

# TECNORD

## SERVOCOMANDI E REGOLAZIONE

### TDV 30 SERIES DIRECTIONAL PROPORTIONAL CONTROL VALVE SYSTEM

#### Stackable Directional Control Valve

- Size 6
- Load sensing pressure compensated
- Fixed or variable displacement configuration
- 1 to 8 working sections in the same valve bank

#### Electro-hydraulic controls

- **PMD** Multi-function/direct acting non feedback proportional solenoids
- **OMD** Multi-function/ON-OFF solenoids with individual adjustment of flow rate on A&B ports

#### Manual control options

- **LM** Manual control lever
- **MO** Push pin manual override

#### Principle of operation

The **TDV-PMD** is a closed center, load sensing, sectional valve with pressure compensation of each section assembly. Depending on the configuration of the inlet section, the TDV 30 valve system can be used with FIXED DISPLACEMENT pumps or with pressure/flow compensated load sensing VARIABLE DISPLACEMENT pumps.

When multiple functions are selected, the **TDV-30 valve** system will automatically resolve the highest function load pressure, which is then transmitted to the inlet unloader (by-pass pressure compensator) of a fixed displacement pump or to the pressure/flow compensator element of an automatic variable displacement pump.

**TDV-30** valve banks come with a system relief valve and with a drain orifice to ensure LS pressure drains once all spools are returned to neutral.

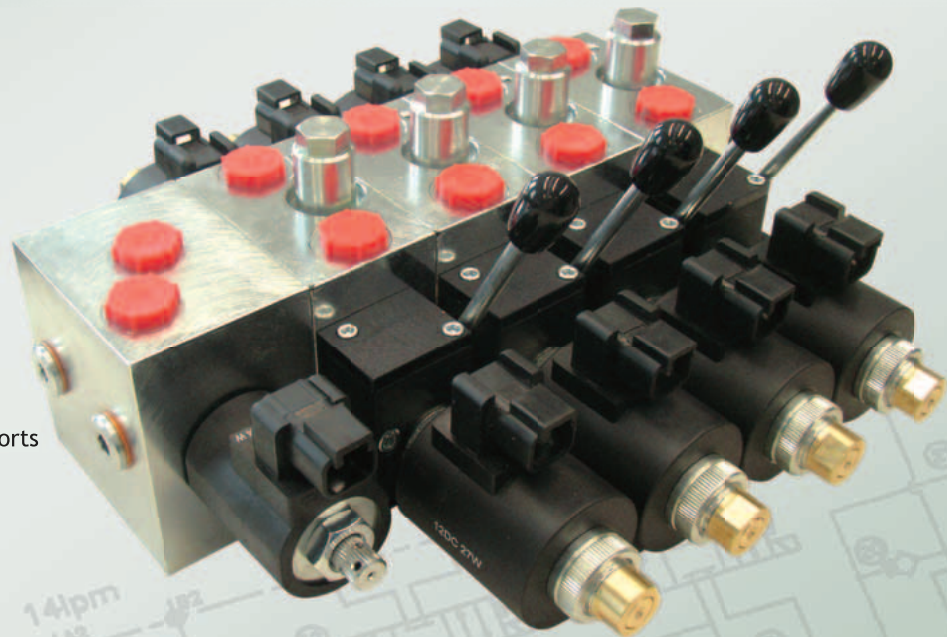
Work port pressure limiting is accomplished by using auxiliary anti-shock/anti-cavitation valves at each port.

