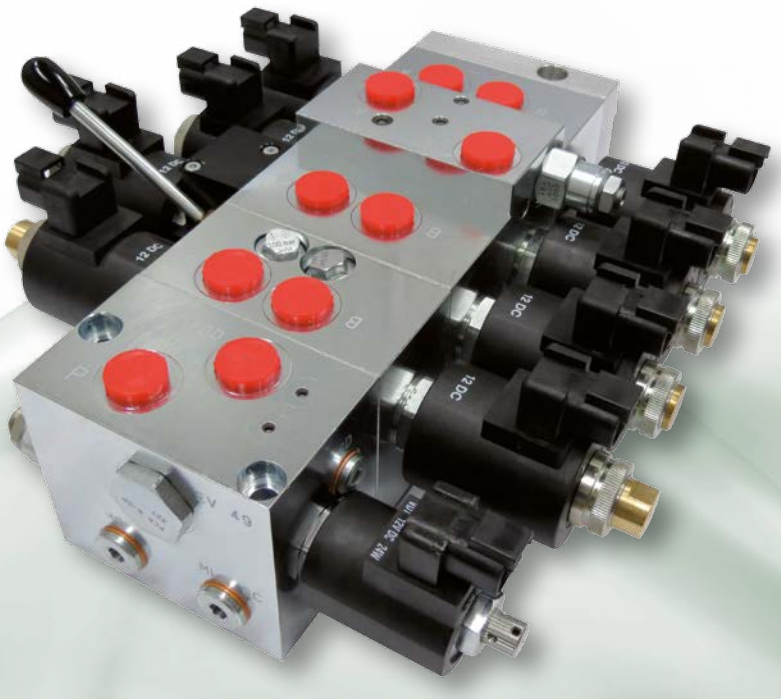
a Delta Power Company

# 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. Over-center valve option is available on one port.

### HYDRAULIC SPECIFICATIONS

- Max. operating flow ..... 50 lt/min
- Max. flow per section ..... 30 lt/min
- Max. work pressure ..... 250 bar
- Inlet pressure compensator setting ..... 16 bar
- Max. back pressure at T port ..... 50 bar
- Media operating temperature range ..... -15°C/+105°C
- Max. contamination level ..... 18/15/10 (ISO 4406)
- Fluid viscosity range ..... 20-480 cSt
- Seals ..... Buna-N (Std) / Viton (opt.)

### ELECTRICAL SPECIFICATIONS

- Nominal coil voltage ..... 12/24 VDC
- Supply voltage tolerance ..... ±15% of nominal
- Coil ohmic resistance ..... 3.9/15.6 Ohm
- Max. control current ..... 900/1800 mA
- C/current characteristic ..... PWM (Pulse With Modulated)
- Optimum dither frequency ..... 100-150 Hz
- Coil duty cycle ..... 100% ED
- Ambient temperature range ..... -15°C/+90°C
- Env. protection class ..... IP 65
- Coil termination ..... DT= deutsch DT 04-2P
  AJ= AMP Junior Timer
  HC= DIN 43650 (Hirschmann)

## INLET SECTION DESIGNATION

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

*Inlet section*

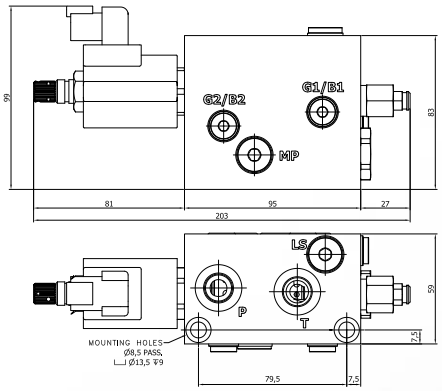
- **IFC** = *with pump unloader valve for fixed displacement pumps*
- **IV0** = *without pump unloader valve for variable displacement pumps*
- **LG38** = *3/8" BSP*

- **C15** = *15 bar unloader valve setting*
- **C00** = *no unloader valve*
- **R07** = *70 bar min. relief valve setting*
- **R25** = *250 bar max. relief valve setting*

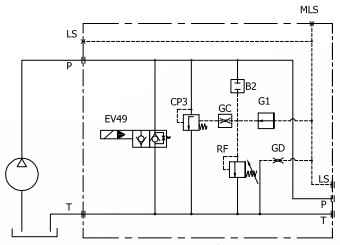
- **0000** = *w/o dump valve*
- **E49** = *with dump valve*

