ART 25

Fixed Orifice Double Regulating Valve

Flow Data and Installation Instructions

Issue 1

ART 25

Technical Data

The Albion ART 25 is a fixed orifice double regulating valve used to regulate and measure the flow passing through it.

Flow Coefficient

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

$$K_v = \frac{Q*36}{\sqrt{\Delta P}} \qquad K_{vs} = \frac{Q*36}{\sqrt{\Delta Ps}}$$

where K_v & K_{vs} = flow coefficient (m^3/hr at 1 bar differential)
Q = flow rate (l/s)
ΔP = headloss attributable to valve (kPa)
ΔPs = differential pressure across tappings (signal) (kPa)

K_{vs} Values

Size	½"	¾"	1"	1¼"	1½"	2"
K_{vs}	1.8	4.1	7.5	16.6	23.0	47.4

Pressure Loss

The pressure loss across the fixed orifice double regulating valve is the combined loss attributable to the orifice plated and double regulating valve in the fully open position.

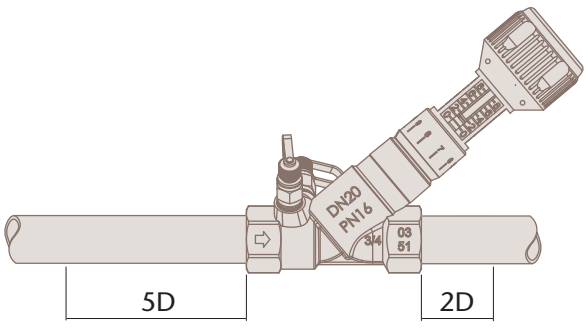
K_v Values

Size	½"	¾"	1"	1¼"	1½"	2"
K_v	1.8	3.8	7.0	15.8	21.1	43.9

Installation

Fixed orifice double regulating valves must always be installed with a minimum of 5 pipe diameters of straight pipe, without intrusion, upstream of the orifice plate.

Downstream of the valve a minimum of 2 pipe diameters of straight pipe are required.



Technical Data

Sizing

Once the required flow rate has been calculated, the size of the fixed orifice double regulating valve can be determined based on the following:

The minimum signal at the design flow rate of 1 kPa.

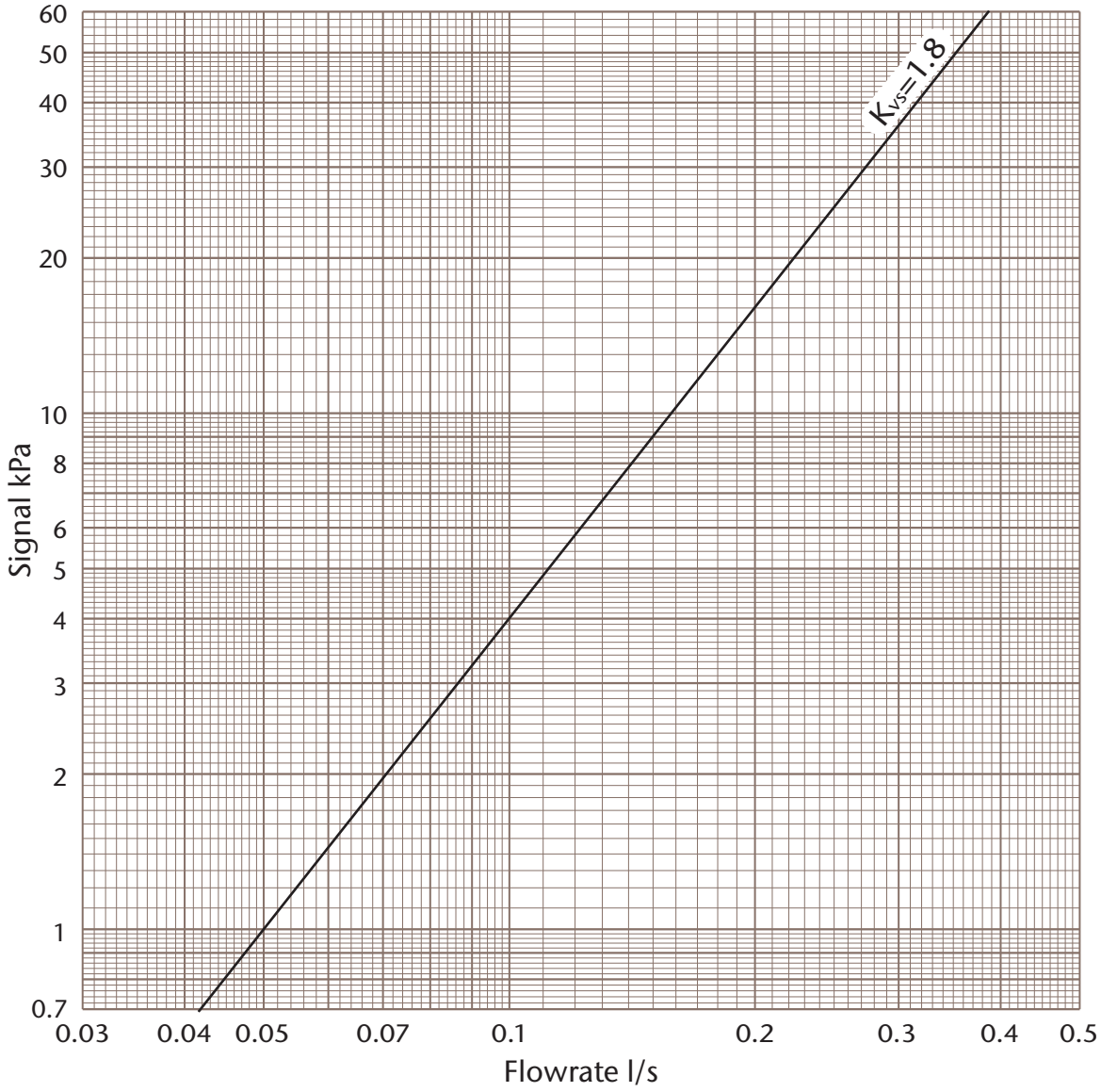
For minimum pressure loss, a maximum signal of 4.7 kPa, which corresponds to the maximum differential pressure range of a fluorocarbon manometer.