#### Hydraulic Specifications

- |  |                               |
|--|-------------------------------|
| • Max. operating flow:                 | 50 lt/min                     |
| • Max. flow per section:               | 27 lt/min                     |
| • Max. work pressure:                  | 250 bar                       |
| • Inlet pressure compensator setting:  | 16 bar                        |
| • Max. back pressure at T port:        | 100 bar                       |
| • Max. static pressure at T port:      | 250 bar                       |
| • Typical internal leakage (per path): | 25 cu cm/min @ 100 bar        |
| • Media operating temperature range:   | -15°C/+105°C                  |
| • Max. contamination level:            | 19/16 (ISO 4406)              |
| • Fluid viscosity range:               | 20-480 cSt                    |
| • Seals:                               | Buna-N (Std.)<br>Viton (Opt.) |

#### Electrical Specifications

- |                              |   |
|------------------------------|---|
| • Nominal coil voltage:      | 12/24 VDC   |
| • Supply voltage tolerance:  | ±15% of nominal   |
| • Coil ohmic resistance:     | 5/20 Ohm  |
| • Max. control current:      | 900/1800 mA   |
| • C/current characteristic:  | PWM (Pulse With Modulated)  |
| • Optimum dither frequency:  | 100-150 Hz  |
| • Coil duty cycle:           | 100%  |
| • Ambient temperature range: | -15°C/+95°C   |
| • Env. protection class:     | IP 65   |
| • Coil termination:          | DT= deutsch DT 04<br>AJ= AMP Junior Timer<br>HC= DIN 43650 (Hirschmann) |



## Inlet section designation

**TDV 31 - IFCLG38 - C15R25 - E49 - 12VDT - NNN**

Inlet section

3 digits var.

**IFC=** with pump unloader valve for fixed displacement pumps

**IV0=** without pump unloader valve for variable displacement pumps

**LG38=** 3/8"-BSP

**C15=** 15 bar unloader valve setting

**C00=** no unloader valve

**R07=** 70 bar min. relief valve setting

**R25=** 250 bar max. relief valve setting

**0000=** w/o dump valve

**E49=** with dump valve

**12V=** 12VDC

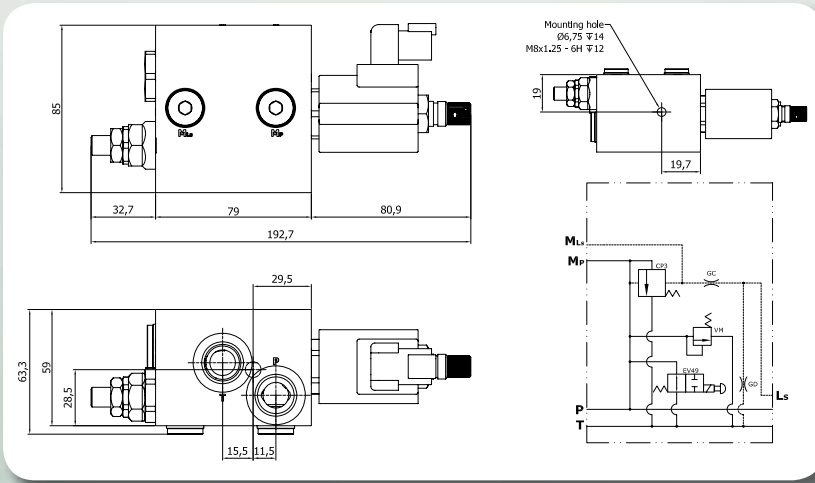
**24V=** 24VDC

**DT=** Deutsch connector

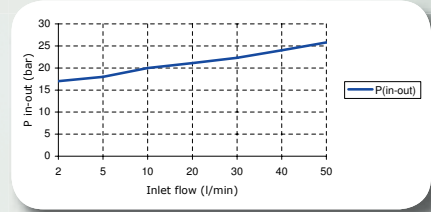
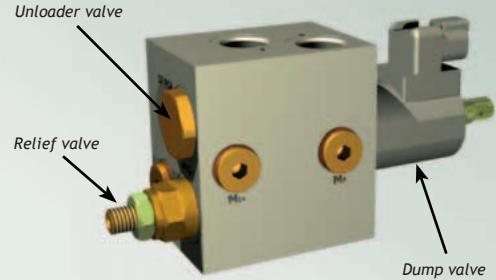
Unloader valve

Relief valve

Dump valve



IFC/IV0 inlet section



Inlet to outlet stand-by differential pressure (bar) vs. pump flow (l/min)

## Work section designation

**TDV 32 - PMDG38 - LM - A07B12 - Y30 - 12VDT - NNN**

Work section

3 digits var.

