



Figure 1 – Modular valve drive *mtv/d\**

The *mtv/d\** valve drive together with a screw-in fluid body and an easy to fit valve seat make up a dispensing valve for metering a range of media from low viscosity fluids through to high viscous or paste-like media. Media feed and dispensing are hermetically isolated from the valve drive.

The main component of the modular valve drive is a piezo ceramic actuator. The movement of the actuator is transmitted to a rod which actuates the valve seat and opens or closes the integrated sealing seat to dispense the medium.

Parts in contact with medium which become contaminated or worn can be exchanged easily and quickly. The modular valve drive itself is largely maintenance and wear and tear free.

The valve drive is connected to the *mtv/ehm\** control electronics via a single cable with a 10-pole connector. Optional modules to control and supply additional local functions can be plugged in via a second 6-pole interface. The valve drive itself has an integrated heater for regulated tempering of the dispensing medium.

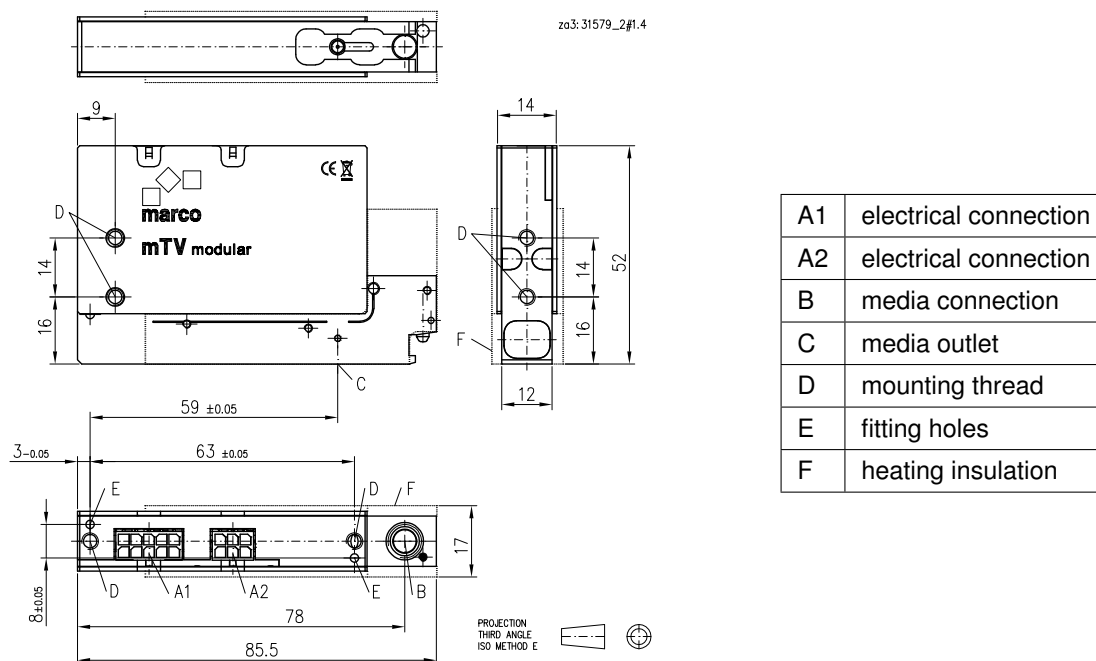
Specification	Modular valve drive			
	mtv/dsm/*	mtv/dsl/*	mtv/ddm/*	mtv/ddl/*
Dispensable liquids	Adhesives and adhesive components, liquid polymers and polymer solutions, solvents, lubricants such as oils and grease, dyes, aqueous solutions			
Viscosity range	1 - 1,000,000 mPas thixotrope		50 mPas - paste-like	
Admissible fillers in the liquid	Quartz powder, iron oxide, aluminium oxide, aluminium nitride, nickel, silver, glass, polymers and others. Dispensability limited by size and concentration			
Min. dispensing time for complete stroke (opening and closing) up to	0.20 ms	0.25 ms	0.16 ms	0.18 ms
Max. dispensing frequency with complete stroke up to	1,200 Hz	800 Hz	600 Hz	500 Hz
Max. dispensing frequency with burst operation up to	2,000 Hz	1,000 Hz	800 Hz	750 Hz
Typical service life	> 1,000,000,000 operating cycles			
Dispensing accuracy	better 99% (with non-varying conditions)			
Max. media supply pressure	up to 75 bar			
Ambient temperature	up to 45 °C			
Media temperature range	up to 75 °C (mtv/ddl/h: up to 180 °C)			

marco naming convention				
mtv/	dxy/	z	# *.*	Serial number
Product line	<b>d</b> = drive <b>x</b> = number of actuators <b>y</b> = actuator stroke	marking of version	release	individual ID no. for lifecycle log file (please quote for any enquiries)

### Example: *mtv/dsm/a*

- Modular valve drive with one actuator and medium stroke, type "a"  
(=modular technology valve / drive, single actuator, medium stroke / version a\*)

**Note:** Unique identification is only possible with the serial number.



Specification	Modular valve drive
Dimensions (l x w x h)	85.5 mm x 14 mm x 52 mm
Weight	<i>mtv/ds</i> * 178 g, <i>mtv/dd</i> * 183 g versions */b + 10g
Mounting	See figure 2: D = M4, 6 mm deep, torque 2.5 Nm E = alignment pin Ø2H7
Media feed	Variations in screw-in fluid bodies with Luer-Lock, hose connection ID4 – ID8 mm, M10x1, in stainless steel or plastic – others on request. Weight approx. 16 g. See data sheet <i>mtv/fb</i> *
Available valve seats	Variations in jet diameters 50 µm – 600 µm, contact-free dispensing and contact dispensing with dispensing needle. Weight approx. 9 g. See data sheet <i>mtv/vs</i> *
Electrical connection	A1: 10-pin connection to <i>mtv/ehm</i> /* driver box A2: 6-pin connection for optional add-on modules
optional connection extension cable	Variations in lengths from 1 m to 9 m, drag chain or torsion suitable see data sheet <i>mtv/ca</i> *
Protection class	IP54
Storage temperature	-10 °C to +85 °C
Control unit	Driver box <i>mtv/ehm</i> /*

## General information

The surface temperature of the valve drive must be kept under 60 °C to achieve the maximum performance data as quoted.

## Requirements for maintenance and cleaning

- In the case of *mtv/dd\**, the insertion of valve seats is only permitted when the operational position is set to "open"
- If a control unit is connected in the system, the operational position "closed" is maintained for several minutes after the power supply has been cut
- When cleaning or servicing, it must be ensured that no liquid enters the valve drive; immersion in solvent is not permitted
- The retaining pin is to be removed for cleaning or exchange of parts

## Service life and maintenance

When operated in accordance with our instructions, valve drives have no medium contact and do not become worn so do not require any maintenance.

If required, the mode of operation and mounting conditions must guarantee sufficient continuous heat dissipation. Overheating (excessive burst operation or external accumulation of heat), blockages or lack of care in operation can considerably reduce service life. A qualifying test carried out in actual dispensing process conditions is essential in determining service life expectancy.

**Most importantly, the qualifying test carried out under application conditions and in consultation with marco as manufacturer defines and approves the intended use.**

1.5 billion dispensing cycles per valve drive are typical - even in the case of continuous high speed operation.