*3 digits var.*

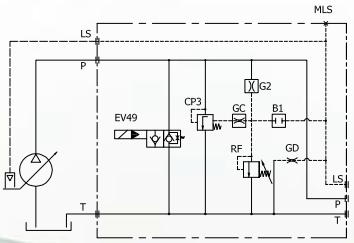
- **12V** = *12 VDC*
- **24V** = *24 VDC*
- **DT** = *Deutsch DT 04-2P*
- **JT** = *AMP Junior Timer*
- **HC** = *DIN 43650 (Hirschmann)*



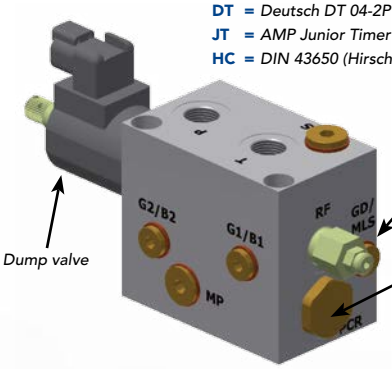

**IFC/IV0** inlet section

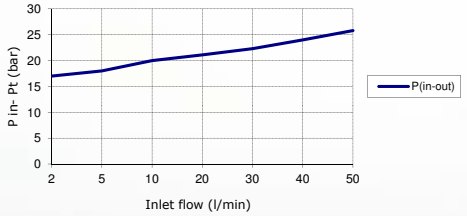



IFC




IVO




*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*

- **PMD** = *pressure compensed proportional control*
- **OMD** = *pressure compensed on-off control*
- **G38** = *3/8" BSP*

- **LM** = *manual lever*
- **MO** = *dual manual override*
- **00** = *no emergency*

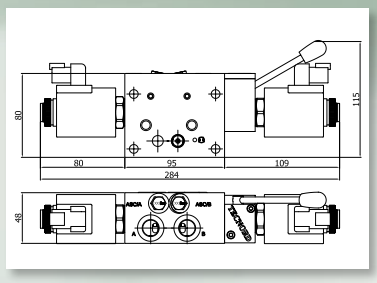
- **00** = *no ASC valve*
- **A07** = *ASC valve on port A/70 bar*
- **B12** = *ASC valve on port B/120 bar*
- **AB** = *ASC valves on A&B*

- **X** = *closed center spool*
- **Y** = *motor spool*
- **K** = *semi-motor spool*
- **S** = *single effect spool*

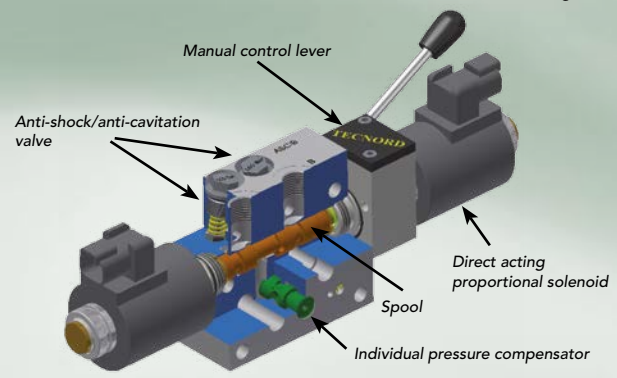
- **08** = *0-8 l/min*
- **16** = *0-16 l/min*
- **30** = *0-30 l/min*

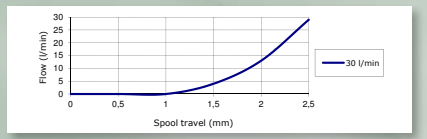
*3 digits var.*

- **12V** = *12 VDC*
- **24V** = *24 VDC*
- **DT** = *Deutsch DT 04-2P*
- **JT** = *AMP Junior Timer*
- **HC** = *DIN 43650 (Hirschmann)*

