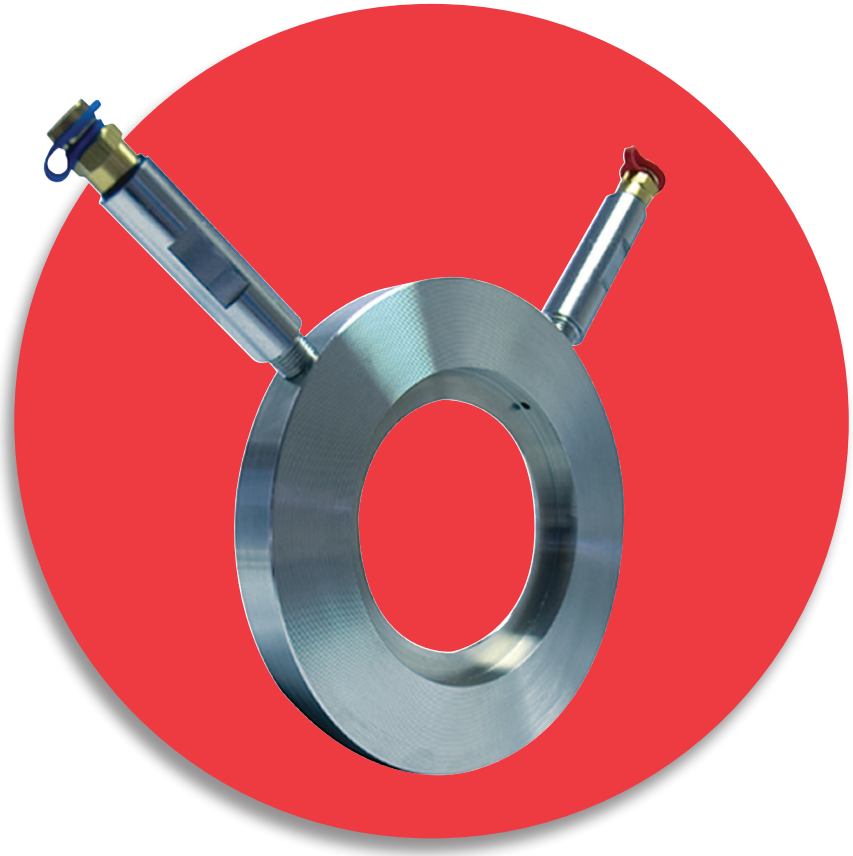
Installation & Operating Manual



ART 270 Stainless Steel Metering Station

Albion Valves (UK) Ltd
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ART 270 Rev 2

Contents

1. Introduction

- Albion Valves (UK) Ltd ART 270 is a Fixed Orifice Metering Station used to measure the flow of media passing through it.
- The ART 270 can be used close coupled to a double regulating valve (DRV) to form a commissioning set.
- The ART 270 has been classified in accordance with PED 2014/68/EU.

2. Technical Data

Valve Type	Size Range	Connection Type	Temperature Rating	Pressure Rating (Max)
ART 270 PN16	DN 50 – DN 600	EN 1092 PN 16	-10°C – 120°C	16 bar

Flow Coefficient

The flow rate can be calculated using the Kv value and a measured signal.

$Kv = Q*36 / \sqrt{\Delta P}$ $Kvs = Q*36 / \sqrt{\Delta Ps}$

Where Kv & Kvs = flow coefficient (m3/hr at 1 bar differential)
Q - Flow rate (l/s)
ΔP - Headloss attributable to valve (kPa)
ΔPs - Differential pressure across tappings (signal) (kPa)

Kvs Values

Size	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Kvs	57	104	137	241	345	516	863	1218	1794	2128	2766	3375	4407	6861

Pressure Loss

The pressure loss across a metering station is less than signal differential pressure indicated on the flow charts. The pressure loss is obtained by using the Kv values given below.

This applies to when the metering station is used in a stand alone application or close coupled to a double regulating valve.

Kv Values

Size	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Kv	71.6	145.5	219	386	572	807	1416	1975	2990	3598	4675	5706	7449	11597

Sizing

Once the required flow rate has been calculated, the size of the metering station can be determined based on the following:

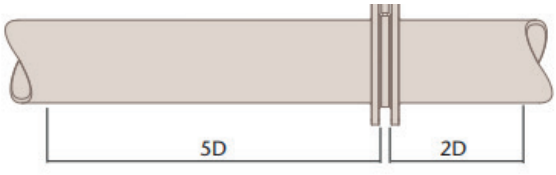
- The minimum signal at the design flow rate of 1 kPa.
- For minimum pressure loss, a maximum signal of 4.7 kPa, which corresponds to the maximum differential pressure range of a fluorocarbon manometer.

3. Valve Features

- Test points are supplied with the ART 270 metering station.

4. Valve Installation

- The valve should be sited to ensure ease of access.
- It is the responsibility of the installer to ensure the valve is suitable for service conditions e.g., temperature, pressure, and service media.
- Where fitted, remove flange protectors / dust caps and all other packaging material.
- Care should be taken to ensure the surface finish of the valve is protected during installation.
- The valves may be installed in horizontal or vertical pipework.
- It is preferable to have the plane of the test points above horizontal to prevent the accumulation of debris within the test port.
- When mounted vertically, there is no obvious dirt entrapment areas and as such, the orientation of the test points is dependent upon the ease of access with the manometer probes.
- The valve is Bi-directional and may be used in any orientation, ensuring the test points are screwed in at the correct port, red test point for + (upstream) and blue test point for (-) downstream.
- Suitable gaskets / sealing material should be used during installation.
- Metering stations may be installed close coupled to an Albion double regulating globe valve.
- ART 270 metering station should be installed with a minimum of 5 pipe diameters upstream and 2 pipe diameters downstream and have the same nominal diameter as the metering station and should not include any reducers or any other intrusions into the bore within this specified lentgh, this is to ensure flow accuracy is maintained during the commissioning stage. When metering stations are used in isolation a minimum of 3 pipe diameters must be fitted downstream.



5. Approvals Classification

- The valve is classified in accordance with PED 2014/68/EU as Sound Engineering Practice (SEP).

