

User Guide

Directional Mobile Valve

DMV

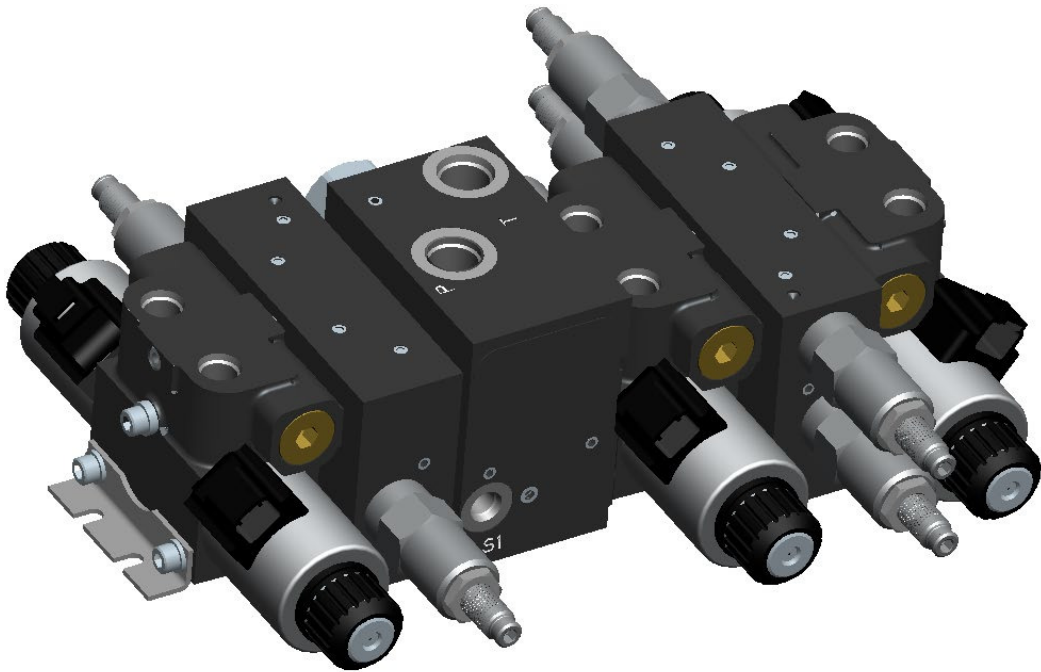


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Introduction

The DMV is a proportional directional valve with two solenoids. Based on the KDG4V-3 proportional valve design, it incorporates control of flow, direction, acceleration, and deceleration in a single control valve.

The primary function of these valves is to direct and meter fluid flow in proportion to current received by the solenoid. This fluid flow controls the velocity, direction, and acceleration or deceleration of a work cylinder or fluid motor. They provide control of spool position and metered fluid flow in applications that don't require the high levels of accuracy, repeatability, or response possible with feedback-type proportional valves or servos.

The DMV is designed to fill the performance gap between conventional mobile valves and industrial operated directional valves. It provides LS and PO check capability that is not otherwise provided in the smaller package that KDG4V-3 provides.

The DMV Valve is intended as a mobile, sectional directional control valve solution. It can be stacked in groups of up to 6 working sections with an inlet module. Auxiliary manifold blocks can be included in the stack as circuit needs arise, and the valve sections can be increased to larger more complex manifold blocks to provide the directional control requirements in larger systems.

Features and Benefits

- Provides KDG4V-3 performance in a mobile package with load sense and PO check capability for Closed and Open circuit solutions.
- Provides proportional and ON/OFF functionality in a mobile sectional package.
- Sustained high machine productivity and uptime result from the proven fatigue life and endurance of reliable KDG4V products.
- Flexible design approach provides optimum performance. A wide variety of valve options, and spool ratings allows the system designer flexibility in meeting application requirements.
- The fully encapsulated solenoid coils are impervious to common industrial fluids. Coils can be removed and replaced quickly and easily without breaking into the hydraulic envelope.
- Working sections are NFPA fatigue rated at 300 bar (4350 psi) for improved reliability and performance
- Configurable building blocks for system flexibility, inlet modules, working section modules, section relief modules.
- Add features to sections to create perfect solution. Service line reliefs, load sensing checks, pilot operated checks, and inlet pressure compensation cartridge valves.
- Ability to provide various voltage control and connection options. IP65/67 coils ratings, dependent upon connection.
- The ON/OFF soft shift feature provides smoother control of actuator acceleration and deceleration than is possible with conventional solenoid valves. The result is minimum hydraulic shock, more reliable systems with longer component life and less downtime.

General Information

Typical Applications

This type of valve is used in mobile “line-of-sight” applications where speed and position are controlled by an operator. Some examples are aerial work platforms, excavators, tractors, material handling equipment, backhoes, or telehandlers.

Commonly used electrical input devices include joystick controllers, proportional push buttons, potentiometers, power plugs, and amplifier cards. Input devices that operate on the principle of direct voltage rather than current control will require the appropriate coil type (GP or HA).

Meter-in and Meter-out

System requirements must be clearly understood and taken into consideration when selecting a valve spool. DMV typically uses Metered-in and Meter-out (“N” option) since PO checks are available.

Meter-out configuration is typically used in applications with over center loads and/or requiring deceleration control. Meter-in spools have the metering notches positioned between the pressure port and the actuator port, creating a throttle in the hydraulic actuator’s inlet line. Meter-in spools are commonly used with hydrostat modules for pressure

compensation in applications that don’t have an overrunning load as well as in load sensing pump circuits.

Spools with both meter-in and meter-out flow characteristics should be specified in applications where load changes (resistive to overrunning or vice versa) will occur. They should also be selected when uncertain system dynamics prevent the selection of specific meter-in or meter-out spool types

Valve Spool Position

DMV is configured as spring centered with no solenoid energization.

NOTE

Due to silting, any sliding spool valve held shifted under pressure for long periods may stick and not spring return. It is recommended that such valves be cycled periodically to prevent this from occurring.

Flow Rates

The rate of flow through a proportional valve is dependent on spool position and valve pressure differential. Rated flow is an arbitrary term, dependent differential pressure. DMV inlets are available with differential cartridge valves that allow for differing differential parameters.

Recommended Fluids

Petroleum oils are recommended for use with the DMV valves. Fluorocarbon seals are standard and are suitable for use with phosphate ester type fluids or blends, water glycol, water-in-oil emulsion fluids, and petroleum oils. HWBF (95% water) is not recommended.

Electrical Signals

It is important to note that solenoid force and valve flow are proportional to current—not voltage. Therefore, for optimum performance, a *constant current electrical* signal should be used. This type of signal will help compensate for the drift that would otherwise occur when current flow causes solenoid temperature and resistance to increase.

Technical Data

Maximum operating pressures

Inlet - 250 bar (3625 psi)
Work Port - 300 Bar (4350 psi)
Tank Port – 25 Bar (363 psi)

Leakage @75 Bar

Internal spool - 32ml/min
Internal POC - 1ml/min

Flow

40 L/min rated @ 10 Bar
60 L/min dependent upon
Margin

Operating temp

Ambient -30° – 70°C (-22°-158°)
Fluid -20° to 82°C (-4° to 180°F)
Max Intermittent 105°C (221°F)

Fluid viscosity

16 – 54 cSt (75–250 SUS)

Fluid Cleanliness

Directional	19/17/14
Proportional	17/15/12

Performance

Hysteresis At $\Delta p = 5$ bar (72 psi)
..... <6% at rated flow

Reproducibility, valve-to-valve

Optimized by adjustment of deadband compensation, gain and ramp potentiometers on associated Danfoss or consumer controls.

