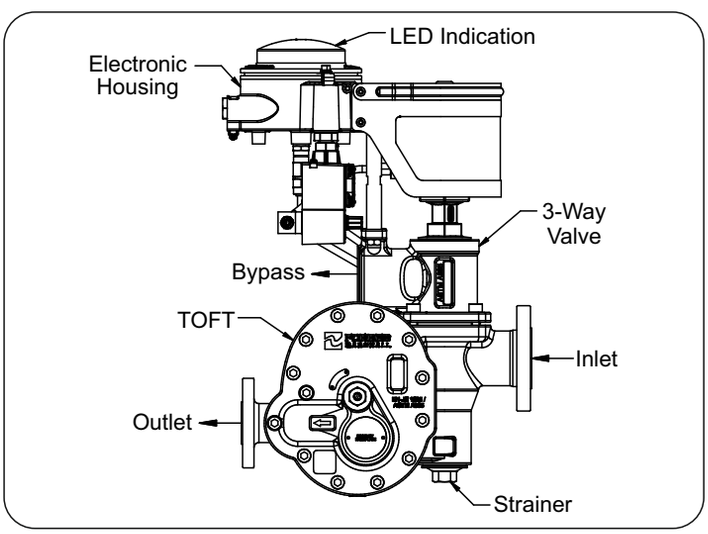
MuPT
Multi Utility Process Trap

Description:

Forbes Marshall Multi-utility Steam Trap – MuPT is an innovative solution for recovering pure condensate from multi-utility process equipment. MuPT prevents mixing of utilities (like: cooling tower water, chilled water) with condensate, improving the Condensate Recovery Factor and reducing or eliminating the load on effluent treatment plant and cooling tower. It features an inbuilt monitoring system that provides MuPT functioning status through local indication and is digitally enabled for cloud connectivity.



Product Features:

- Equipment level solution to detect and divert contaminated condensate.
- Twin orifice design for catering to warm up and running loads.
- Enhancing Condensate Recovery Factor by recovering pure condensate.
- Inbuilt Trap Monitoring System (Detect and Indicate the product performance status).
- Digital connectivity through MODBUS (RS485).

Sizes & End Connection:

Sizes	MuPT DN 25	MuPT DN 40	MuPT DN 50
Inlet (ANSI Class #150)	DN 25	DN 40	DN 50
Outlet (ANSI Class #150)	DN 20	DN 25	
Bypass (Screwed BSPT)	1"	1 ½"	2"

Limiting Conditions:

PMA - Maximum allowable pressure	8 bar g
TMA - Maximum allowable temperature	176°C
PMO- Maximum Operating Pressure	8 bar g
TMO - Maximum Operating Temperature	176°C
Minimum allowable temperature	0°C
Hydrostatic Test Pressure	12 bar g
Maximum Differential Pressure △PMX	4.5 bar g
	8 bar g

Product Specifications:

Parameter	Description
Power Supply Input	24V DC ± 10% @ 4.5 A
Diversion Unit Configuration	Normally Open to Bypass
Pilot Solenoid for Diversion Unit Actuation	Pneumatic 3/2 Way Solenoid Valve 24V DC - ON when the MuPT is in the trapping mode - OFF when the MuPT is in the bypass mode
Pilot Media	Clean, Dry, Oil-free instrument air only
Max. Pilot Media Temperature	60°C
Min. & Max. Pilot Pressure	For DN 25 – 1.5 to 10 bar g For DN 40/50 – 2.2 to 7 bar g
Sensor 1 & 2	PT1000 embedded with a conductivity sensor
Communication	MODBUS RS485
Conductivity Measurement Range	10 ~ 300 ppm
Important: Customer - End Installation Prerequisites	**1. Power Supply** - 24V DC, 4.5A (Recommended Make:Mean Well) - 1.0 - 2.5 sq.mm, 2 Core, Shielded Cable, Cable Diameter - 6 to 12mm **2. Cooling Process Signal Connection** - Potential Free Contact, Close during Cooling signal - 0.5 sq.mm, 2 Core, Cable Diameter - 6 to 12mm **3. Modbus In & Out Connection** - 0.5 sq.mm, 2 Core Shielded Twisted Pair with AWG 24, 7*32, Cable Diameter - 3 TO 6.5mm **4. Pit / Instrumental Earth** - Resistance - ≤ 1Ω, Voltage - ≤ 2V AC **5. Air Supply** - 3 to 7 bar g

Ambient Conditions :

Operating temperature (Electronics)	0 to 70 °C
Storage Temperature	0 to 70 °C
Humidity	95% RH