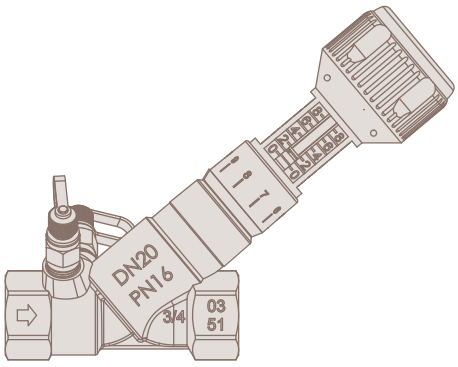
Pressure Equipment Directive

Under the Pressure Equipment Directive (PED) these fixed orifice double regulating valves have been specified for Group 2 Liquids i.e. non-hazardous

Sizes ½" to 2" are classified as SEP (Sound Engineering Practice)

1/2" ART 25 DZR Fixed Orifice Double Regulating Valve





Signal / Flowrate

Chart used to determine flowrate from signal measured across orifice

$$Q = \frac{K_{vs}\sqrt{\Delta p}}{36}$$

Where

Q	=	Flowrate	l/s
Δp	=	Signal	kPa
K_{vs}	=	Signal Co-efficient	

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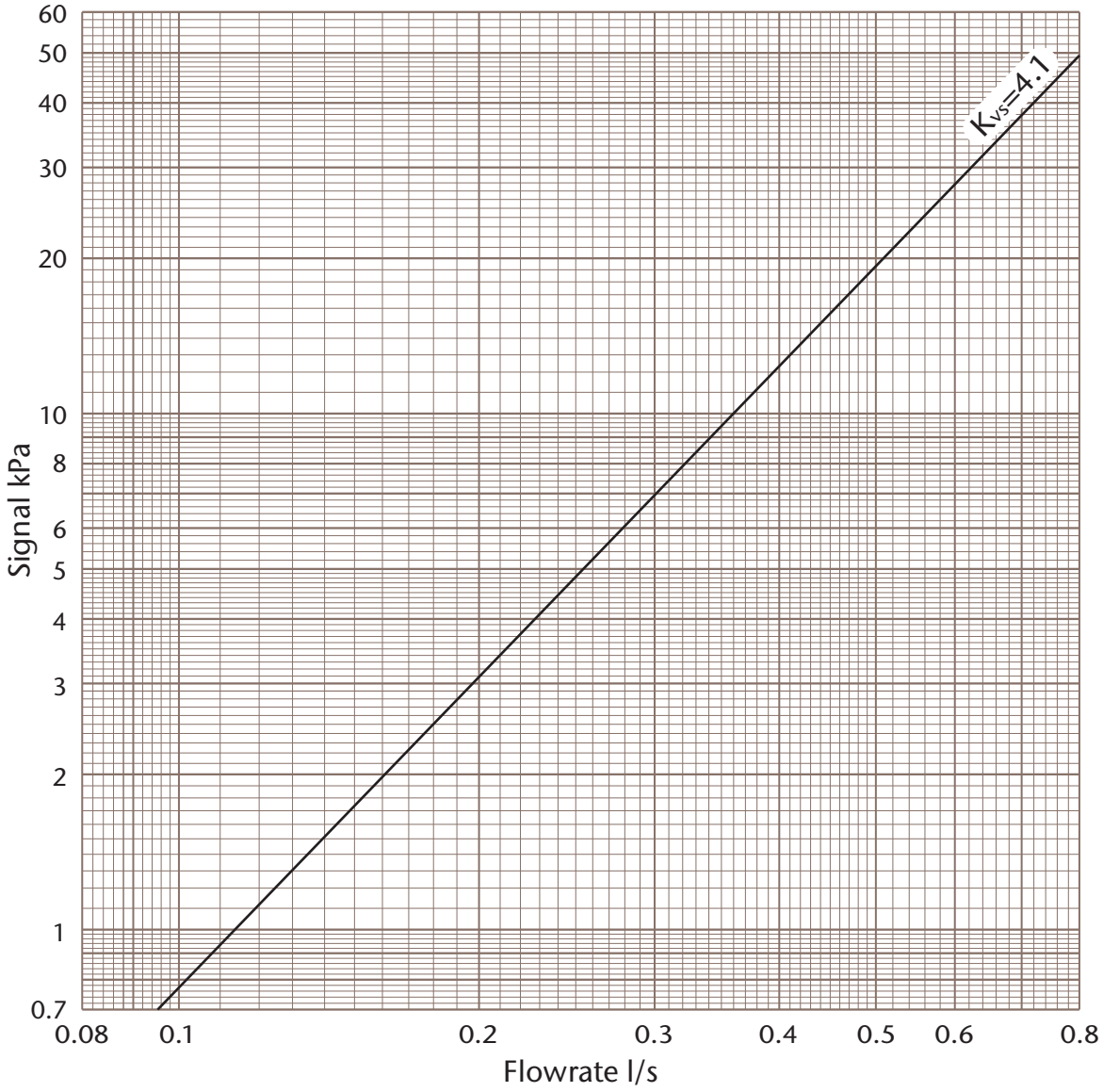
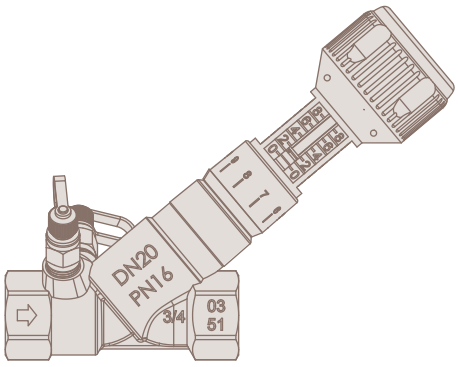
3/4" ART 25 DZR Fixed Orifice Double Regulating Valve