Solenoid Specifications

Switching at rated voltage and 20°C (68°F)

G.....	30W
H.....	30W

Soft Shift at rated voltage and 20°C (68°F)

G.....	38W
H.....	38W

Proportional *maximum*

current @ 50°C (122°F) ambient

G	2.5A
H.....	1.25A

Control Range

G.....	750-1900 mA
H.....	375-950 mA

Electrical Protection

Type of protection, with electrical plugs correctly fitted IEC 144 Class IP65 or IP67. Dependent upon connector type.

Maximum Sections

6 in continuous stack
12 if using mid-inlet with stack on both sides

Valve Mounting

Bolt on brackets are provided at each end of the valve stack. Additionally, relief modules are also provided with M8x1.25-6H mounting holes tapped on the base.

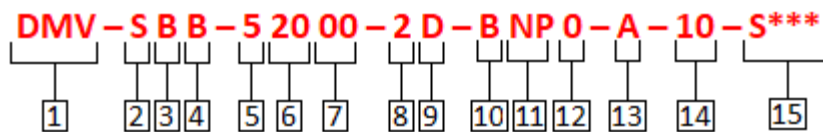
Service Port configurations

9/16" UNF SAE J514
3/8" BSPP
M16 Din3852
M16 ISO 6149 O-ring

Basic Dimensions

Section Width	48mm
Height	82mm
Length (Across Spool)	74mm
Length (Across Coils)	213 mm

DMV Inlet Model Code (866ANXXXXXA)



1 Valve Series

Directional Mobile Valve

2 Module

S - Standard Inlet

3 Inlet Type

B - Basic Inlet with P, LS & T port only – No relief valve

P - Inlet with P & T ports only - with Pilot Operated RV

U - Inlet with P & T ports only - With Pilot Operated RV + Solenoid Unload Function

C - Inlet with P, T & LS ports only - with Pressure Compensator Valve & LS Pilot RV

L - Load Sense Inlet with P, LS & T ports only - with LS Pilot RV

R - Steering Inlet - Load Sense with P, T, PX and 2 off LS ports only + LS Pilot RV + DS Shuttle Valve & Isolation Solenoid Valve

A - Steering Inlet - Hi Flow, Load Sense with P, T, PX & 2 off LS ports only + LS Pilot RV + DS Shuttle Valve & Isolation Solenoid Valve

4 Port types

B – 3/8" BSPP

M – Metric DIN 3852

S – UNF SAE O-ring

N – Metric ISO 6149

5 Relief Valves

0 – No Relief Cavity

P – RV Cavity Plugged

1 – RV1-10 (Direct Acting – 30 lpm)

5 – RV5-10 (Pilot Operated – 115 lpm)

6 – RV6-10 (Direct Acting – Pilot only – 15 lpm)

8 – IRV1-10 (Direct Acting Pilot Only)

6, 7 Relief Settings

00 – No Relief Valve

99 – Adjustable standard factory setting

6 ## - Inlet Main RV Settings in 100 psi increments (10 = 100 psi)

7 ## - LS RV or RV5 (Steering Relief) in 100 psi increments (10 = 100 psi)

8 Unload or Isolation Valve

0 – No Solenoid Valve

1 - 12VDC Dump Valve (NC)

2 - 24VDC Dump Valve (NC)

4 - 48VDC Dump Valve (NC)

7 – Steering 12VDC Isolation Valve (NC)

8 – Steering 24VDC Isolation Valve (NC)

9 - 24VDC Inverse Proportional Relief Valve (NC)

9 Connector Type

0 – No Solenoid Valve

D - Deutsch DT04-2P

A - Amp Jr Timer

M – Metripack

H – DIN 4400 Hirschmann

10 Pressure Compensator

0 – No Compensator

P – Compensator Plug Fitted

A – 11 Bar (160 psi) Comp.

B – 5.5 Bar (80 psi) Comp.

C – 20 Bar (290 psi) Comp.

11 Steering Priority Valve

NP – No Steering Priority. (check for availability)

12 LS Shuttles

0 – No Shuttle valve

B – Dynamic Shuttle 7.5 bar (109 psi)

C – Dynamic Shuttle 20 bar (290 psi)

13 Block Type

A – Aluminum (< 206 bar) w/ Anodized coating

S – Steel (> 206 bar)

w/ Trivalent zinc plating

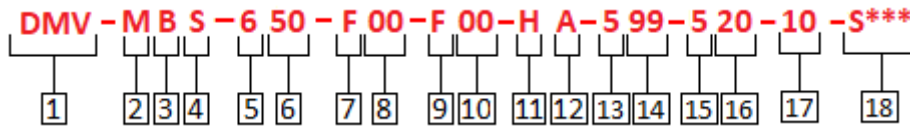
14 Design level

15 Special features

Blank – no special features

S*** – Contact for more details

DMV Mid-Inlet Model Code (866ANXXXXXA)



1 Valve Series

Directional Mobile Valve

2 Module

M - Mid- Inlet

3 Inlet Type

- A - Basic Pressure Compensated Mid Inlet with P, LS & T ports
- B - Basic Pressure Compensated Mid Inlet with P, LS & T ports plus Solenoid Valve Option to Float Face B (A and B ports)
- C - Pressure Comp Mid Inlet with P, LS & T ports plus Solenoid Valves to Float Face B (A and B ports) plus RV cavity for Face A (B port only)
- D- Pressure Comp Mid Inlet with P, LS & T ports plus Solenoid Valves to Float Face B (A and B ports) plus RV cavity for Face A (A and B ports)

4 Port types

- B – 3/8" BSPP
- M – Metric DIN 3852
- S – 9/16" UNF SAE O-ring
- N – Metric ISO 6149

5 Load Sense Relief Valve

- P – RV Cavity Plugged
- 1 – RV1-10 (Direct Acting)
- 5 – RV5-10 (Pilot Operated)
- 6 – RV6-10 (Direct Acting – Pilot only)

6 LS Relief Setting

- 00 – No relief
- XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)
- 99 – Adjustable standard factory setting

7 Float/Relief Valves – Port A (A-side Interface)

- 0 – No Valves
- 1 – RV1-10 (Direct Acting)
- 5 – RV5-10 (Pilot Operated)
- E – ERV1-10 (Electronic Proportional)
- F – Float 12VDC Solenoid (NC)
- S – SBV11-10 (ON/OFF Dump)

8 Relief Setting

- 00 – No relief
- XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)
- 99 – Adjustable standard factory setting

9 Float/Relief Valves – Port B (A-side Interface)

- 0 – No Valves
- 1 – RV1-10 (Direct Acting)
- 5 – RV5-10 (Pilot Operated)
- E – ERV1-10 (Electronic Proportional)
- F – Float 12VDC Solenoid (NC)
- S – SBV11-10 (ON/OFF Dump)

10 Relief Setting

- 00 – No relief
- XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)
- 99 – Adjustable standard factory setting

11 Float Valve Connector Type

- 0 – None
- D - Deutsch DT04-2P
- A - Amp Jr Timer
- M – Metripack
- H – DIN 4400 Hirschmann

12 Pressure Compensator

- 0 – No Compensator
- P – Compensator Plug Fitted

- A – 11 Bar Compensator
- B – 5.5 Bar Compensator
- C – 20 Bar Compensator

13 Port-A Reliefs (B-side Interface)

- 0 – No Relief Cavity
- 1 – RV1-10 (Direct Acting)
- 5 – RV5-10 (Pilot Operated)
- E – ERV1-10 (Electronic Proportional)
- S – SBV11-10 (ON/OFF Dump)

14 Relief Setting

- 00 – No relief
- XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)
- 99 – Adjustable standard factory setting

15 Port-B Reliefs (B-side Interface)

- 0 – No Relief Cavity
- 1 – RV1-10 (Direct Acting)
- 5 – RV5-10 (Pilot Operated)
- E – ERV1-10 (Electronic Proportional)
- S – SBV11-10 (ON/OFF Dump)

16 Relief Setting

- 00 – No relief
- XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)
- 99 – Adjustable standard factory setting

17 Design Level

18 Special features

- Blank – no special features
- S*** – Contact for more details

DMV Work & End Section Model Code (866ANXXXXXA)