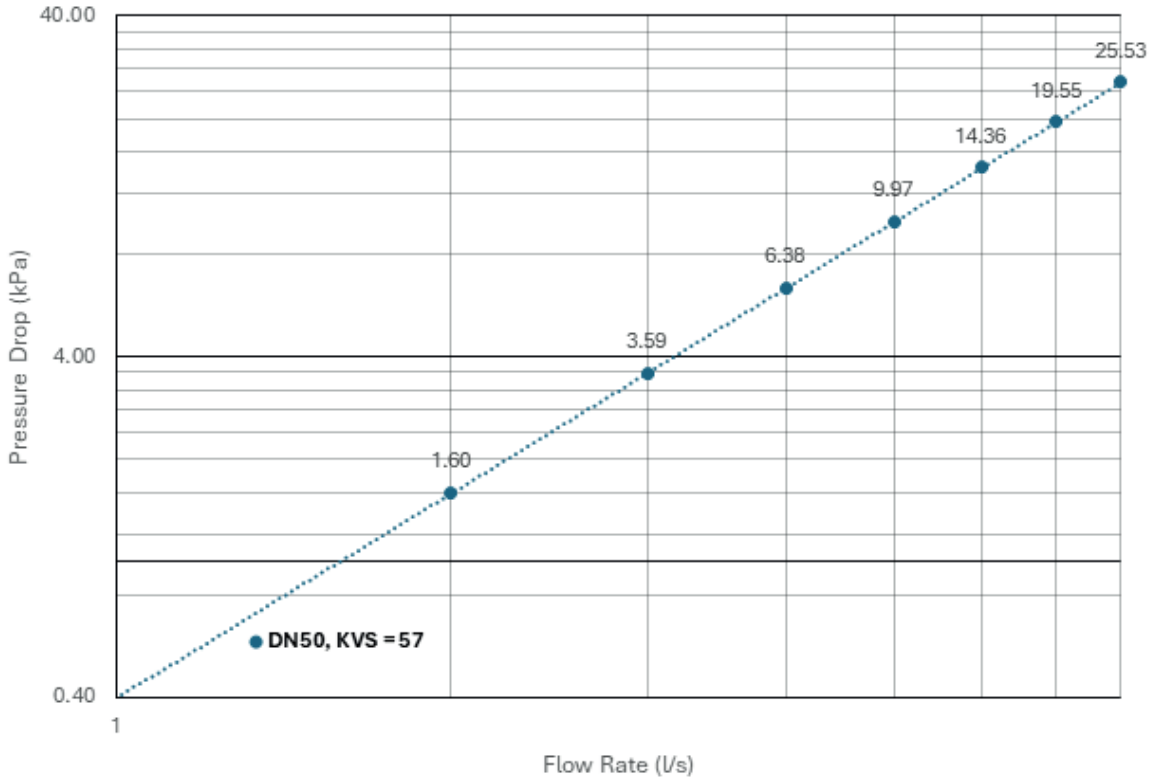
6. Troubleshooting

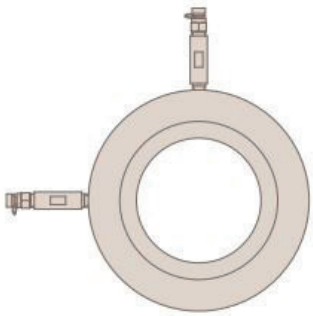
- If any maintenance is to be undertaken on the valve it is the responsibility of the installer to ensure the system is adequately drained and depressurized.
- A full risk assessment should be undertaken prior to any works taking place.

7. Warranty

- For further details of Albion Valves (UK) Ltd warranty period, please refer to Albion Valves (UK) Ltd 'Conditions of Sale' available on our website.

DN50 ART 270 Stainless Steel Metering Station





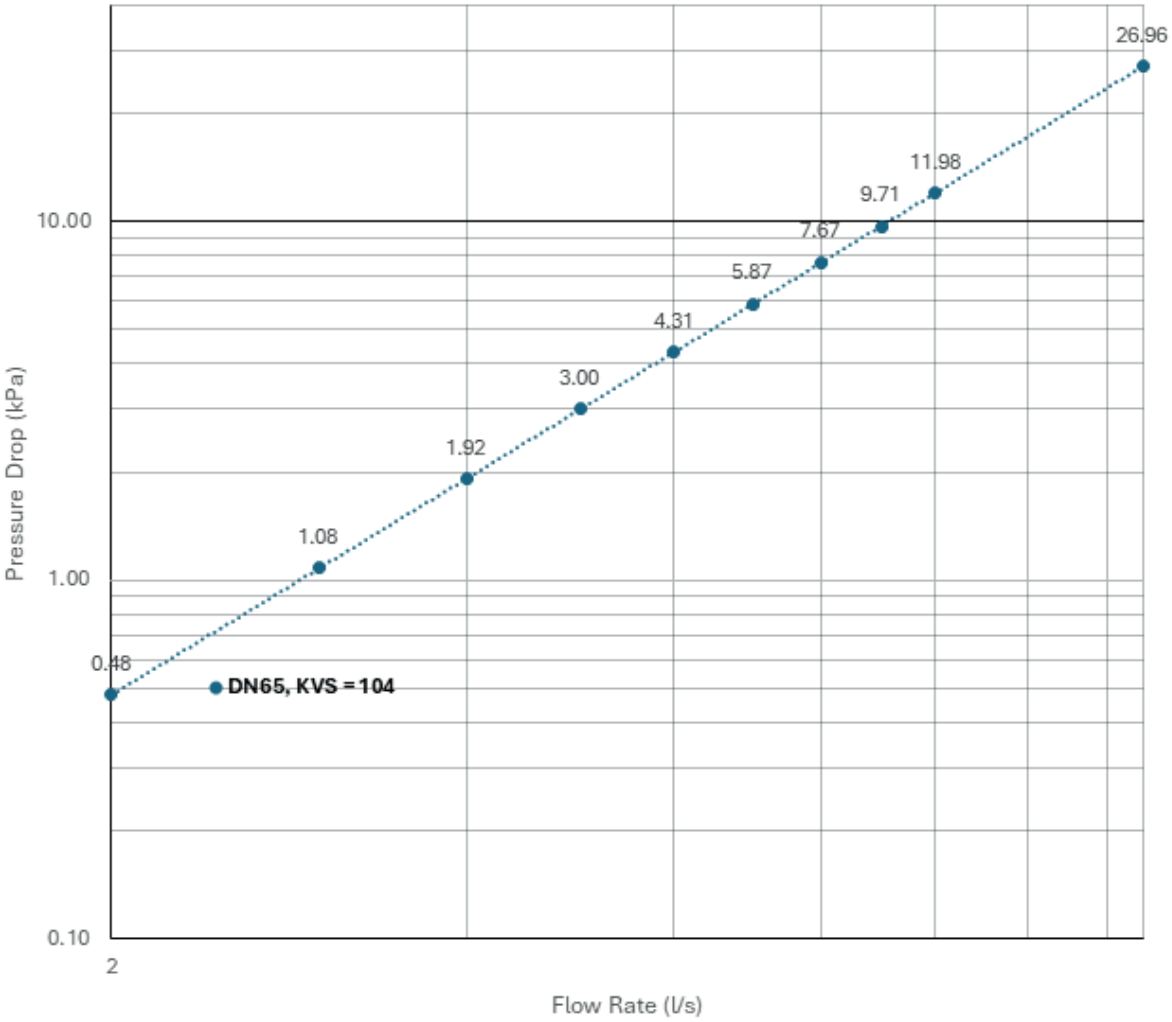
Signal / Flowrate

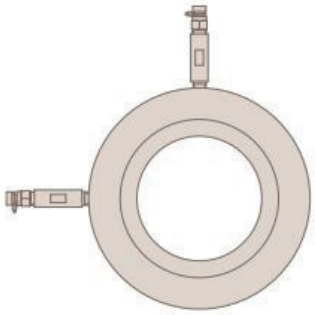
Chart used to determine flowrate from signal measured across orifice

$$Q = \frac{Kvs \sqrt{\Delta p}}{36}$$

Where
Q = Flowrate l/s
Δp = Signal kPa
Kvs = Signal Co-efficient

DN65 ART 270 Stainless Steel Metering Station





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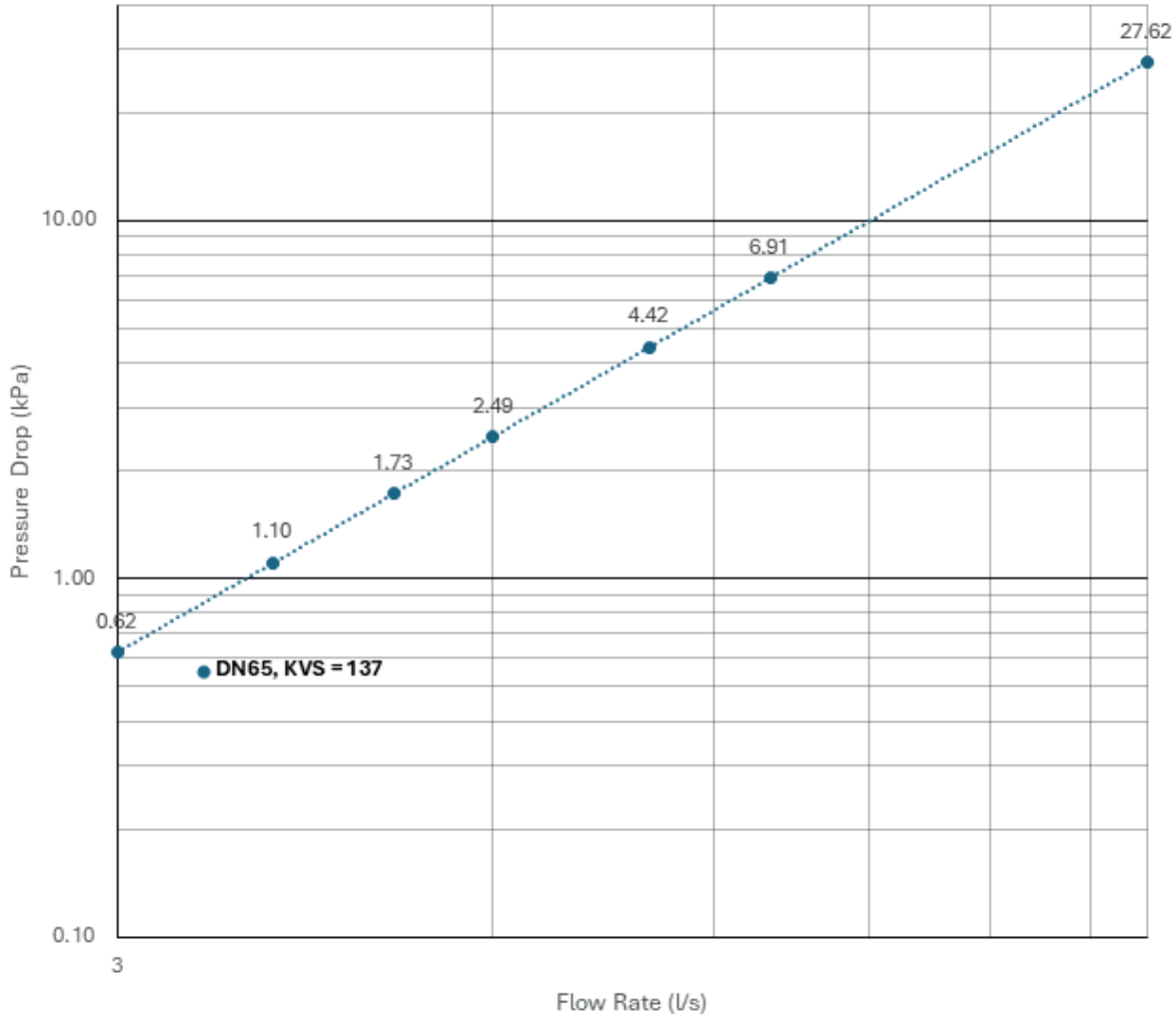
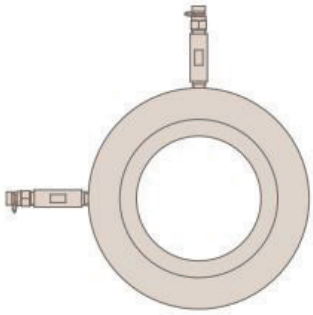
DN80 ART 270 Stainless Steel Metering Station





