34.5	345/360

All dimensions in mm

Dimensions LPUM-D on BRC actuator

See also the dimensions for LPUM P-NET



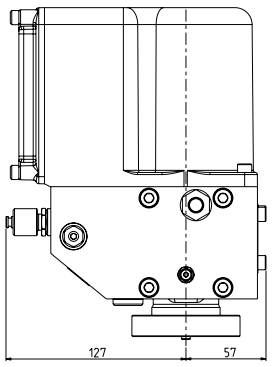


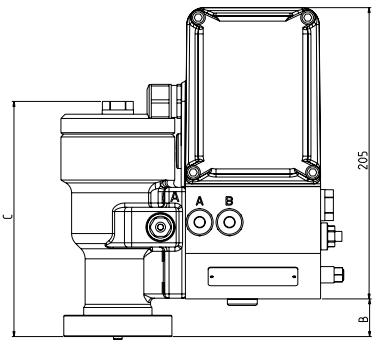
	A	B	C
BRC 125	53	27	149.5
BRC 250	60	31.5	174.5
BRC 500	73	33,5	199

All dimensions in mm

Dimensions LPUM-D on KC actuator

See also the dimension for LPUM P-NET





	A	B	C
KC 65	47.5	26.5	166
KC 125	50	34.5	210

All dimensions in mm

Cable Glands

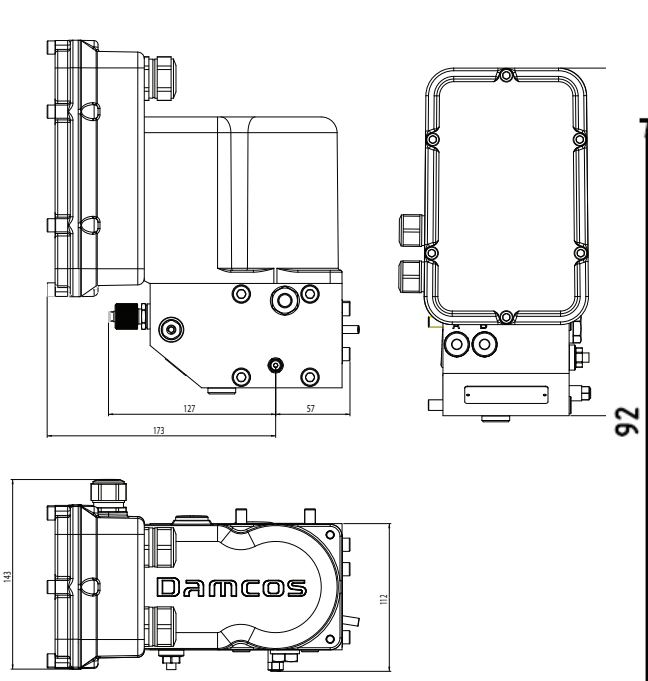
Standard version

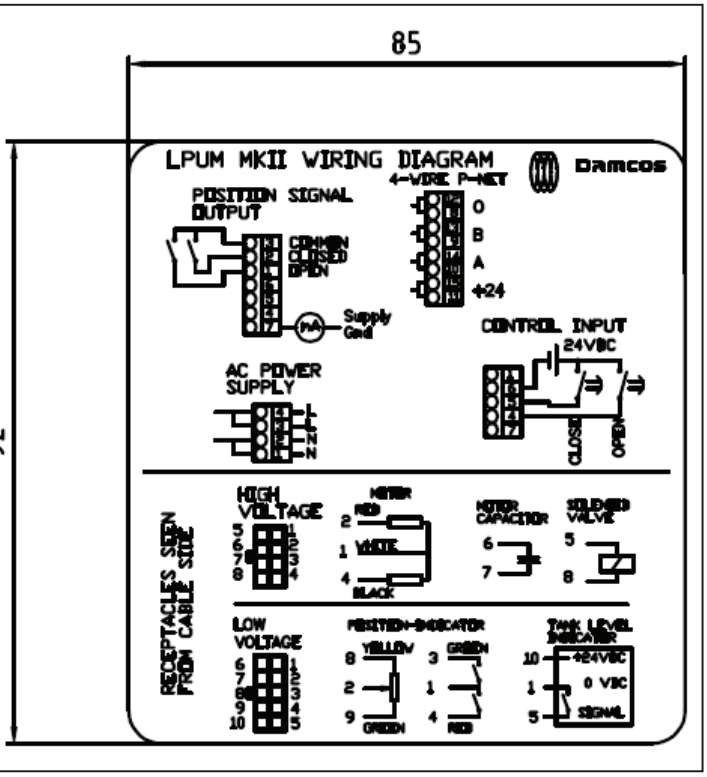
Cable glands	Standard: 1 pcs x M20 x 1.5 (8-15 mm cable). On request 2 pcs x M20 x 1.5 (8-15 mm cable).