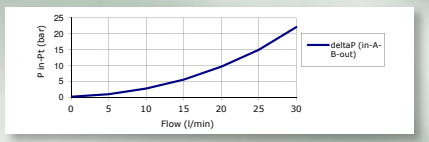


**TDV 32–PMD–LM–A07B12–Y30–12DT**

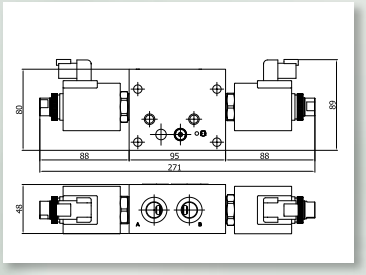


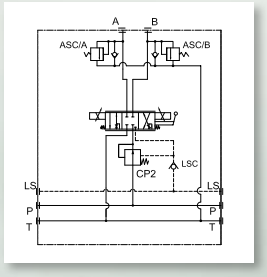

**Work port flow (l/min) vs. spool travel (mm)**



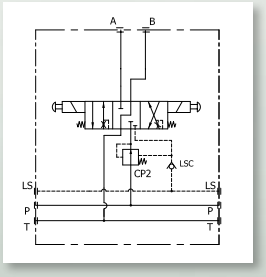

**Inlet (P) to outlet (T) overall pressure drop (bar) @ full flow (l/min) through work ports A&B**



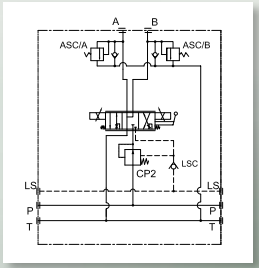
**TDV 32–PMD–MO–00–Y30–12D**



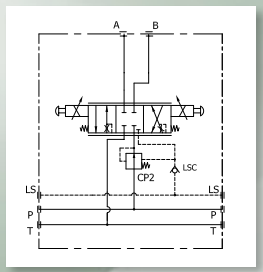

**TDV 32–PMD–LM–A07B12–X30–12DT**
Proportional/Closed center spool/ASC valves




**TDV 32–OMD–MO–00–K30–12DT**
On-off/Semi-motor spool/No aux. valves




**TDV 32–PMD–LM–A07B12–Y30–12DT**
Proportional/Motor spool/ASC valves




**TDV 32–PMD–MO–00–S30–12DT**
Proportional/Motor spool/No aux. valves

## SPOOL SECTION DESIGNATION

**TDV 30 - IFCLG38 - 1PMDLM/1OMDLM/1PMDMO/1OMDMO - 12VDT - NNN**

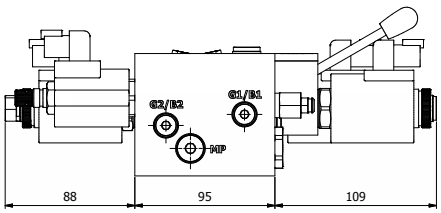
*Valve family*

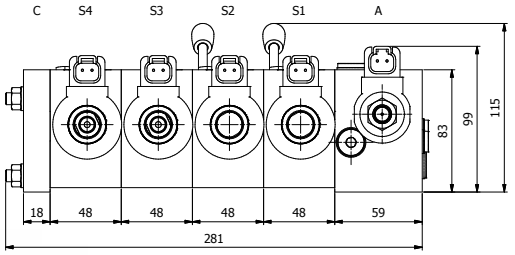
***Inlet section***
- **IFC** = *for fixed displacement pumps*
- **IVO** = *for variable displacement pumps*
- **LG38** = *3/8" BSP*

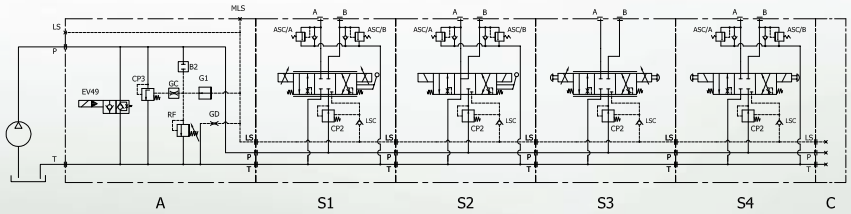
- **PMDLM** = *pressure compensated prop. control with manual lever*
- **OMDLM** = *pressure compensated on-off control with manual lever*
- **PMDMO** = *pressure compensated prop. control with dual manual override*
- **OMDMO** = *pressure compensated on-off control with dual manual override*

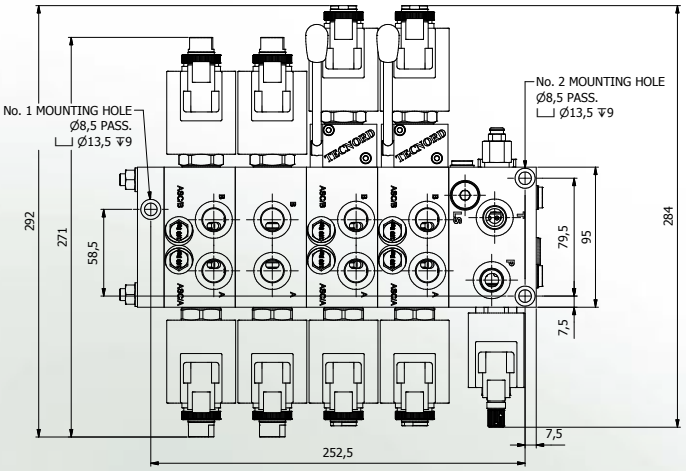
- **12V** = *12 VDC*
- **24V** = *24 VDC*
- **DT** = *Deutsch DT 04-2P*
- **JT** = *AMP Junior Timer*
- **HC** = *DIN 43650 (Hirschmann)*