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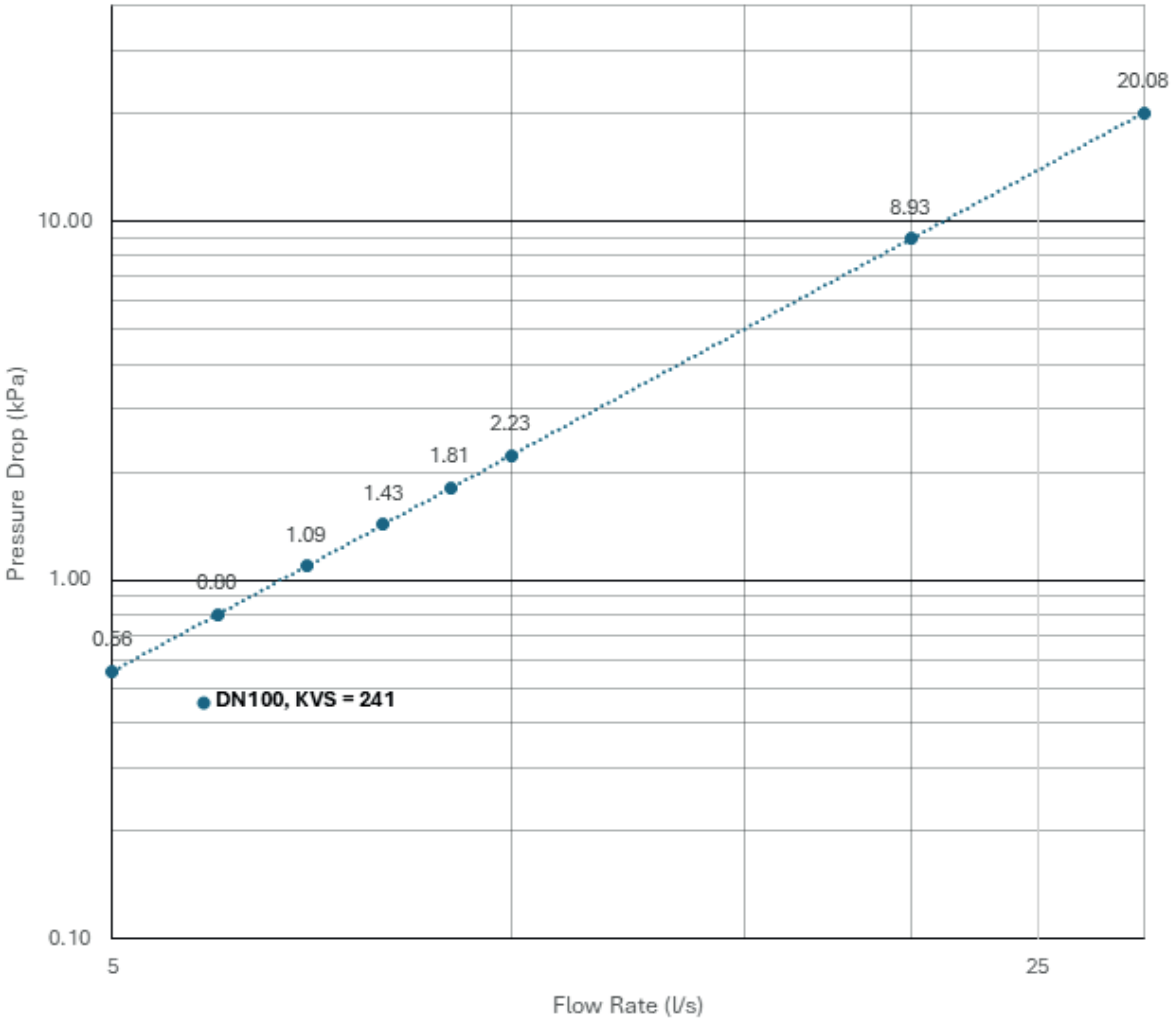
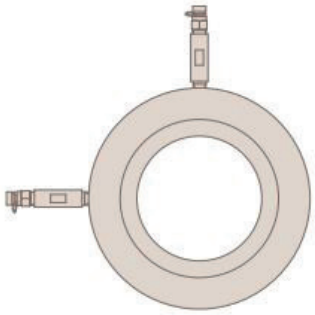
DN100 ART 270 Stainless Steel Metering Station