**PMD=** pressure compensated Proportional control

**OMD=** pressure compensated on-off control

**G3=** 3/8" BSP

**LM=** manual lever

**MO=** dual manual override

**00=** no ASC valve

**A07=** ASC valve on port A/ 70 bar

**B12=** ASC valve on port B/ 120 bar

**AB=** ASC valves on A&B

**X=** closed center spool

**Y=** motor spool

**K=** semi-motor spool

**S=** single effect spool

**08=** 0-12 l/min

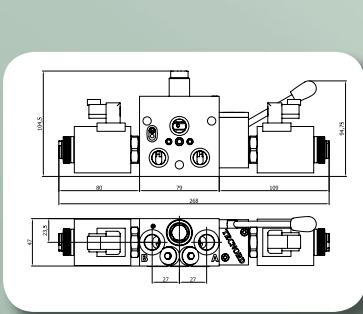
**16=** 0-18 l/min

**30=** 0-30 l/min

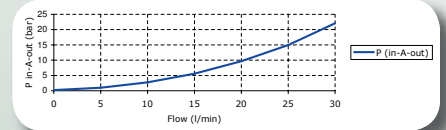
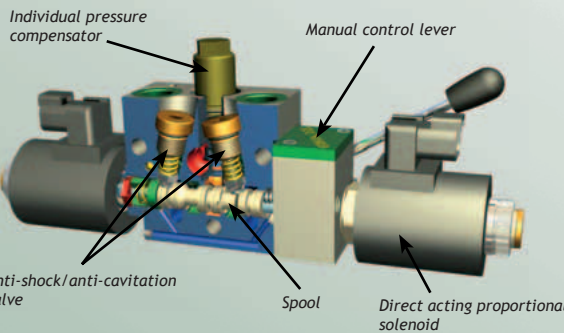
**12V=** 12VDC

**24V=** 24VDC

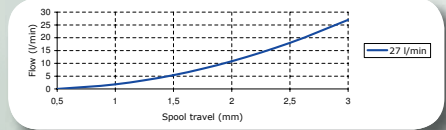
**DT=** Deutsch connector



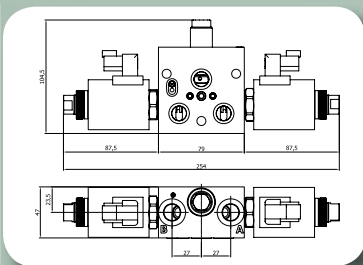
TDV 32 - PMD - LM - A07B12 - Y27 - 12DT



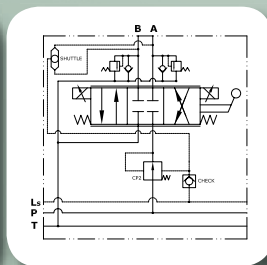
Work port flow (l/min) vs. spool travel (mm)



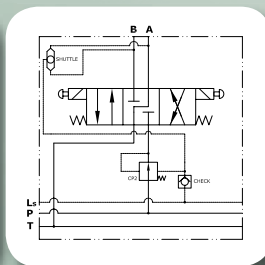
Inlet (P) to outlet (T) pressure drop (bar) @ full flow (l/min) through work ports A&B



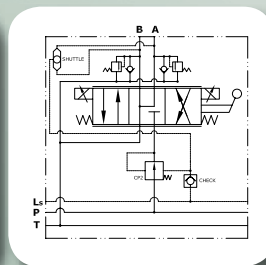
TDV 32 - PMD - MO - 00 - Y27 - 12DT



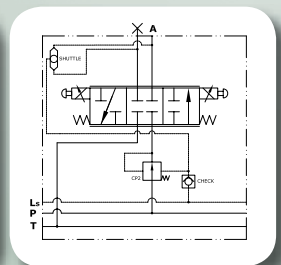
TDV 32-PMD-LM-A07B12-X27-12DT Proportional/Closed center spool/ASC valves