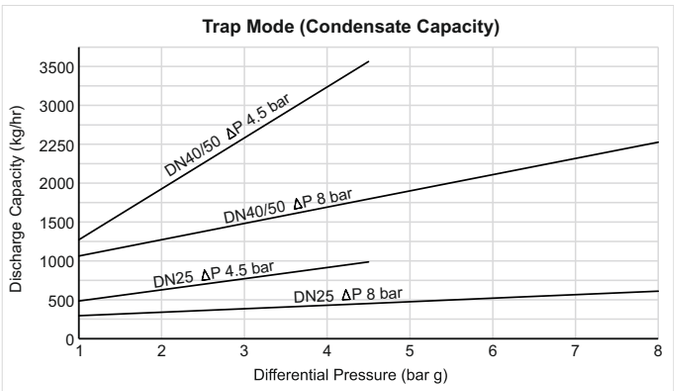
Indications:

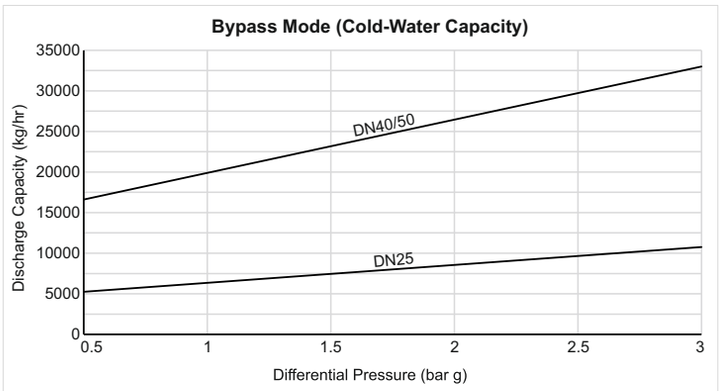
Indications (LED)	Trap Mode	Green
	Bypass Mode	Yellow
	Steam Leak	Red
	Waterlog / Process Off	Blue
	Error	Cyan

Product Approvals:	
Ingress protection	IP66 IEC 60529
EMI/EMC	IEC 61326-1
Environmental	60068 series

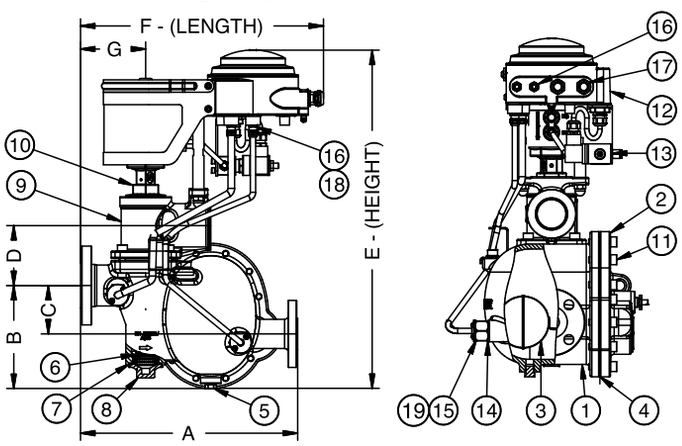
Vibration	10Hz to 500 Hz,1g
Emission	IEC 61326-1
Pressure Vessel	Non - IBR (Available with IBR certificate on request)

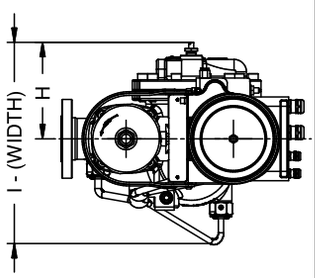
Capacity Chart:

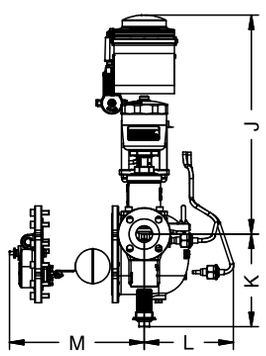




Dimensions and Weight (Approx.):