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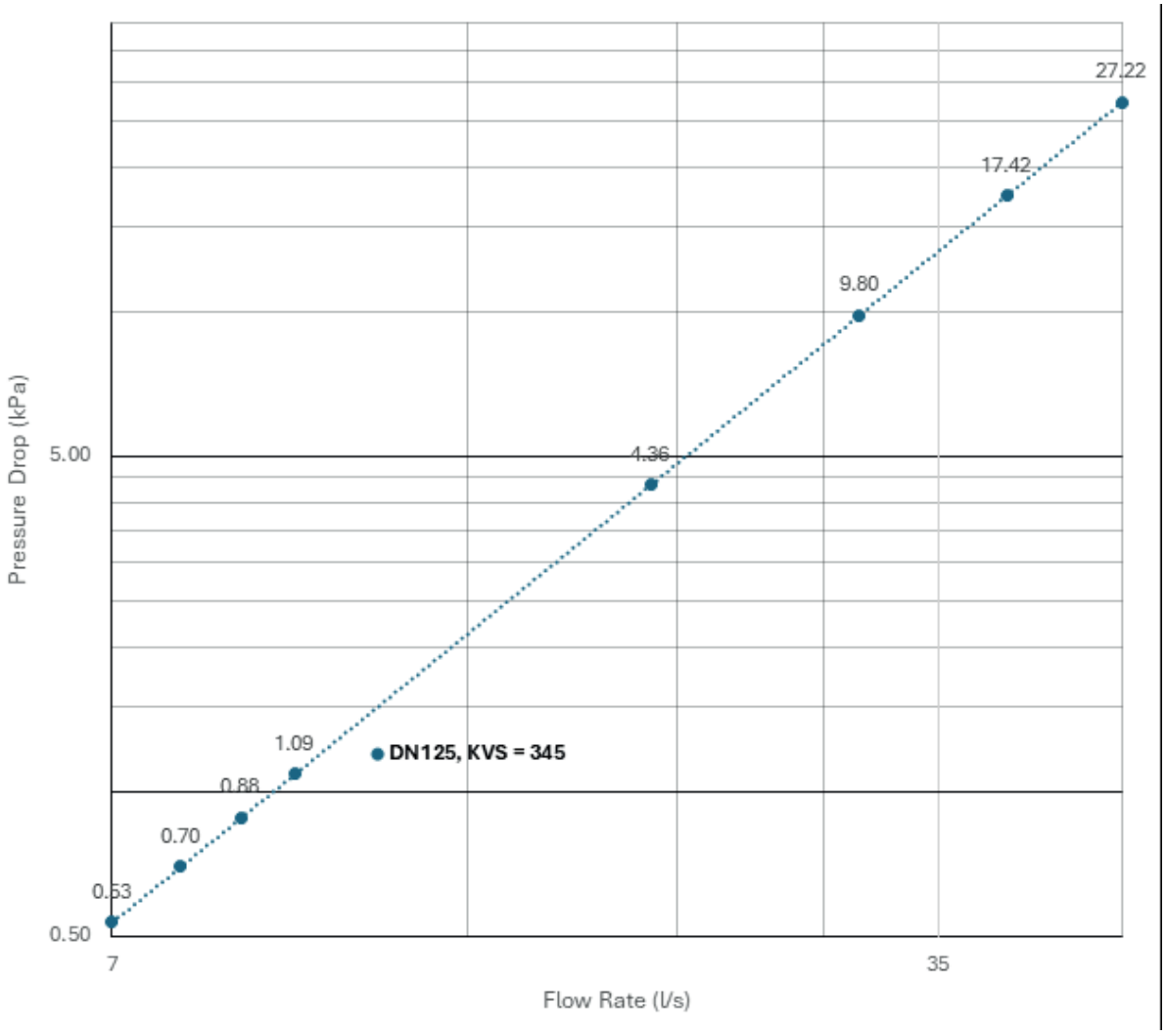
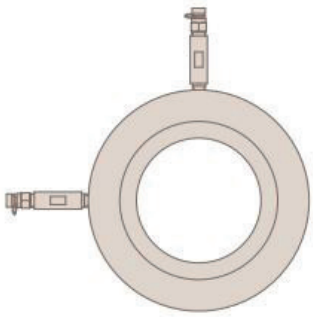
DN125 ART 270 Stainless Steel Metering Station





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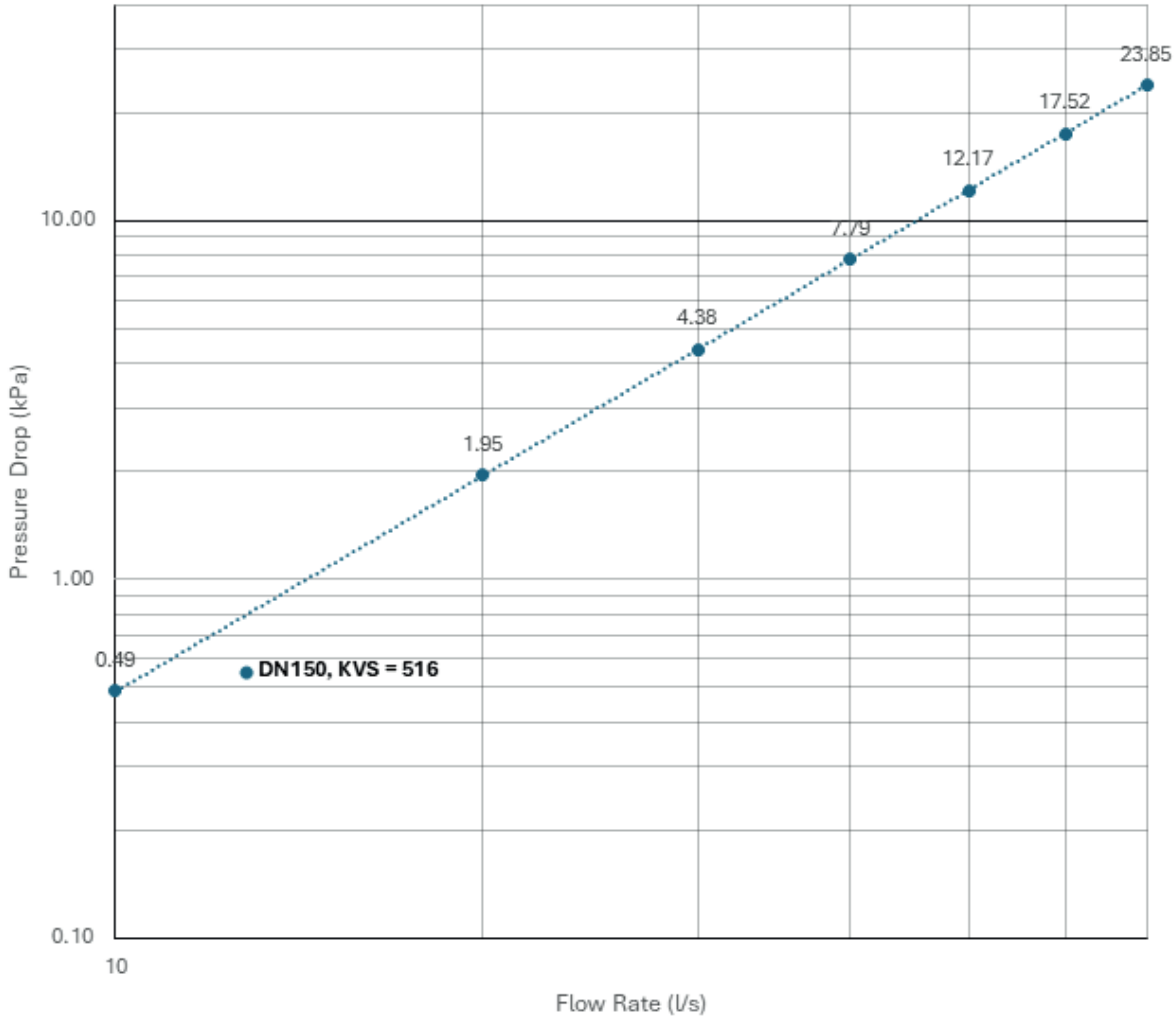
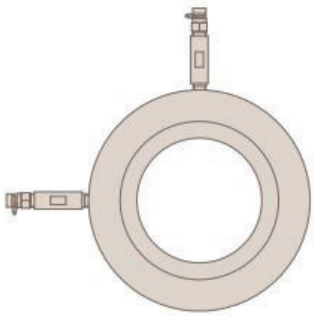
DN150 ART 270 Stainless Steel Metering Station