1 Valve Series

Directional Mobile Valve

2 Sectional

W – Work Section*
E – End Section*

3 Section Type

- 1 - Standard Section
- 2 - Interface with A/B interconnection
- 3 - Dual Interface with single A/B interconnection for reverse orientation in valve stack
- 4 - Interface with enlarged P and A/B interconnections for Hi Flow Version (End Section ONLY)
- 5 - Dual Interface with No A/B ports for sealing against downstream block face

4 Port types

B – 3/8" BSPP
M – Metric DIN 3852
S – 9/16" UNF SAE O-ring
N – Metric ISO 6149

5 Load Sense Checks

0 – Load Sense Checks Omitted
L – Load Sense Checks Fitted
S – Load Sense Shuttle valve (use only with single section)

6 A-Port, 7 B-Port PO Checks

0 –PO Check Feature omitted
P –PO Check fitted
S –PO Check Spacing Plug fitted

8 Directional Valve Type

D – On/Off Control
K – Proportional Control

9 Voltage Type

G – 12VDC
H – 24VDC
OJ – 48VDC

10 Diode Type

N – No Diode (Standard with proportional)
D1 – Diode Pos Bias (industrial convention)
D2 – Diode Neg Bias (mobile convention)

11 Connector Type

D - Deutsch DT04-2P
A - Amp Jr Timer
M – Metripack
H – DIN 4400 Hirschmann
DL - Deutsch DT04-2P on leads
AL - Amp Jr Timer on leads
ML – Metripack on leads
FL – Flying lead w/ Deutsch pins

12 Spool Type (center position)

00 – Tandem center (open center, all ports)
02 – Closed center
06 – Float center (P Port close, A and B to T)
33 –P port closed, bleed A and B to T

13 Center condition

C – Sprint Centered
D – Detented
P – Hydraulic Pilot

14 Spool flow (lpm) @ 10 bar

00 – On/Off Spools only
13 – 13 lpm
19 – 19 lpm
20 – 20 lpm
27 – 27 lpm
30 – 30 lpm

15 Metering Type

0 – No notches, on/off spool types
N – Meter-in, Meter-out (standard)
A – Meter-in only (check availability)
S – Meter-out only (check availability)

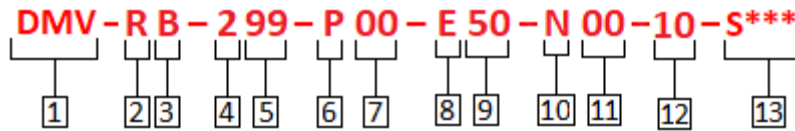
16 Design Level

17 Special Features

Blank – no special features
S*** – Contact for more details

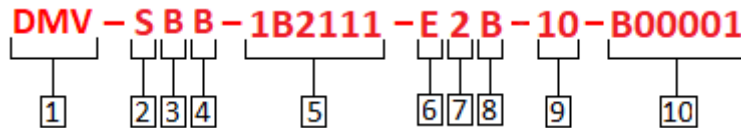
*** Coating black paint (96 hrs salt spray resistance)**

DMV Relief Module Mode Code (866ANXXXXXA)



<p>1 Valve Series Directional Mobile Valve</p>	<p>99 – Adjustable standard factory setting</p>	<p>0 – No Relief Cavity P – Cavity Plugged 1 – RV1-10 (Direct Acting) 2 – RV2-10 (Pilot Op RV with AC valve) 5 – RV5-10 (Pilot Operated) E – ERV1-10 (Electronic Proportional)</p>
<p>2 Module R – Relief Module</p>	<p>6 Face 1 B port Relief (top) 0 – No Relief Cavity P – Cavity Plugged 1 – RV1-10 (Direct Acting) 2 – RV2-10 (Pilot Op RV with AC valve) 5 – RV5-10 (Pilot Operated) E – ERV1-10 (Electronic Proportional)</p>	<p>11 Face 2 B port Relief Setting 00 – No relief XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi) 99 – Adjustable standard factory setting</p>
<p>3 Relief Module Type B - Basic Block with one RV cavity (Can be oriented for A port or B port operation) C - Block with two RV cavities (A and B ports for one face only - opposite face blank) D - Block with two RV cavities - A port on one face and B port on opposite face. E- Block with three cavities - A & B port face 1 and B port face 2 (Can be re-oriented to give A & B port face 2 and A port on face 1) F - Block with four cavities - A& B ports both faces</p>	<p>7 Face 1 B port Relief Setting 00 – No relief XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi) 99 – Adjustable standard factory setting</p>	<p>12 Design Level</p>
<p>4 Face 1 A port Relief (top) 0 – No Relief Cavity P – Cavity Plugged 1 – RV1-10 (Direct Acting) 2 – RV2-10 (Pilot Op RV with AC valve) 5 – RV5-10 (Pilot Operated) E – ERV1-10 (Electronic Proportional)</p>	<p>8 Face 2 A port Relief (bottom) 0 – No Relief Cavity P – Cavity Plugged 1 – RV1-10 (Direct Acting) 2 – RV2-10 (Pilot Op RV with AC valve) 5 – RV5-10 (Pilot Operated) E – ERV1-10 (Electronic Proportional)</p>	<p>13 Special features Blank – no special features S*** – Contact for more details</p>
<p>5 Face 1 A port Relief Setting 00 – No relief XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi)</p>	<p>9 Face 2 A port Relief Setting 00 – No relief XX– 100 psi (6.7 bar) increments (05 = 500 psi; 11 =1100 psi) 99 – Adjustable standard factory setting</p>	
	<p>10 Face 2 B port Relief (bottom)</p>	

DMV Bank Model Code w/ Standard or Priority Inlet (867ANXXXXXA)



1 Valve Series

Directional Mobile Valve

2 Inlet

S – Standard Inlet

3 Inlet Type

- B** - Basic Inlet with P, LS & T port only – No relief valve
- P** - Inlet with P & T ports only - with Pilot Operated RV
- U** - Inlet with P & T ports only - With Pilot Operated RV + Solenoid Unload Function
- C** - Inlet with P, T & LS ports only - with Pressure Compensator Valve & LS Pilot RV
- L** - Load Sense Inlet with P, LS & T ports only - with LS Pilot RV
- D** - Inlet with P, CF & LS ports only - With Dynamic Signal Priority Valve + Main Pressure relief and Steer relief Valves.
- S** - Inlet with P, CF & LS ports only - With Static Signal Priority Valve + Main Pressure relief and Steer relief Valves.
- R** - Load Sense Inlet with P, T, PX and 2 off LS ports only + LS Pilot RV + DS Shuttle Valve & Isolation Solenoid Valve
- A** - Hi Flow Load Sense Inlet with P, T, PX & 2 off LS ports only + LS Pilot RV + DS Shuttle Valve & Isolation Solenoid Valve

4 Port types

- B** – 3/8” BSPP
- M** – Metric DIN 3852
- S** – UNF SAE O-ring

N – Metric ISO 6149

5 Operating Sections

1 THRU 5 – Work Section Type
B THRU F – Relief Module Type
 One letter required per section/module, up to 6 sections only with no relief modules, including end section. With relief modules up to 12 total, including end section. Codes 1, 2, 3, 4, or 5 for work sections. Code B, C, D, E or F.