TDV 32-OMD-MO-00-K27-12DT On-off/Semi-motor spool/No aux. valves



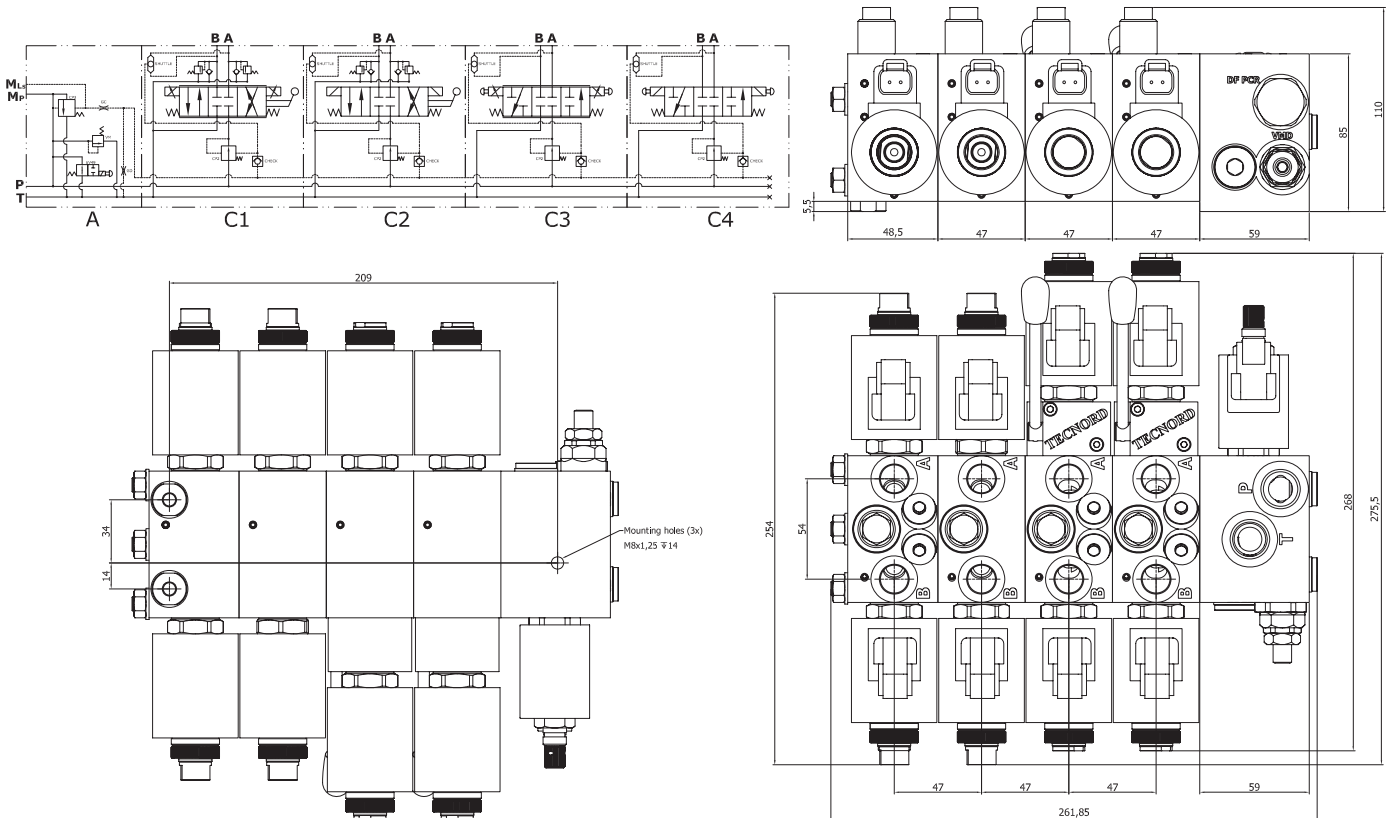
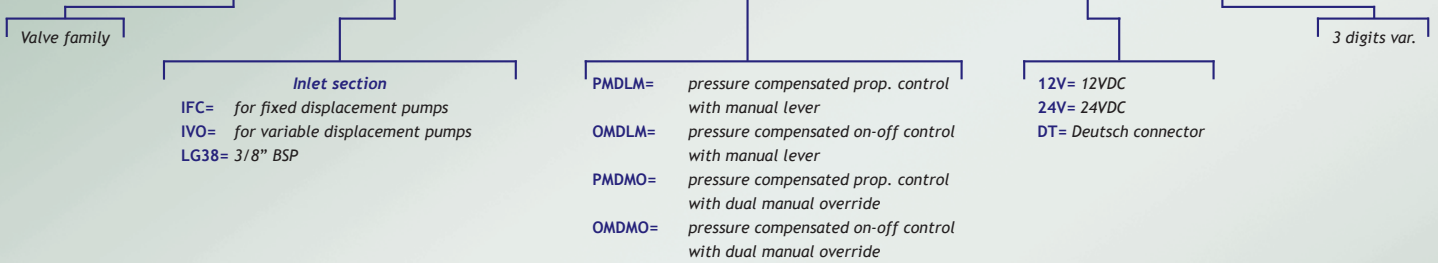
TDV 32-PMD-LM-A07B12-Y27-12DT Proportional/Motor spool/ASC valves