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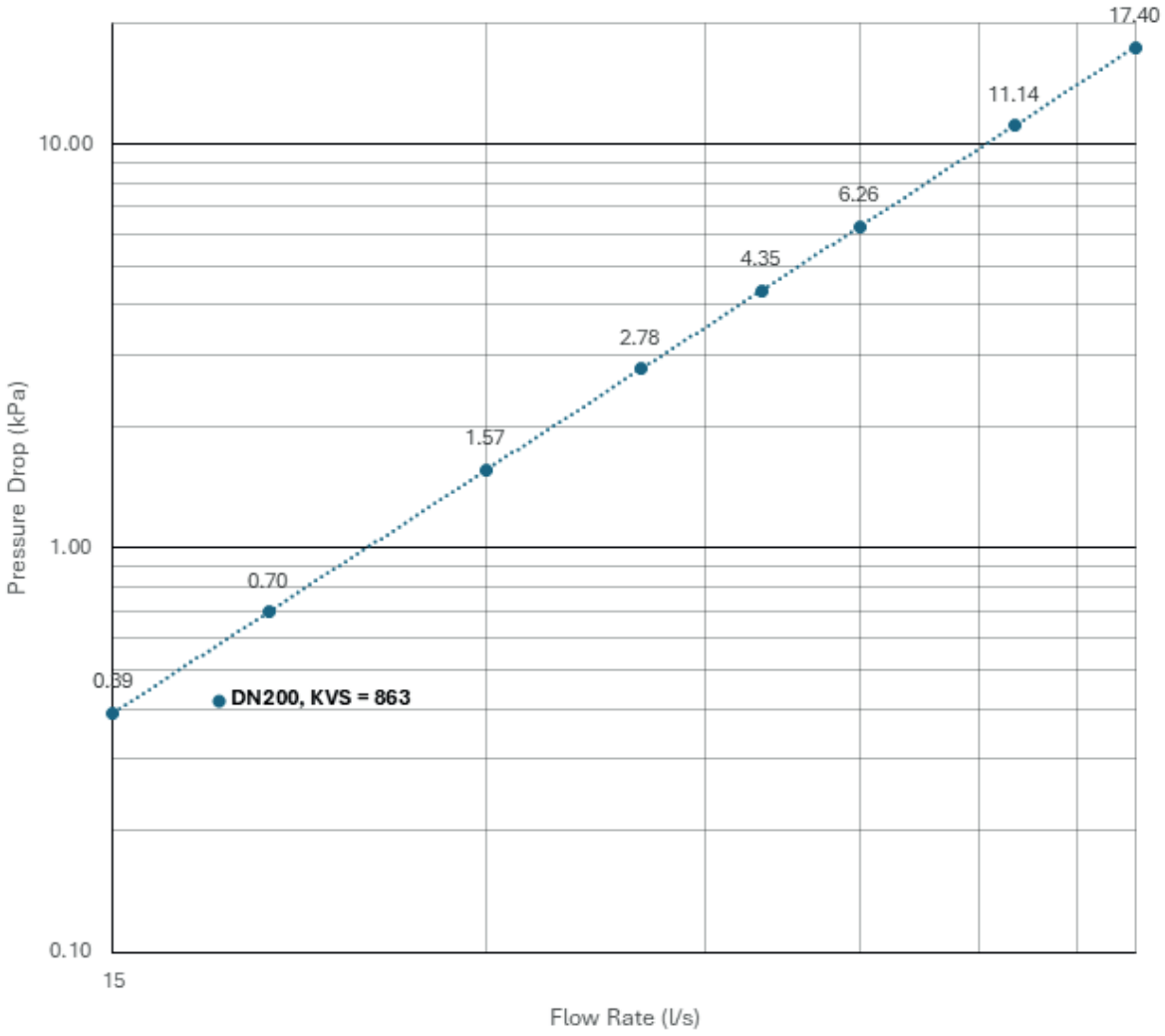
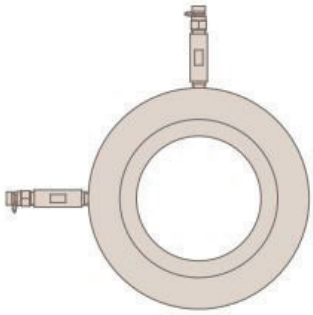
DN200 ART 270 Stainless Steel Metering Station





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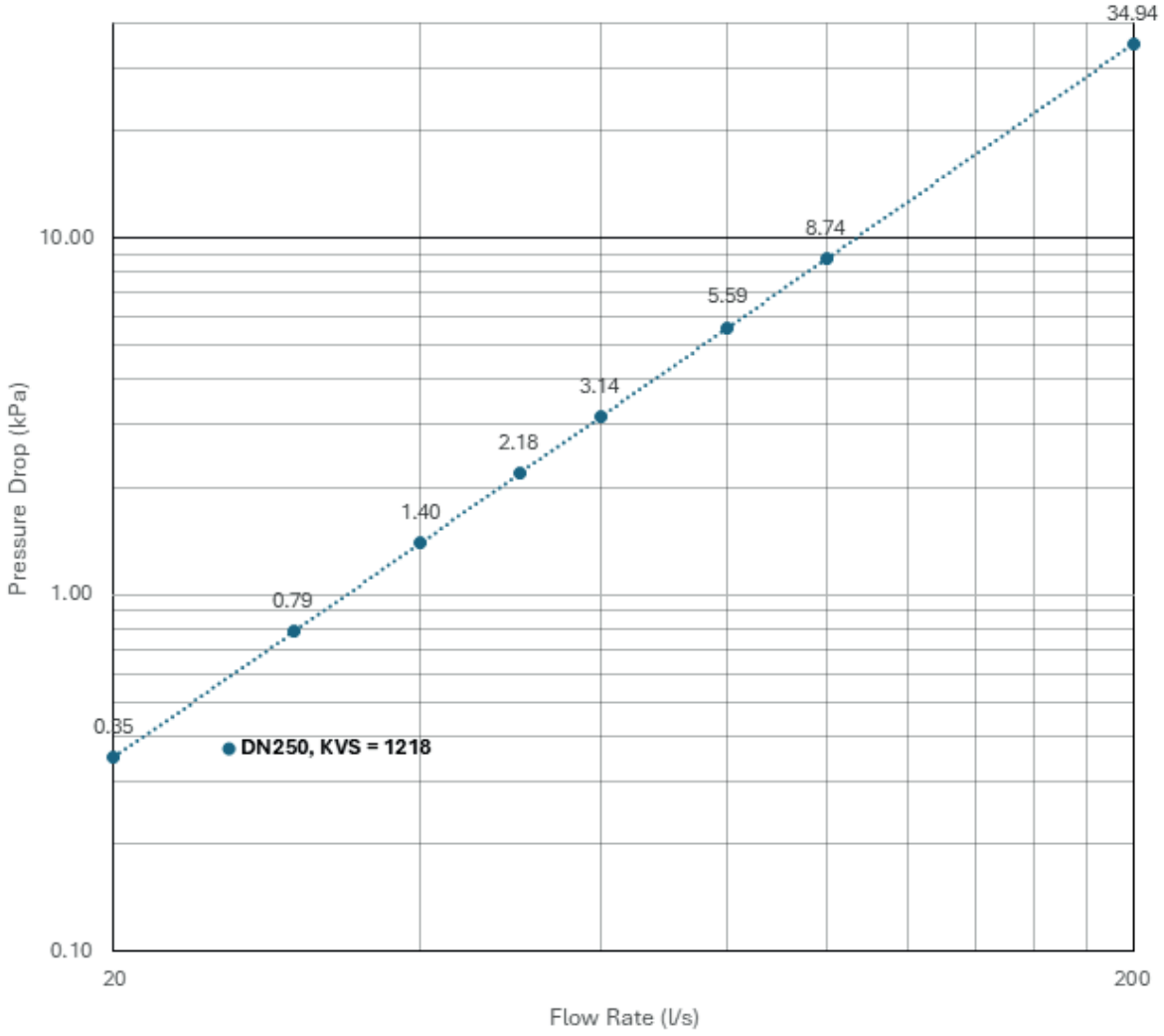
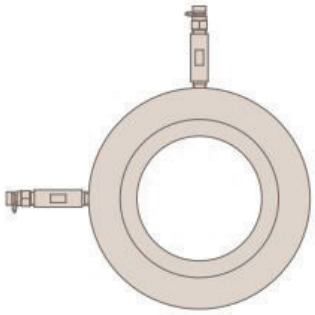
DN250 ART 270 Stainless Steel Metering Station