6 End Section

E– Standard End Section

7 End Section Type

- 1** - Standard Section
- 2** - Interface with A/B interconnection
- 4** - Interface with enlarged P and A/B interconnections for Hi Flow Version

8 Port types

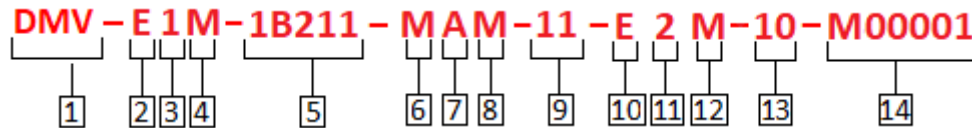
- B** – 3/8” BSPP
- M** – Metric DIN 3852
- S** – 9/16” UNF SAE O-ring
- N** – Metric ISO 6149

9 Design Level

10 Bank Part Number

BXXXXX – Last 5 numerical digits of Standard bank
RXXXXX – Last 5 numerical digits of Remote Mount Auto-guidance bank

DMV Bank Model Code w/ Mid-Inlet (867ANXXXXXA)



1 Valve Series
Directional Mobile Valve

2 First End Section

3 End Section Type
1 - Standard Section
2 - Interface with A/B interconnection
4 - Interface with enlarged P and A/B interconnections for Hi Flow Version

4 Port types
B – 3/8" BSPP
M – Metric DIN 3852
S – UNF SAE O-ring
N – Metric ISO 6149

5 Operating Sections
0 – No Intermediate Section
1 THRU 5 – Work Section Type
B THRU F – Relief Module Type
 One letter required per section/module, up to 6 sections only with no relief modules, including end section. With relief modules up to 12 total, including end section. Codes 1, 2, 3, 4, or 5 for work sections. Code B, C, D, E or F.

6 Module
M - Mid- Inlet

7 Mid-Inlet Type
A - Basic Pressure Compensated Mid Inlet with P, LS & T ports
B - Basic Pressure Compensated Mid Inlet with P, LS & T ports plus Solenoid Valve Option to Float Face B (A and B ports)
C - Pressure Comp Mid Inlet with P, LS & T ports plus Solenoid Valves to Float Face B (A and B ports) plus RV cavity for Face A (B port only)
D - Pressure Comp Mid Inlet with P, LS & T ports plus Solenoid Valves to Float Face B (A and B ports) plus RV cavity for Face A (A and B ports)

8 Port types
B – 3/8" BSPP
M – Metric DIN 3852
S – UNF SAE O-ring
N – Metric ISO 6149

9 Operating Sections
0 – No Intermediate Section
1 THRU 5 – Work Section Type

B THRU F – Relief Module Type
 One letter required per section/module, up to 6 sections only with no relief modules, including end section. With relief modules up to 12 total, including end section. Codes 1, 2, 3, 4, or 5 for work sections. Code B, C, D, E or F.

10 Last End Section

11 End Section Type
1 - Standard Section
2 - Interface with A/B interconnection
4 - Interface with enlarged P and A/B interconnections for Hi Flow Version

12 Port types
B – 3/8" BSPP
M – Metric DIN 3852
S – UNF SAE O-ring
N – Metric ISO 6149

13 Design Level

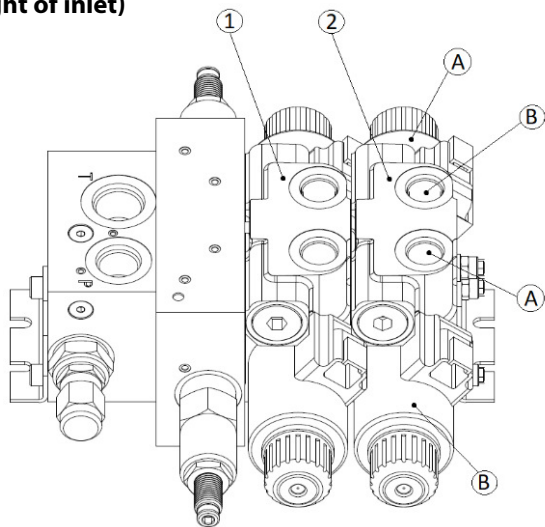
14 Bank Part Number
MXXXXX – Last 5 numerical digits of Mid-Inlet bank

DMV Valve Banks

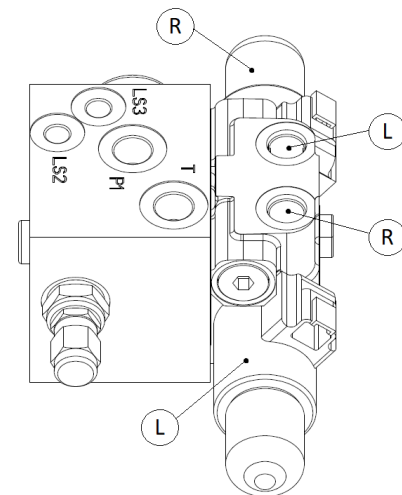
DMV Valve Banks

Valve banks are available in three configurations: Banks with Standard and Priority Inlets, Banks for Remote Autoguidance Steering (NOT available with steering unit interface, single section only), Banks with Mid-Inlets. Working/End sections are numbered from left to right as viewed with P-port closest to viewing direction, as shown below. A-ports are always designated by P-port side location regardless of section orientation, as indicated by mid-inlet bank. Coil actuation for designated ports is opposite port location, as shown.

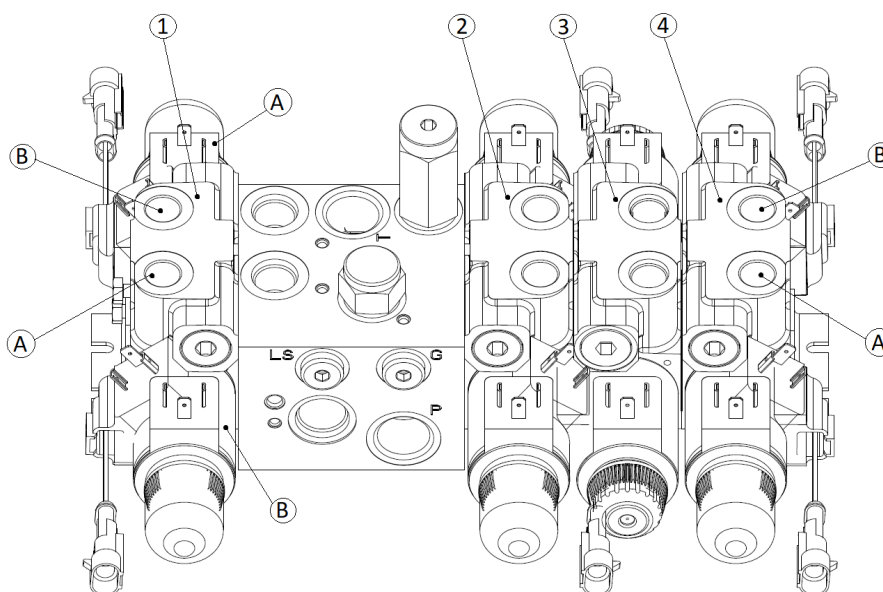
Standard Inlet Bank (Sections to right of inlet)



Remote Auto-guidance (Single Section)



Mid-Inlet Bank (Sections to either side of inlet, primary sections to right)