P-NET version

Application	Thread	Number	Cable min. Ø	Cable max Ø	Screen	IP	Note
230V	M20*1.5	2	8	15	No	68	
P-NET	M25*1.5	2	13	16	Yes	68	
Alternative and additional options							
External position indicator connection	M16*1.5	(1)	8	10	Yes	68	LPU is delivered with a plug in the concerned thread
Reducer (thinner cable)	M25/M20	(2)				68	f. cable gland below
P-NET	M20*1.5	(2)	8	11	Yes	68	f. thinner P-NET cable

Dimensions and Connections LPUM P-NET



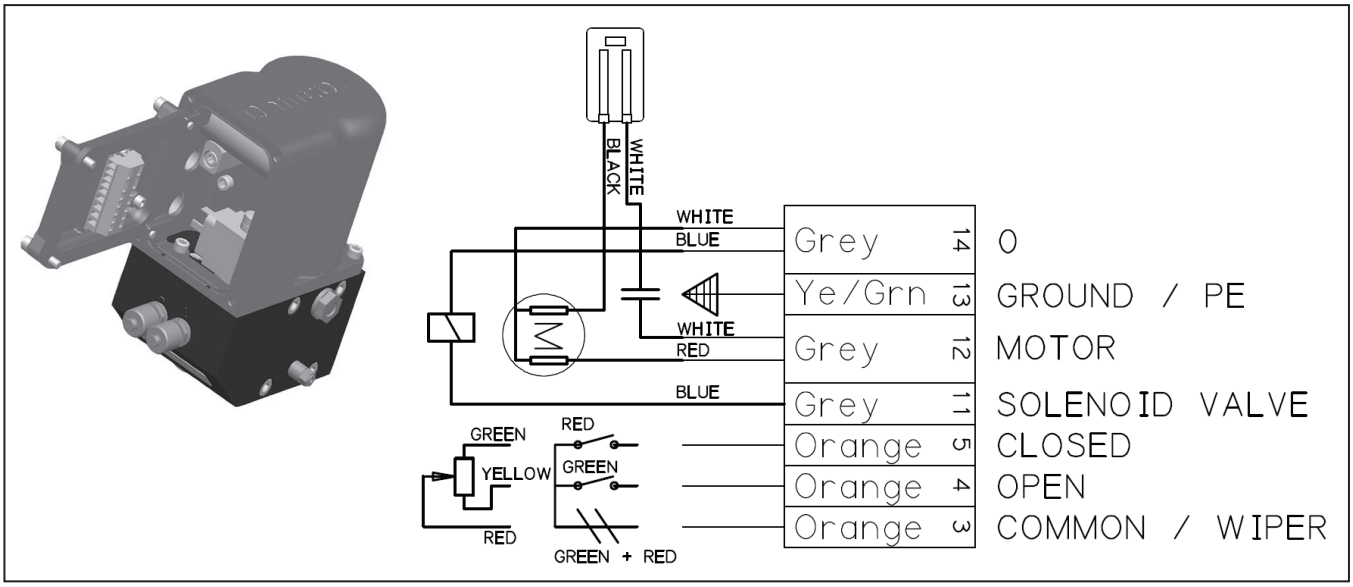


Ground connection is done with a separate M5 screw placed in the cover.

Mounting on Actuators

Direct mounting on BRC 125, 250, 500 - BRCF 125, 250, 500 - KC/KF 65 and KC/KF/KFR 125.

Cable connections - Standard



Placement and Tests

The LPUM can be placed according to LRS approval:

- ENV2 (closed rooms with temperature, humidity and vibrations)
- ENV3 (closed rooms with heat from other components)
- ENV4 (vibrating machinery and connected pipes)

Mounting direction:	Any
Cold test:	Function test at -15°C
Dry heat test:	70°C
Humidity test:	Static and cyclic for 6 days and nights
IP-enclosure:	IP 68, 3 bar in 24 hours
Vibration test:	5-25 Hz/± 1,6 mm and 25-200Hz ± 4.0 g in 3 directions
Mechanical shock:	80g for 6 msec. in 6 directions
Salt spray test:	4 weeks - 5% NaCl
EMC test acc. to IACS E10 (1999)	