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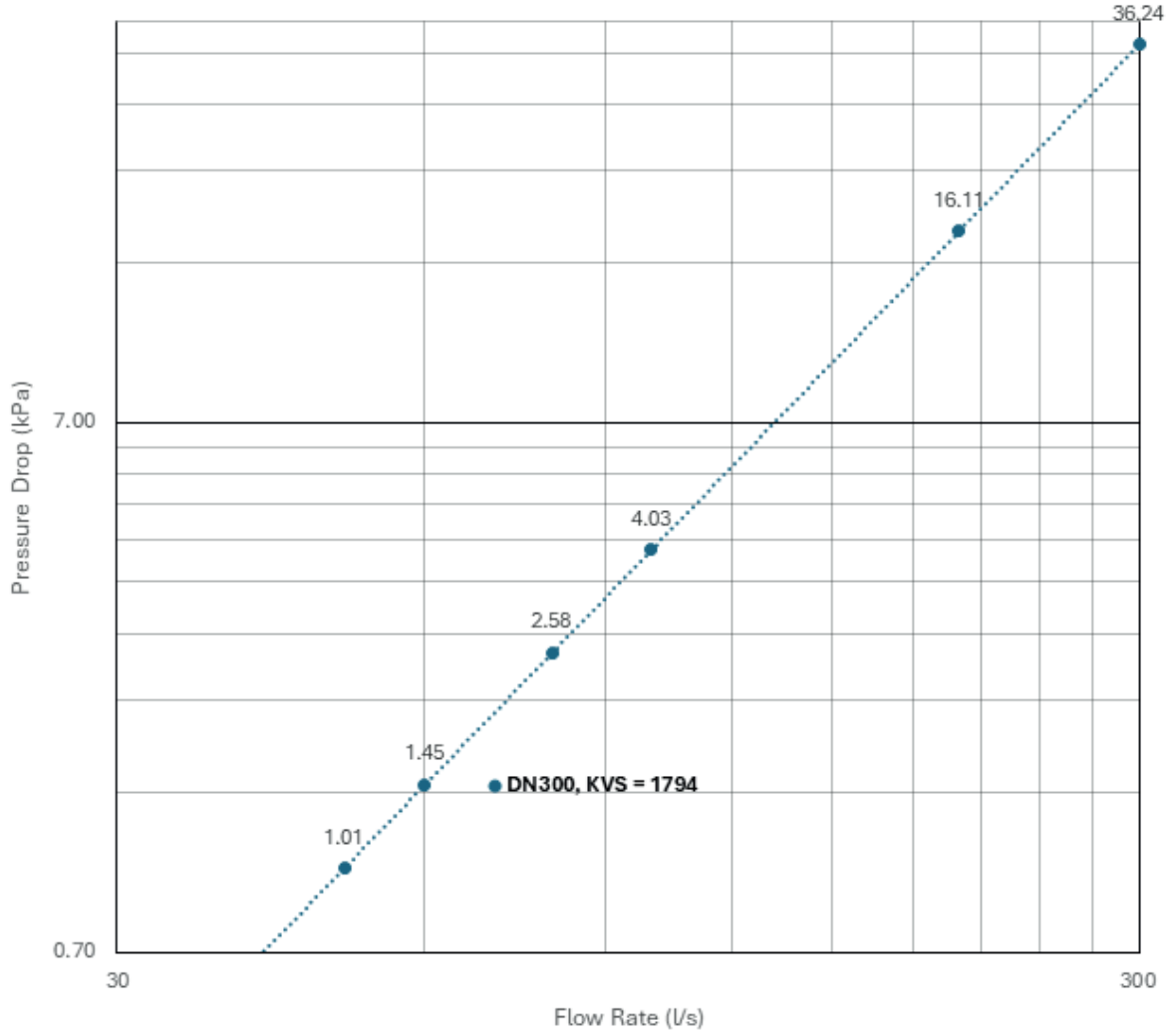

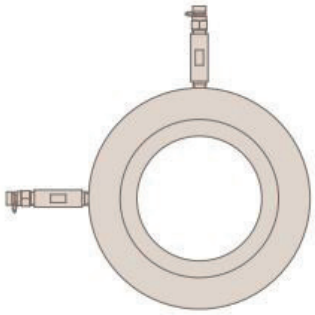

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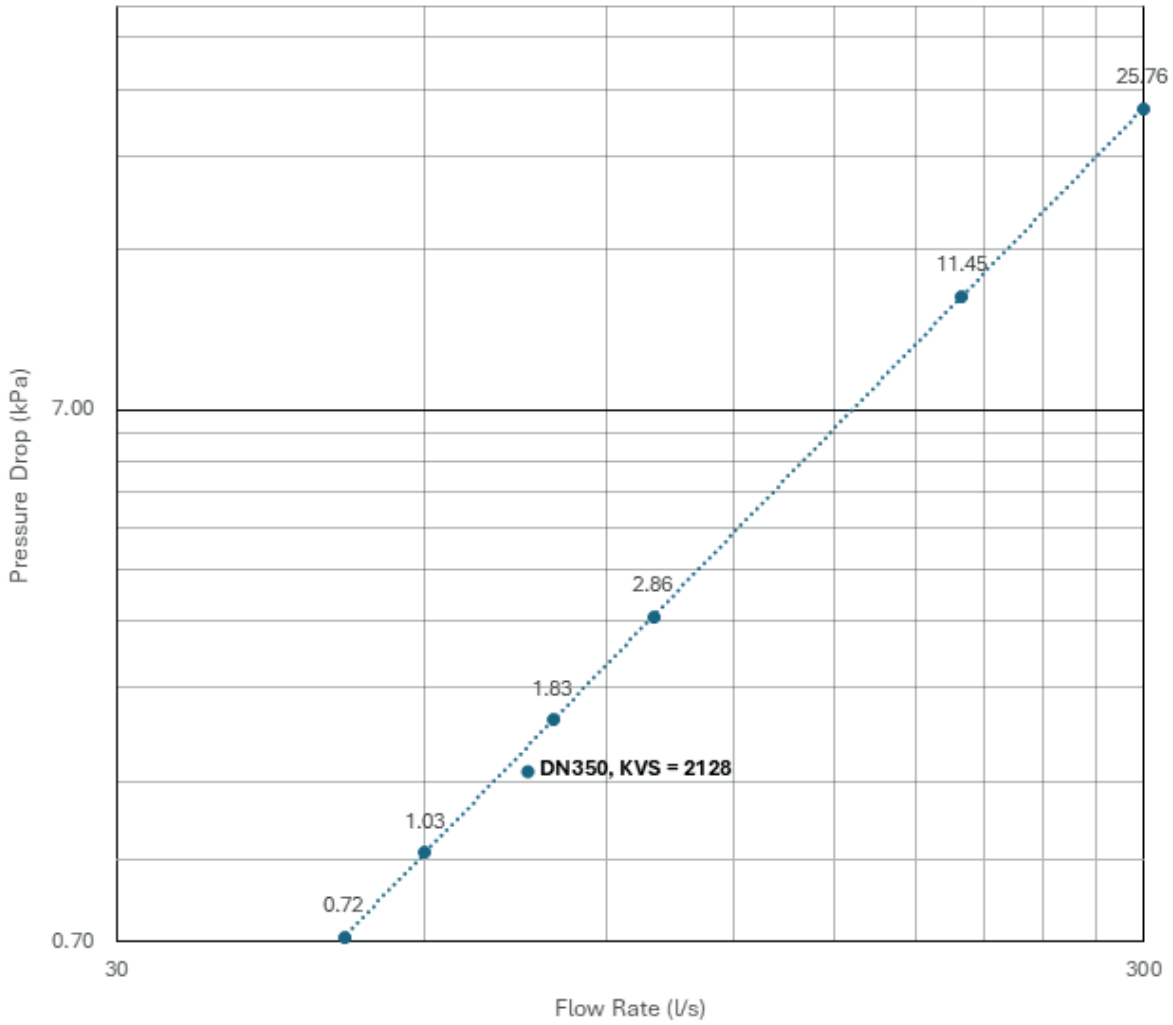