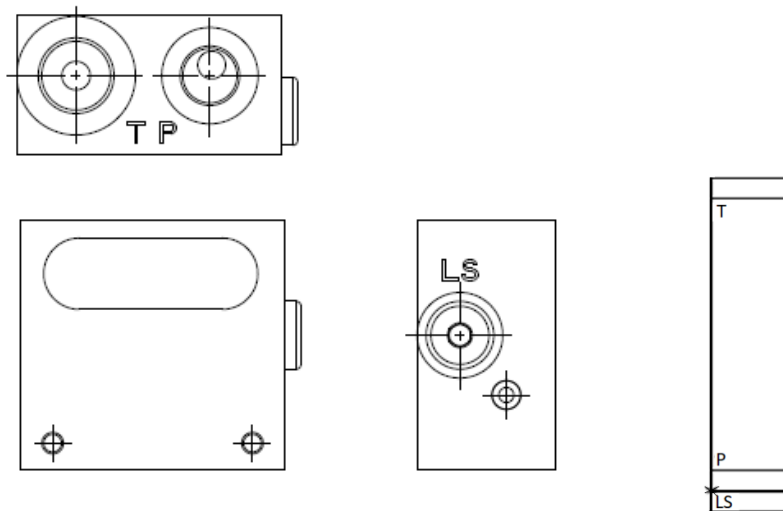


DMV-S Standard Inlet Modules

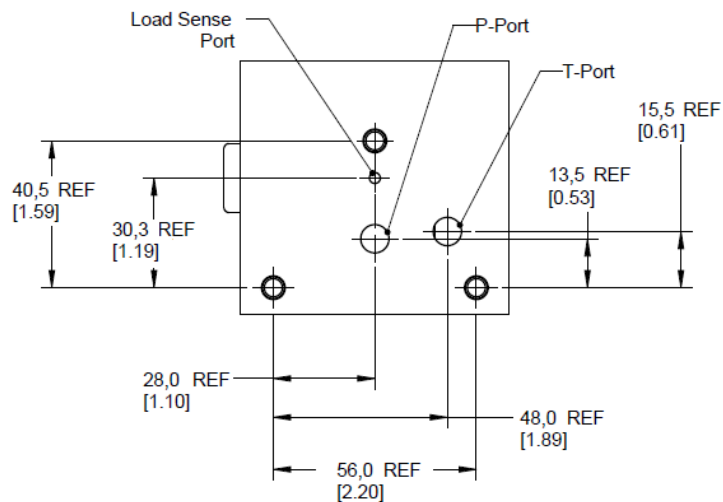
Generic basic inlet module with P, T and LS ports only (No DPS2, No relief, No unloader)

This module is used in Load Sense systems where the system pressure is controlled elsewhere in the hydraulic circuit. The load sense port allows the LS signal from this valve to be connected to other valves in the circuit thus allowing the DMV to be mounted remotely. Typical examples would be stabilizer controls on machines with more complex Load Sensing hydraulic valve systems. On non-LS systems it will be necessary to retain the plug fitted to the LS port.

(DMV-SB*-000-0000-*-10)



Basic inlet module interface



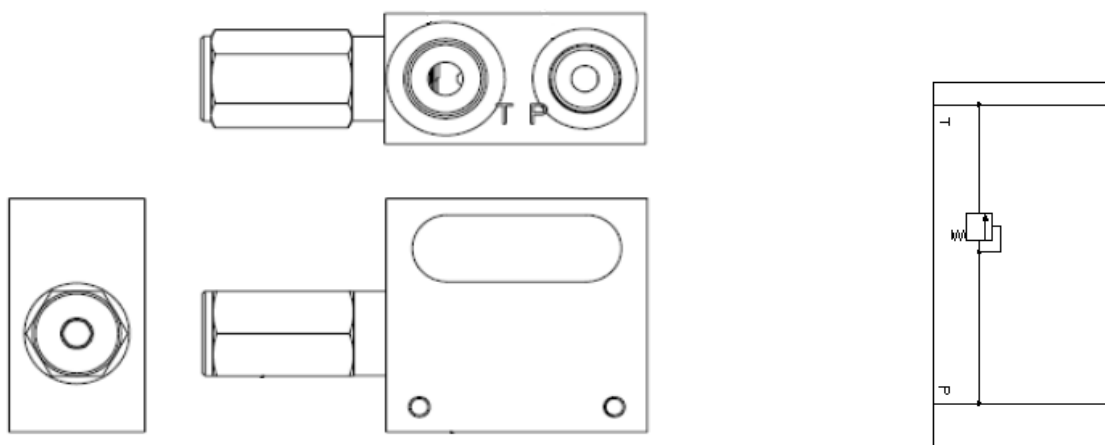
Generic inlet module with Pressure Relief valve and/or Solenoid Unloader – P and T ports only

This module is used with closed center circuits where a full flow pressure relief function is required in the P line. The normally open unloading valve is used to switch pump flow to tank in neutral. Std Solenoid is 12V DC.

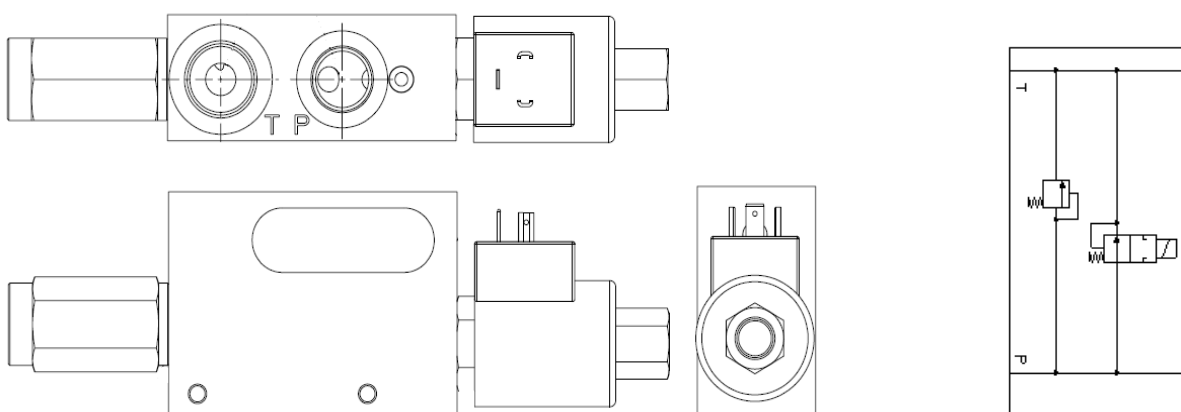
- Pressure relief valve setting range: 40 – 350 bar.
- Low pressure rise characteristic 0 – 80 l/min.

Example: *Module DMV-SP* have no solenoid, DMV-SU* have the solenoid fitted.*

(DMV-SP*-000-0000*-10)



(DMV-SU*-000-0000*-10)



Generic Inlet Module with Load Sense Pressure relief - / Inlet pressure compensator

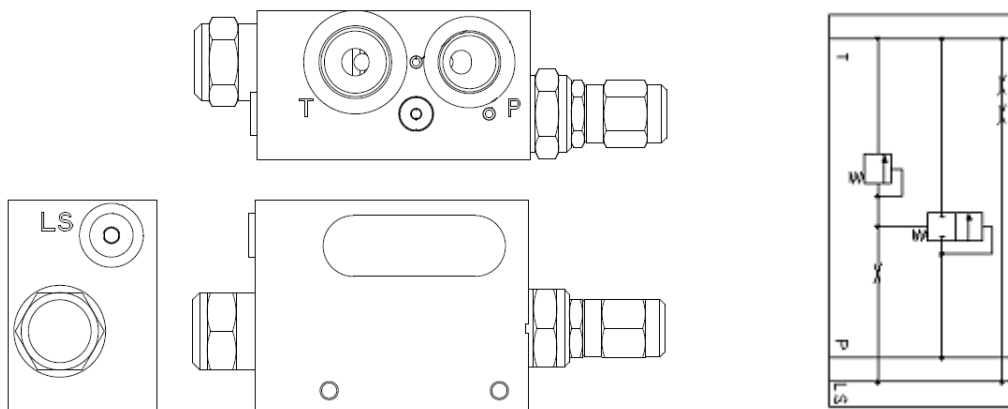
This module is used in Load Sensing systems where the DMV valve is used alone in the circuit. This inlet module can be used with fixed displacement pumps to give pressure compensated flow control, or also with LS circuits. A version without the bypass flow cartridge is also available for use with variable displacement Pumps.

All inlet blocks include decompression orifices for releasing the LS signal in the valve neutral position. The decompression orifices are two in series to give an equivalent .42 mm (.017") decompression orifice without the use of a screened single orifice.