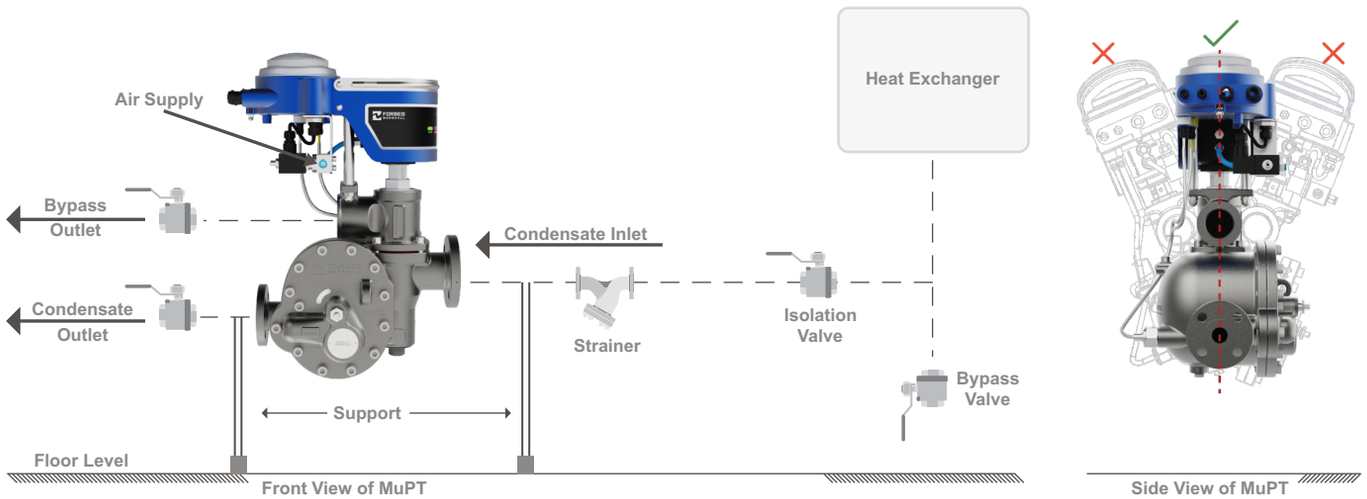
Maintenance Footprint

Size	Dimensions (mm)									Maintenance Footprint				Weight. (kg)
DN	A	B	C	D	E	F	G	H	I	J	K	L	M	
25	285	122	55	77	445	360	104	130	300	490	160	250	200	20
40/50	350	166	78	97	545	375	105	160	350	530	225	330	220	33

Materials :		
SN.	Description	Material
1	Cover	ASTM A395 / SG Iron
2	Base	ASTM A395 / SG Iron
3	Trap Mech. Sub-Assly	Stainless Steel, SS304
4	Cover Gasket	SS304, Exfoliated Graphite
5	Hex. Plug, 3/8" BSPT	#3000, A105N, Al-Zn
6	0.8 Mesh Str. Screen	ASTM A240, SS304
7	Strainer Gasket	SS304, Exfoliated Graphite
8	Strainer Cap	ASTM A216, Gr WCB
9	Bypass Manifold	ASTM A395 / SG Iron
10	Actuator Sub-Assly	Ref. Sub-Assly Drg.

Materials :		
SN.	Description	Material
11	Al. Bolt M10 X 35 / 30	ASTM A193, B7
12	Electronic Hsg Assly	BS1490, LM6/LM9/LM25
13	Solenoid Valve	1/4", 3/2, NC, 24V DC
14	Sensor Assly	Stainless Steel
15	Sensor Gasket	ASTM A240, SS304
16	M12x1.5, Gland (Cable 3-6.5 mm)	Polyamide
17	M20x1.5, Gland (Cable 6-12 mm)	Polyamide
18	M12x1.5 Ex-D, IIC, Hex Plug, IP66	Brass Nickel Plated
19	Hex. Plug, 3/8" BSP, AMSE B16.11	#3000, A105N

Installation Diagram:



The MuPT must be installed with the direction of flow as indicated on the body and as shown in above figure.

Available Spares :

SN.	Spare Details
1	Gasket Kit
2	Float Kit
3	Mechanism Kit
4	SLR Kit
5	Strainer Kit

SN.	Spare Details
6	Plug Seal & Seat Kit
7	Actuator Seal Kit
8	Actuator Piston Kit
9	Indicator Spare Kit
10	Actuator Spring Kit

SN.	Spare Details
11	Electronics Board Kit
12	Housing Lid Kit
13	Sensor 1 Kit
14	Sensor 2 Kit
15	Solenoid Kit

How to Order
Example: DN25 Multi-utility Process Trap, 4.5 bar g differential.

How to Order Spares
Always order spares by using description given in the column headed 'available spares' and state the size, type of trap and pressure range.
Example: 1 no. Mechanism Kit for DN 25 Multi-utility Process Trap - 4.5.

FORBES MARSHALL

www.forbesmarshall.com

Forbes Marshall Arca

Codel International

Krohne Marshall

Forbes Vyncke

Forbes Marshall Steam Systems

A: **Forbes Marshall Pvt. Ltd.**
Opp. 106th Milestone, CTS 2220,
Mumbai-Pune Road, Kasarwadi,
Pune MH 411034 INDIA

P: +91(0)20-68138555

F: +91(0)20-68138402

E: ccmidc@forbesmarshall.com

Forbes Marshall International Pte. Ltd.
16A, Tuas Avenue 1,
#05-21, JTC Space @Tuas
Singapore - 639533

P: +65 6219 3890

CIN No: U28996PN1985PTC037806

DOC# MuPT-TIS_R0