*3 digits var.*




### Hydraulic and electrical characteristics of operating parts

| Position | A | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|
| **Mnemonic code** | IFC / IVO | PMDLM | OMDLM | PMDMO | OMDMO |
| **Part description** | Inlet section | Spool section | Spool section | Spool section | Spool section |
| **Hydraulic configuration** | 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 |
| **Typical flow rate** | 50 l/min | 8/16/30 l/min | 8/16/30 l/min | 8/16/30 l/min | 8/16/30 l/min |
| **Max. work pressure** | 250 bar | 250 bar | 250 bar | 250 bar | 250 bar |
| **Pressure compensator setting** | 16 bar | 14 bar | 14 bar | 14 bar | 14 bar |
| **Port threads** | 3/8" BSP | 3/8" BSP | 3/8" BSP | 3/8" BSP | 3/8" BSP |
| | 9/16"-18 UNF (SAE6) | 9/16"-18 UNF (SAE6) | 9/16"-18 UNF (SAE6) | 9/16"-18 UNF (SAE6) | 9/16"-18 UNF (SAE6) |
| **Number of sections in the assembly** | 1 | 1-8 | 1-8 | 1-8 | 1-8 |
| **Electrical configuration** | Electro-hydraulic | Proportional control | On-off control | Proportional control | On-off control |
| **Supply voltage** | 12-24 VDC | 12-24 VDC | 12-24 VDC | 12-24 VDC | 12-24 VDC |
| **Max. current consumption** | 2 A @ 12 VDC<br>1 A @ 24 VDC | 1.8 A @ 12 VDC<br>0.9 A @ 24 VDC | 3.5 A @ 12 VDC<br>1.8 A @ 24 VDC | 1.8 A @ 12 VDC<br>0.9 A @ 24 VDC | 3.5 A @ 12 VDC<br>1.8 A @ 24 VDC |
| **Ohmic resistance** | 5.9 Ohm (12 VDC)<br>23.6 Ohm (24 VDC) | 3.9 Ohm (12 VDC)<br>15.6 Ohm (24 VDC) | 3.9 Ohm (12 VDC)<br>15.6 Ohm (24 VDC) | 3.9 Ohm (12 VDC)<br>15.6 Ohm (24 VDC) | 3.9 Ohm (12 VDC)<br>15.6 Ohm (24 VDC) |
| **Typical control current range** | // | 0-1.8 A (12 VDC)<br>0-0.9 A (24 VDC) | // | 0-1.8 A (12 VDC)<br>0-0.9 A (24 VDC) | // |
| **PWM dither** | // | 100-150Hz | // | 100-150Hz | // |

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# TECNORD

## COMPREHENSIVE RANGE OF REMOTE CONTROL ELECTRONICS

### EC-PWM-A1-MPC1

Microprocessor – based PWM electronic drivers

### FINGERTIP PROPORTIONAL LEVERS

Potentiometric and hall effect single-axis control levers and roller switches

### ERGONOMIC GRIPS

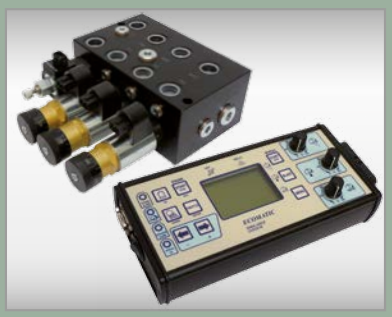
Multi-function ergonomic grips with on-off and proportional switches

### HEAVY DUTY JOYSTICKS

Potentiometric and hall effect multi-axes control joysticks

### EC MMS

Microprocessor-based Machine Management Systems for the integrated control of electro-hydraulic and safety functions



### ECOMATIC

GPS ground-speed oriented salt spreader control systems

### RC – DBR

Combined on-off and proportional radio control system with single hand wander

### RC – TRL

Multi-function proportional Radio Control with shoulder-strap Receiver with CANbus interface

### ARM-REST CONTROLLER

Arm-rest control unit for Hedge Cutter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