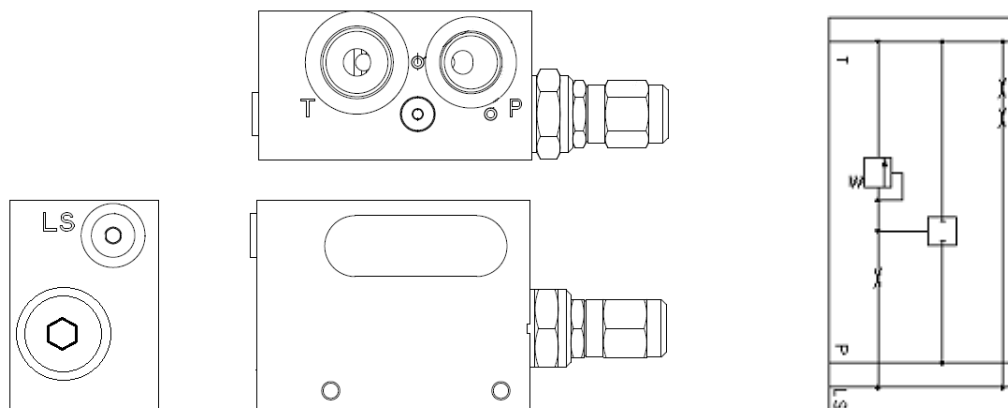
- Pressure setting range: 140 – 350 bar
- Compensator control pressure: 5.5, 11 or 20 bar

Example: Modules DMV-SC-600-B000-*-10 have the compensator and LS relief, Modules DMV-SL*-600-0000-*-10 have the compensator cavity plugged. For non-load sense systems, a plug must be fitted to the LS port.*

(DMV-SC*-600-000-B000-*-10)



(DMV-SL*-600-000-0000-*-10)



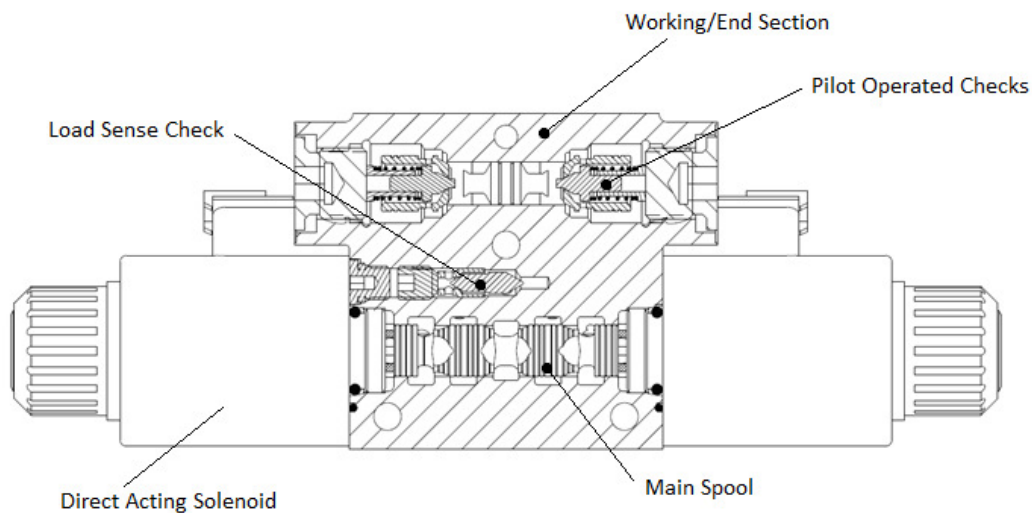
DMV-W/E Working and End Sections

Working and End Sections

These sections are the main working component of the DMV. Working sections are the intermediate functions and the end section is at the end of a bank. They can be configured with or without 10:1 PO checks and with or without LS functionality. Working and end sections utilize relief modules for port relief functions.

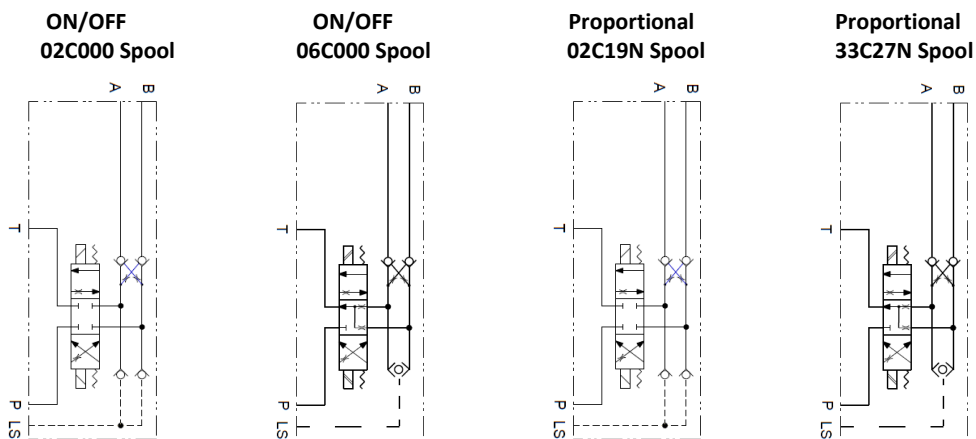
Flow ratings are in l/min @ 10 bar differential pressure drop across the metering lands P to A+B to T. The actual flow achieved at the work port is also a function of the inlet block and control margin selected.

Example: Typical Working/End section **DMV-W/E1B-LPS-K*ND-02C*N-11**



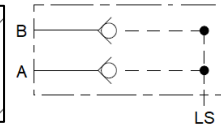
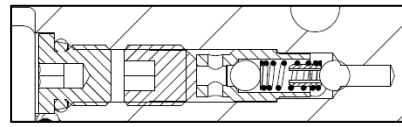
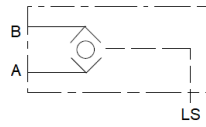
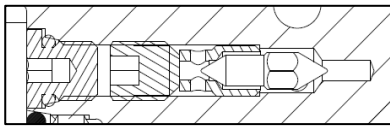
Spool Types

The working and end sections utilize the same DG4V-3 and KDG4V-3 spools. We can achieve the same or similar functionality and range of the DG/KDG family. If a specific spool type is needed, submit a request to your local distributor or sales coordinator.



Load Sense checks

Single and End sections get the unidirectional port check. Intermediate/multiple sections get dual LS check shuttle balls.

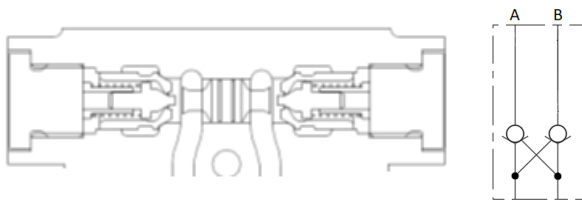


DMV-W/E-**-S**-* = LS check single sections only

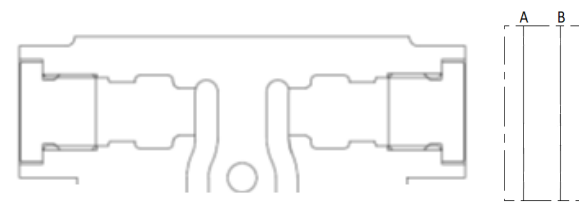
DMV-W/E-**-L**-* = LS shuttle for multiple section only

PO Check Options

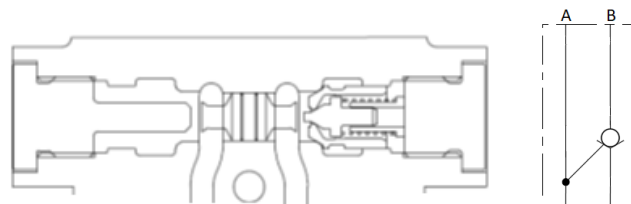
PO checks are available for both ports, one port and no PO check options.