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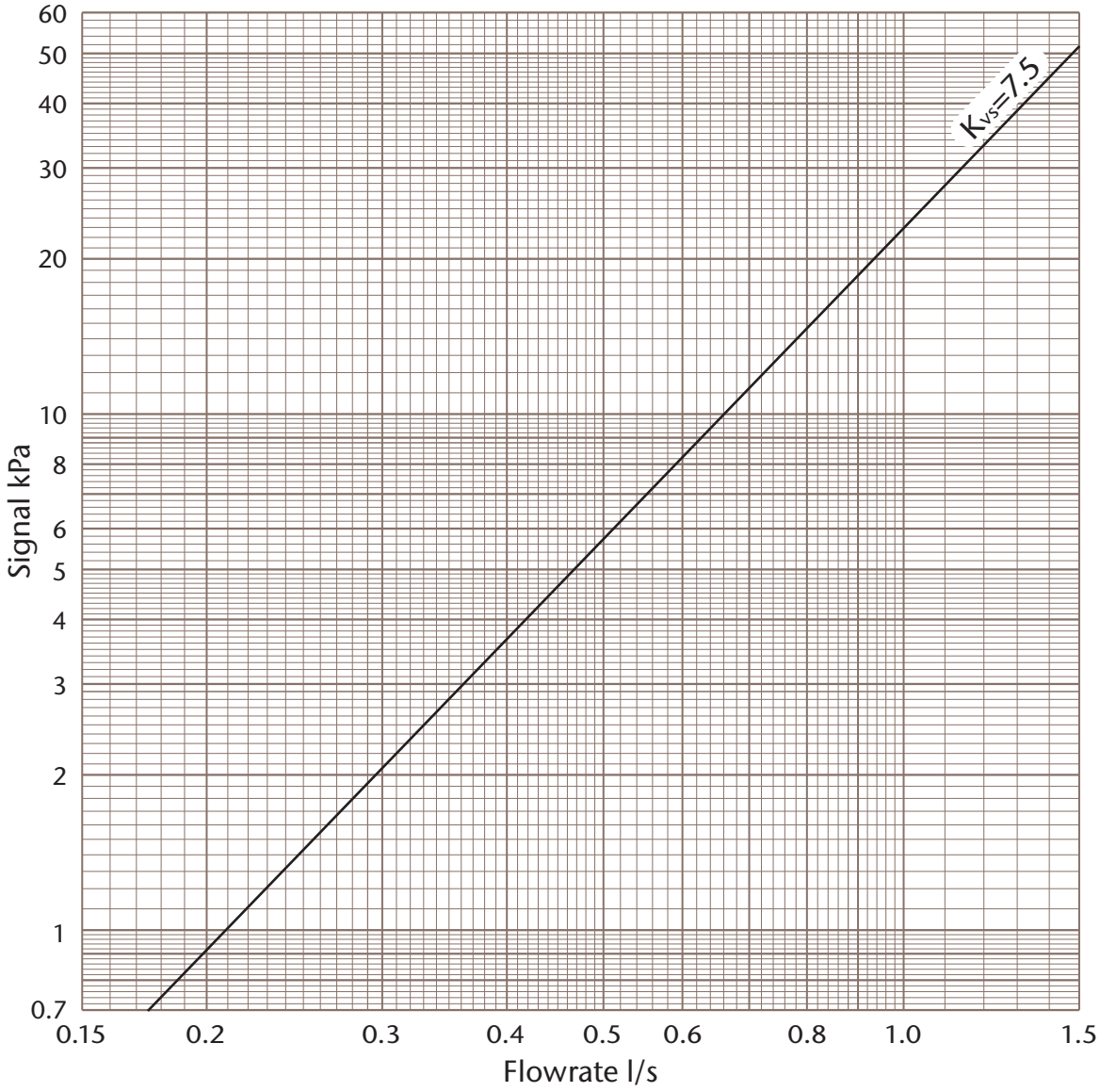
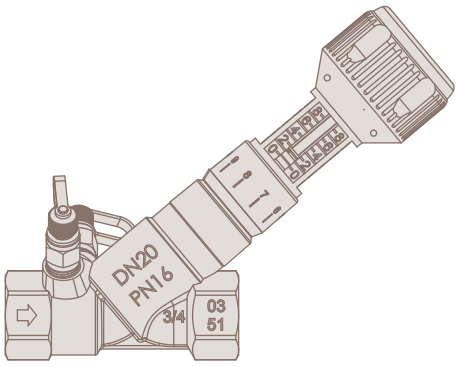
Issue 1