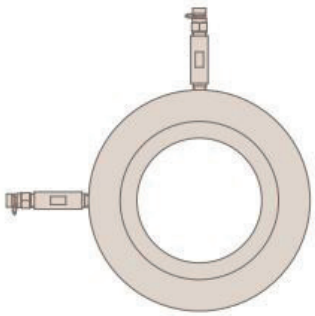

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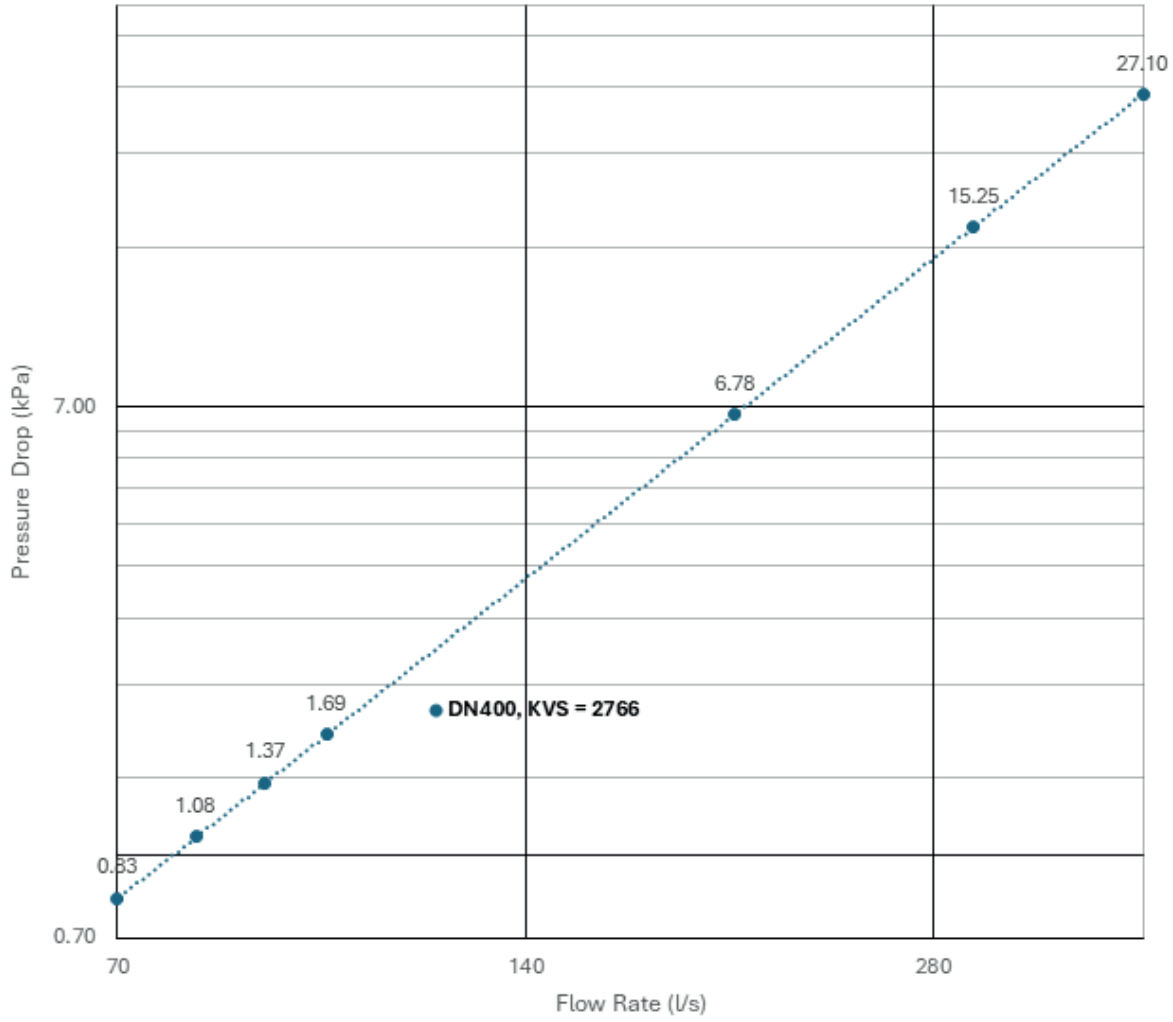
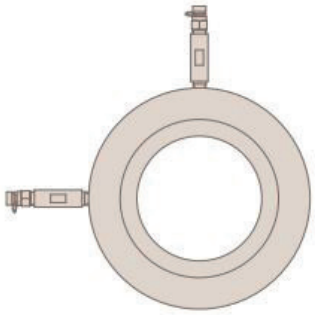
DN400 ART 270 Stainless Steel Metering Station





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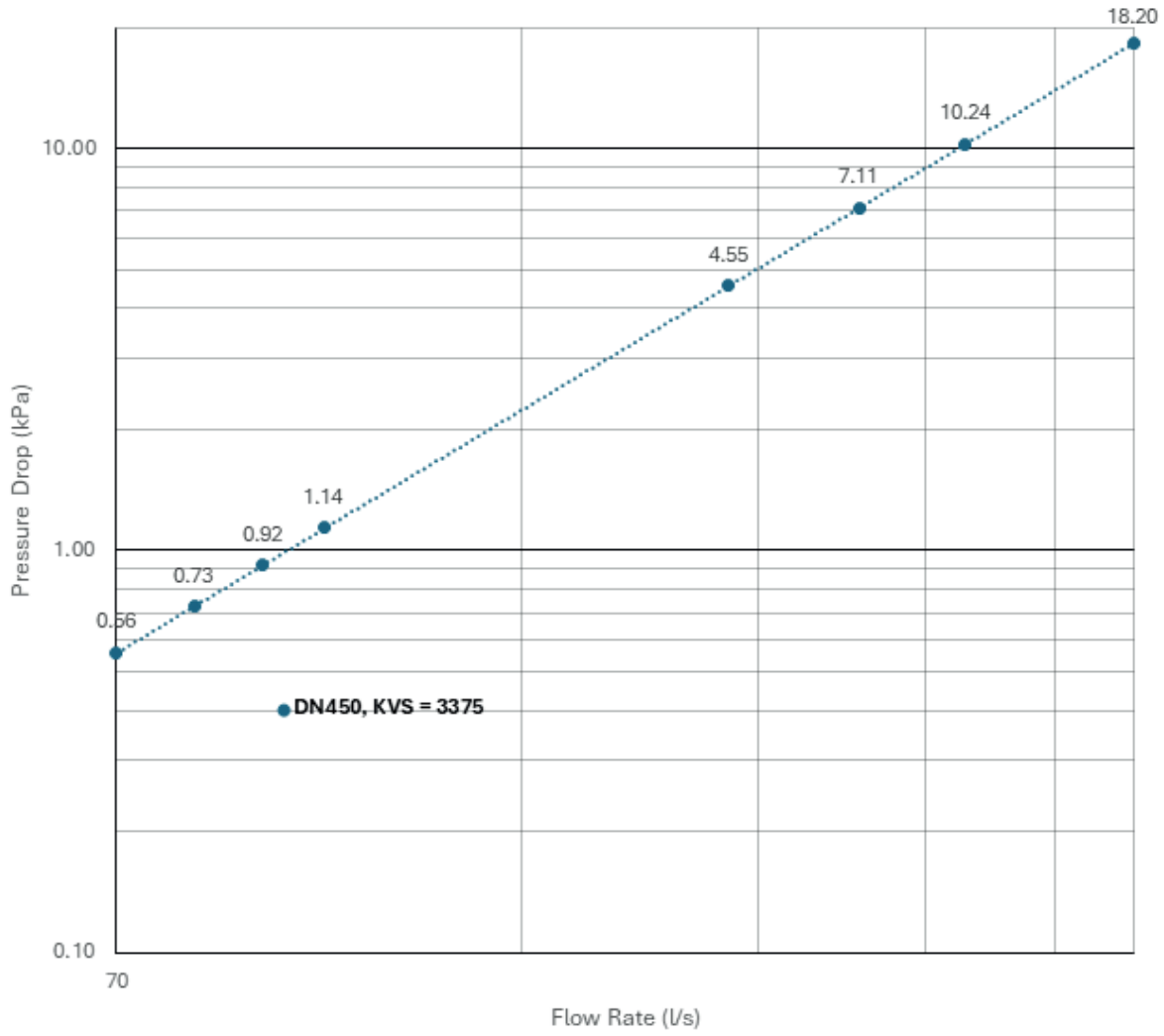