DMV-W/E-**-PP**-* = PO check assembly fitted



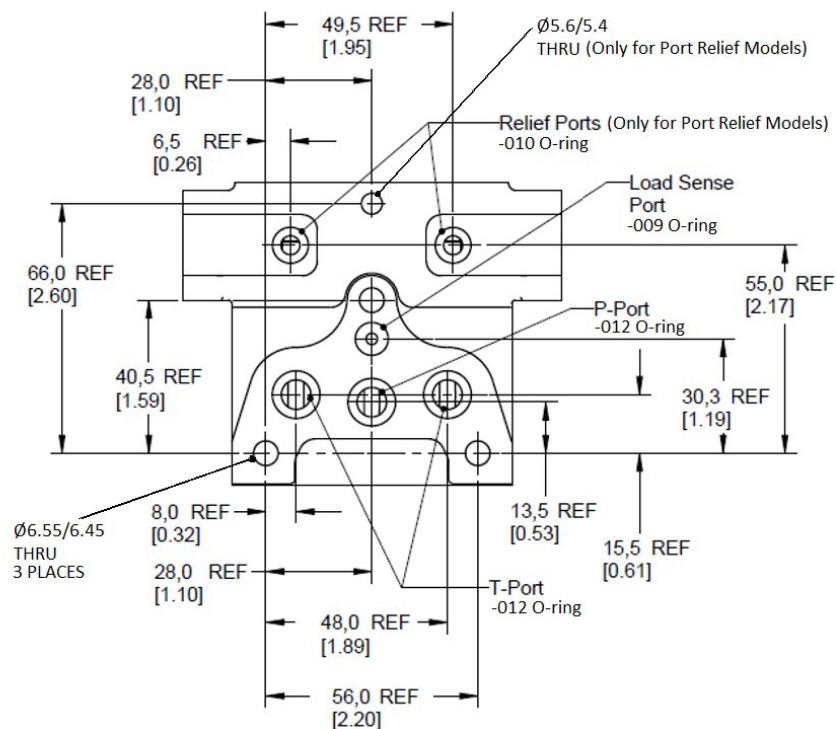
DMV-W/E-**-00**-* = PO check assembly omitted



DMV-W/E-**-0P**-* = Single PO check assembly fitted

Interface

Working and End section interface dimensions. Interface will depend on sectional features.



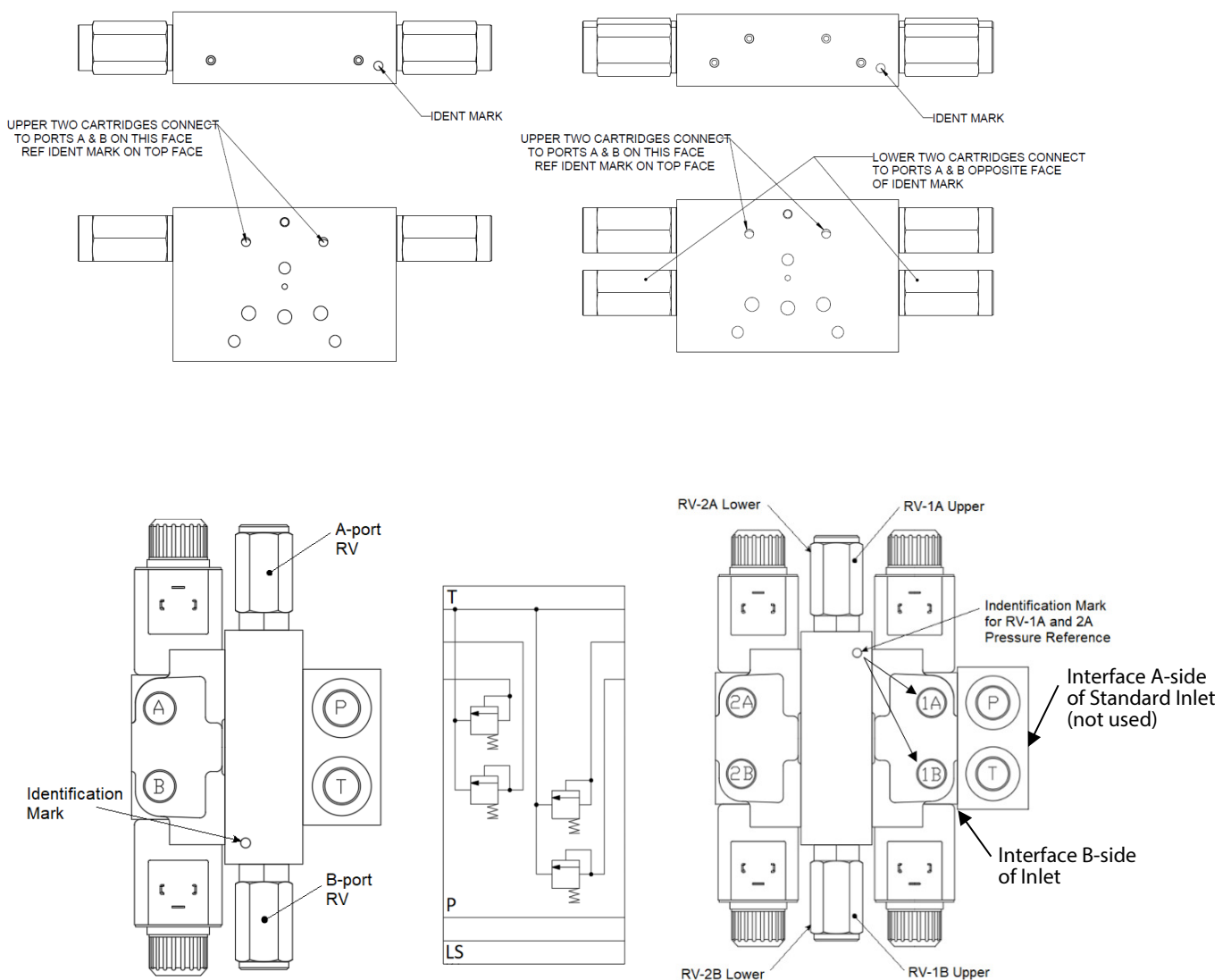
DMV-R Relief Modules

Relief Modules

Relief modules are inserted between working sections. One module can offer port reliefs to two working sections or one end section and one working section. Port reliefs can also be configured for single ports as well. Relief cartridge are of the Danfoss SiCV type, RV1-10, RV2-10, or RV5-10 and one Electro-Proportional Type ERV1-10. They can be either internally adjustable or externally adjustable. RV1s are direct-acting, RV2s are Pilot operated with Anti-cav, and RV5s are pilot operated.

Pressure settings are not factory set as std. If pre-set reliefs are required, please specify in the model code in 10 Bar increments.