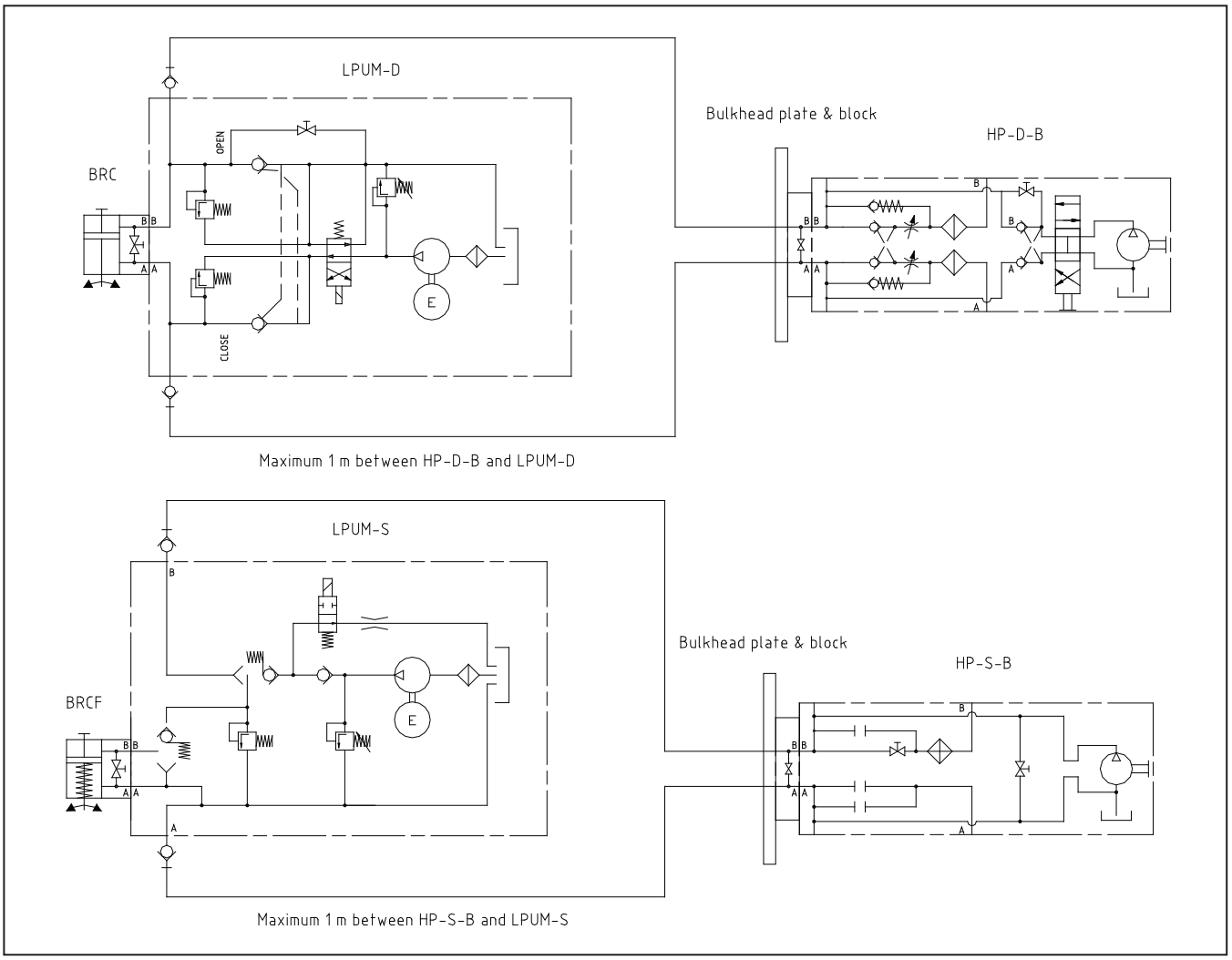
Approvals

The LPU is type approved by:

- Lloyds Register of Shipping
- Det norske Veritas
- ABS
- Germanischer Lloyd
- Bureau Veritas
- RINA

Emergency Operation

All units are provided with quick connections for connection of a portable hand pump for emergency operation of the valve. These can be replaced by pipes for permanent connection to hand pump - max. length 1m due to small internal tank volume. Handpump must be mounted above the LPUM to ensure an optimal performance. Some actuators may be emergency operated by a key, when the actuator cross-over valve is opened. Emergency operation is also possible by means of a permanently mounted hand pump. After emergency operation of the valve the remote control is automatically in charge.



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