TDV 32-PMD-MO-00-S27-12DT Proportional/Motor spool/No aux. valves

## Stackable valve designation example (ordering code)

**TDV 30 - IFCLG38 - 1PMDLM/10MDLM/1PMDMO/10MDMO - 12VDT - NNN**



TDV 30 - IFCLG38 - 1PMDLM/10MDLM/1PMDMO/10MDMO - 12VDT

## Hydraulic and electrical characteristics of operating parts

Position	A	C1	C2	C3	C4
<b>Mnemonic code</b>	IFC / IVO	PMDLM	OMDLM	PMDMO	OMDMO
<b>Part description</b>	Inlet section	Spool section	Spool section	Spool section	Spool section
<b>Hydraulic configuration</b>	Fixed or variable displacement pump	Manual lever control X/Y/K/S spool proportional actuator	Manual lever control X/Y/K/S spool on-off actuator	Dual manual override X/Y/K/S spool proportional actuator	Dual manual override X/Y/K/S spool on-off actuator
<b>Typical flow rate</b>	50 l/min	8/16/30 l/min	8/16/30 l/min	8/16/30 l/min	8/16/30 l/min
<b>Max. work pressure</b>	280 bar	280 bar	280 bar	280 bar	280 bar
<b>Pressure compensator setting</b>	16 bar	14 bar	14 bar	14 bar	14 bar
<b>Port threads</b>	3/8" BSP 9/16"-18 UNF (SAE6)	3/8" BSP 9/16"-18 UNF (SAE6)	3/8" BSP 9/16"-18 UNF (SAE6)	3/8" BSP 9/16"-18 UNF (SAE6)	3/8" BSP 9/16"-18 UNF (SAE6)
<b>Number of sections in the assembly</b>	1	1-8	1-8	1-8	1-8
<b>Electrical configuration</b>	Electro-hydraulic	Proportional control	On-off control	Proportional control	On-off control
<b>Supply voltage</b>	12-24 VDC	//	12-24 VDC	//	12-24 VDC
<b>Max. current consumption</b>	2A @ 12VDC 1A @ 24VDC	//	2,4A @ 12VDC 1,2A @ 24VDC	//	2,4A @ 12VDC 1,2A @ 24VDC
<b>Ohmic resistance</b>	//	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)	5 Ohm (12VDC) 20 Ohm (24VDC)
<b>Typical control current range</b>	//	0-1,8A (12VDC) 0-0,9A (24VDC)	//	0-1,8A (12VDC) 0-0,9A (24VDC)	//
<b>PWM dither</b>	//	100-150Hz	//	100-150Hz	//