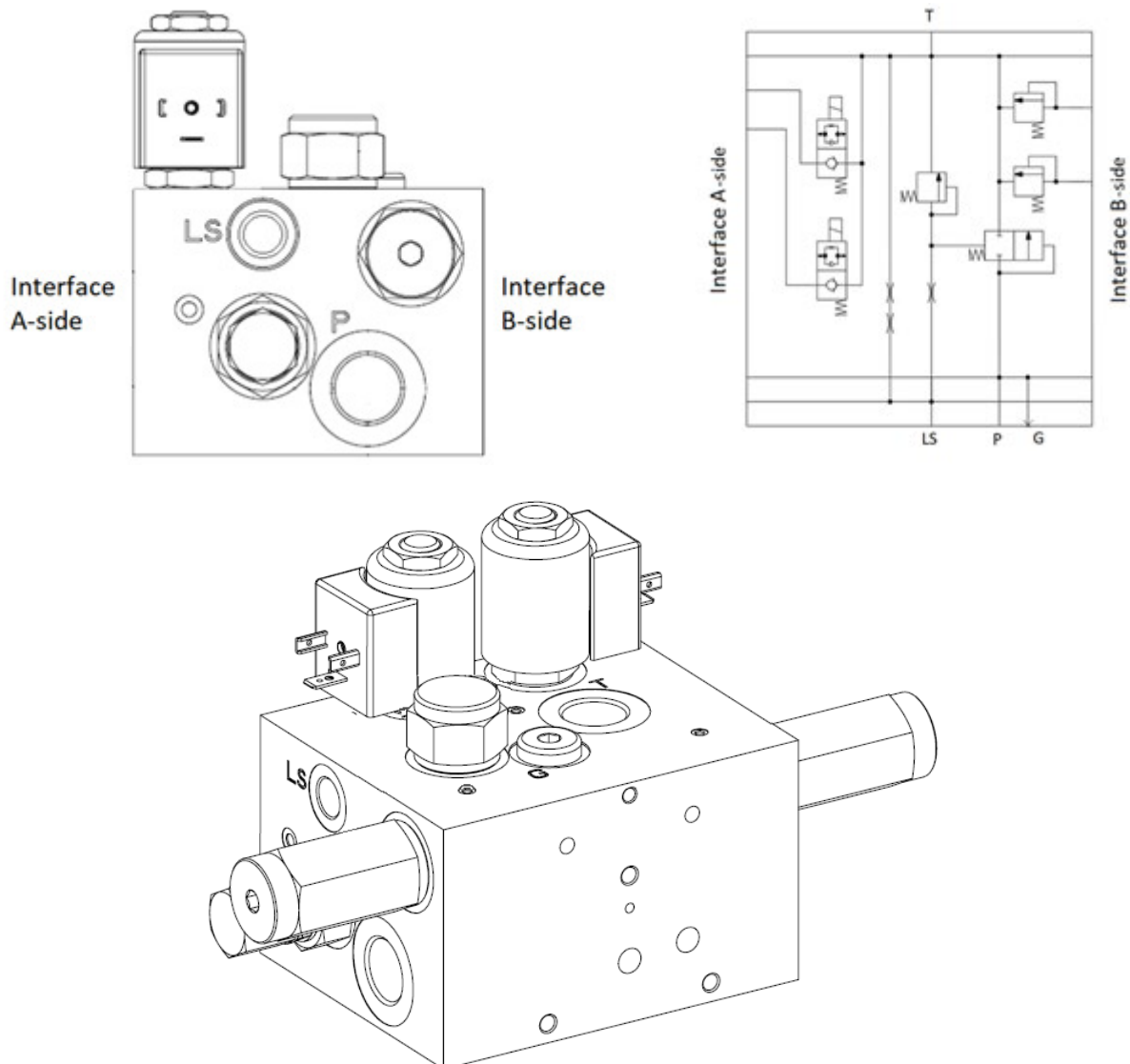
Reference mark is indicated as Face 1 in model code, Face 2 is opposite reference mark. Be aware that identification mark will be inverted when moved to interface A-side of Mid-Inlet banks.



DMV-M Mid-Inlet Modules

Mid-Inlet Modules

Mid-Inlet modules are inserted between two or more working *groups* of sections. Side A-interface is left of P-port and Side B-interface is right of P-port. Mid-Inlet modules can offer float option for A-side interface sections and port reliefs for B-side interface sections. Pressure compensator is available and port reliefs can also be configured for single ports on B-interface side as well. Relief cartridge are of the Danfoss SiCV type, RV1-10, RV5-10, or RV6-10. The total number of sections that can be mounted on a Min-Inlet is 6 on both sides (12 total) without intermediate relief modules, more with intermediate relief modules depending on configuration. Other options can be made available, please contact distributor or sales for more information. Sections are numbered from left to right as viewed from P-port, see page 6.



DMV Dimensions

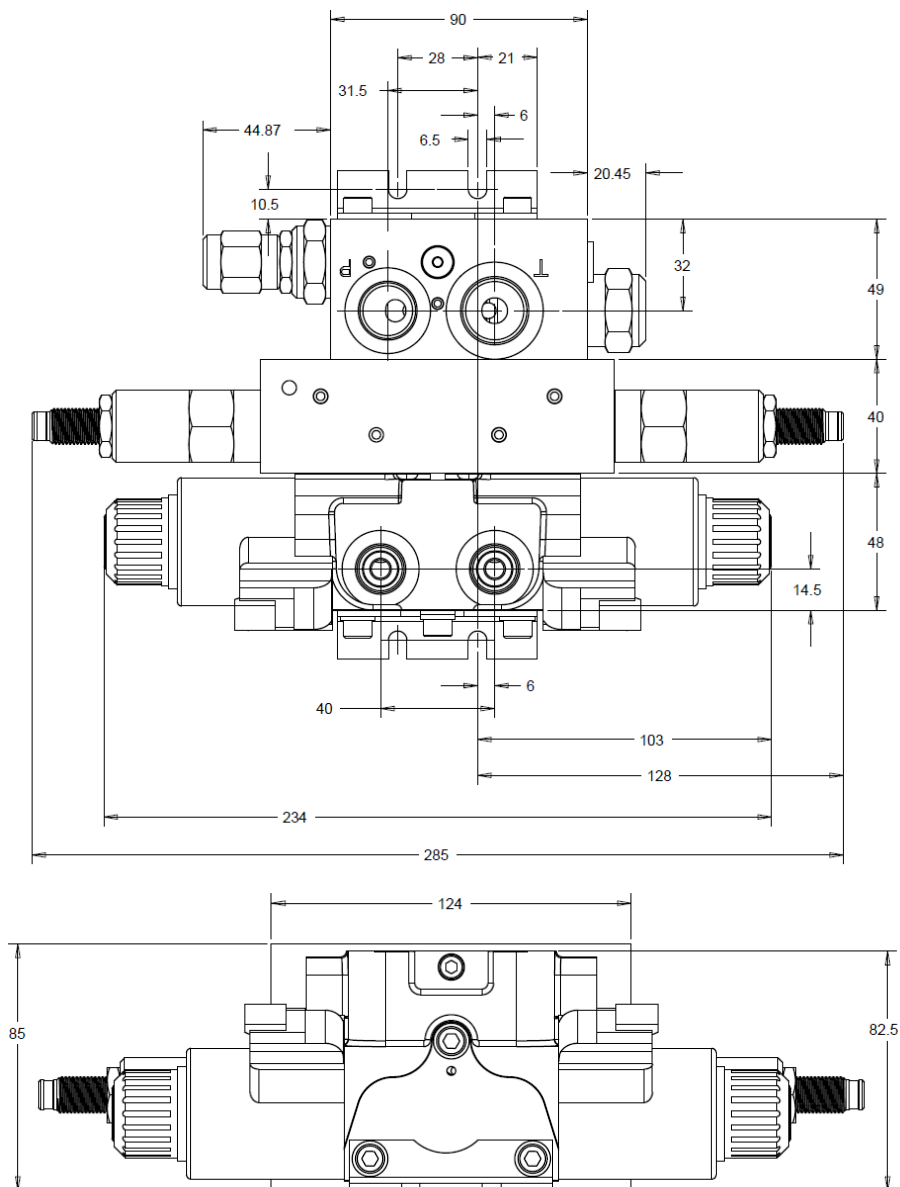
Standard Valve Bank Dimensions

Component	Width* mm (in)	Height** mm (in)
Standard Inlet Module	49 (1.93)	73 (2.87)
Working/End Section	234 (9.21)	82.5 (3.25)
Relief Module	285 (11.10)	85 (3.35)

* Width from features shown, will vary upon configuration.

** Height from bottom of bracket.

*** All dimensions are for reference.



Revision	Author	Information
2022/12	Robin Ireton	First version (draft)



WARNING

It is the responsibility of the customer to ensure that the inrush currents are address through use of Diodes per coil model code instructions.



WARNING

Some parameters in system configuration can significantly change the system response and even make a system non-functioning. It is customers responsibility to ensure a system is fully evaluated for safety and performance before implementing.



CAUTION

Section performance should be evaluated on the system, flows are for reference only and dependent upon margin settings.



CAUTION

These valves assembly components have not been evaluated for CSA or UL certifications.



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