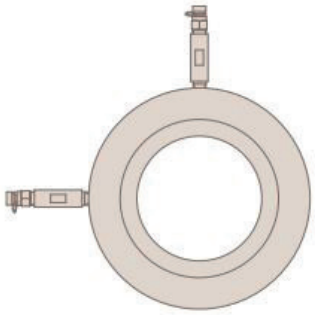

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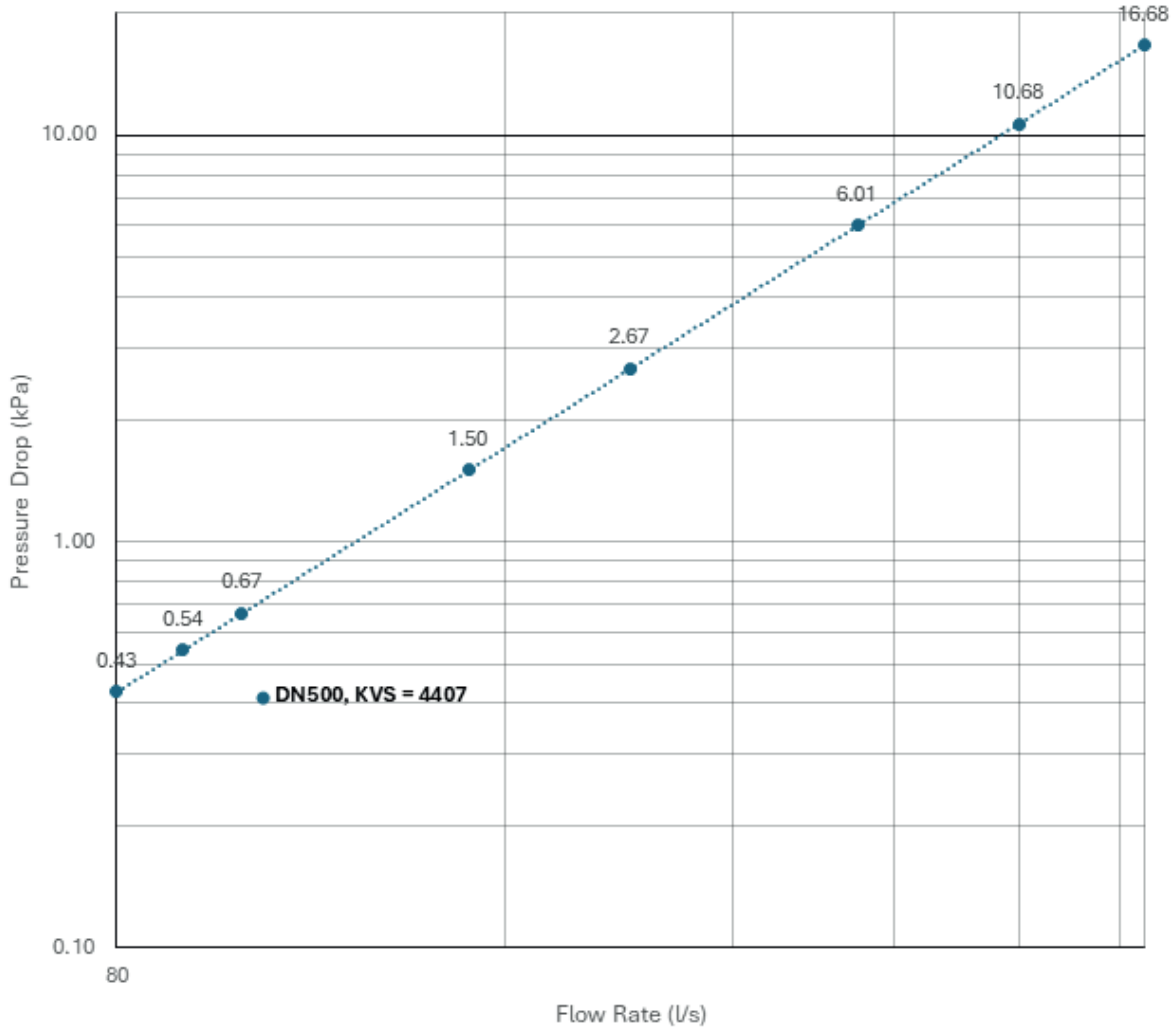

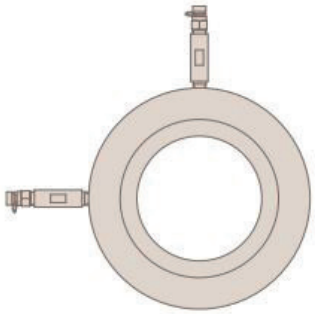

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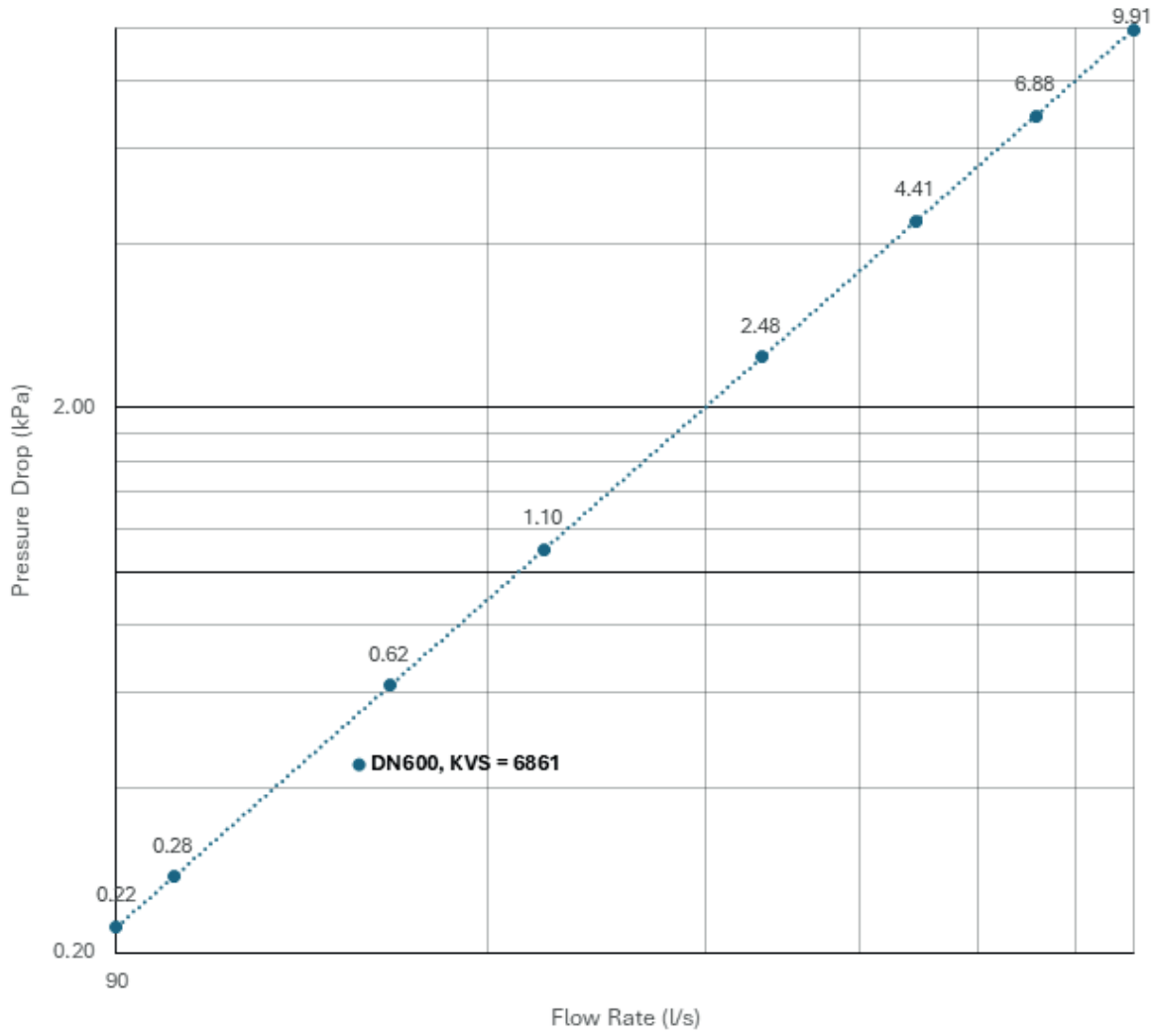

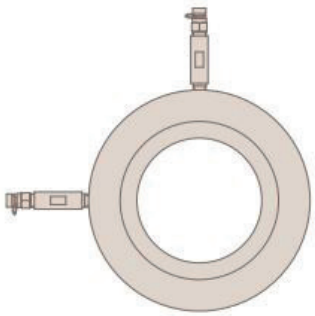

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About Albion Valves (UK) Ltd

Albion has been supplying valves and fittings to the building services and industrial markets for the past 40 years.

Albion was created with the sole purpose of providing quality products at an affordable price. With a growing reputation for quality and reliability, Albion is now an established brand providing the industry with a trusted alternative to premium-priced products.

Our commitment to setting the highest standards in all areas of our business means, if you're looking for quality, service, delivery and choice — you'll find it's all at Albion.

Quality

Whatever you need, you can rest assured that if it comes from Albion it has been designed and manufactured to deliver optimum performance and is accredited with the necessary approvals. Our in-house quality department are always on hand too!

Service

We pride ourselves on our customer service – we have even won awards for it! Our cradle to grave approach means you will never be on your own!

Delivery

We know that time is money, and when a priority project depends on a part you can trust Albion to deliver – next day for all orders placed before 4:00PM.

Choice

We may have started out with a single brass ball valve, but our range has grown substantially since and we now consider ourselves to be a 'One Stop Shop' with our comprehensive range. It is becoming more and more apparent to the industry, that it really is all at Albion.