1” ART 25 DZR Fixed Orifice Double Regulating Valve





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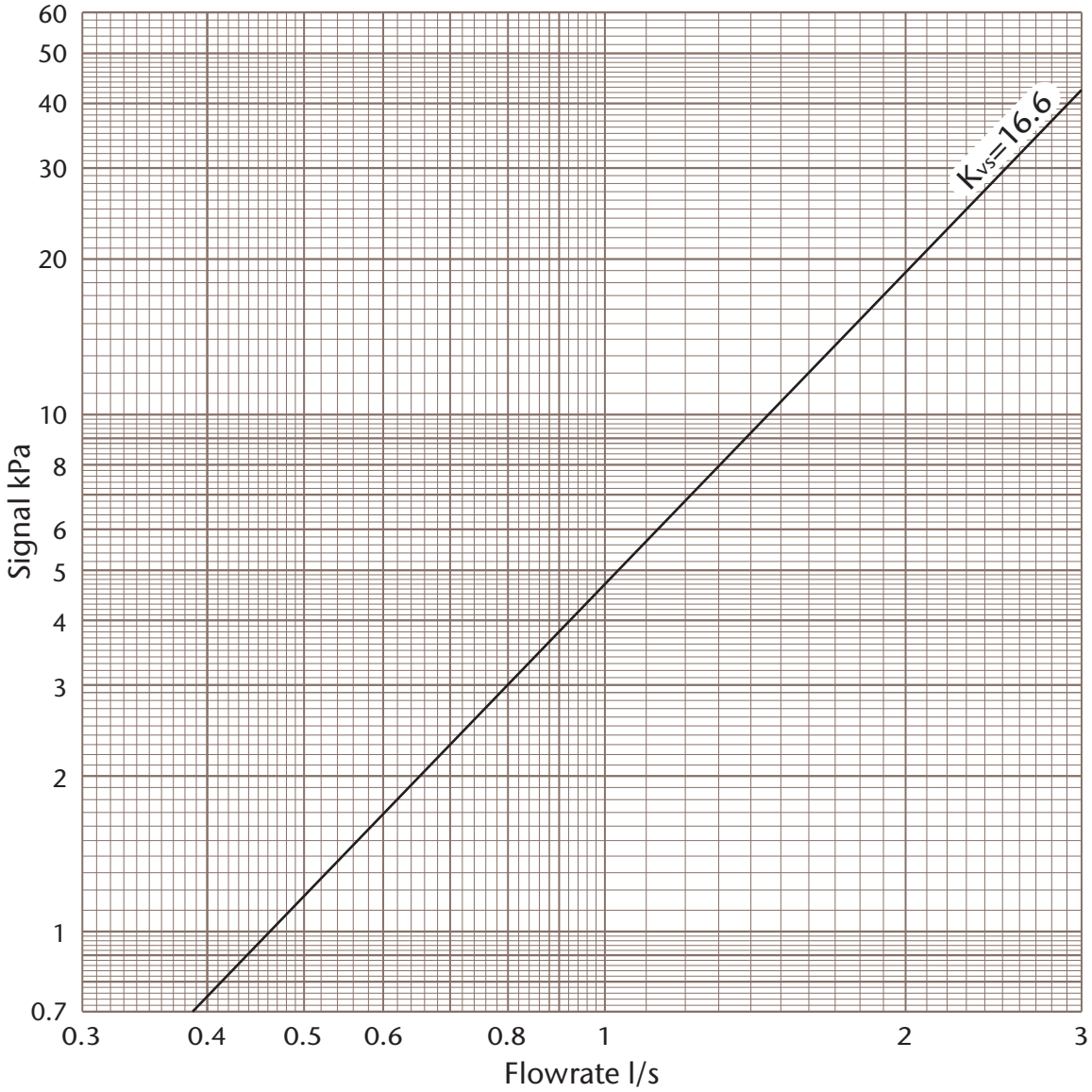
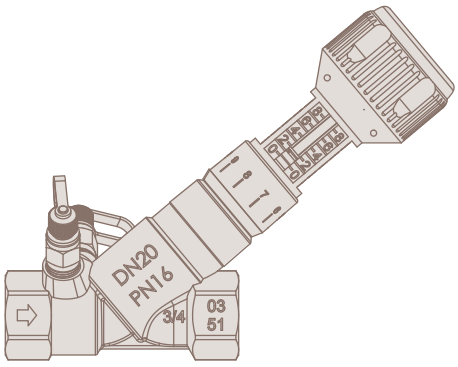
Issue 1

1¼" ART 25 DZR Fixed Orifice Double Regulating Valve





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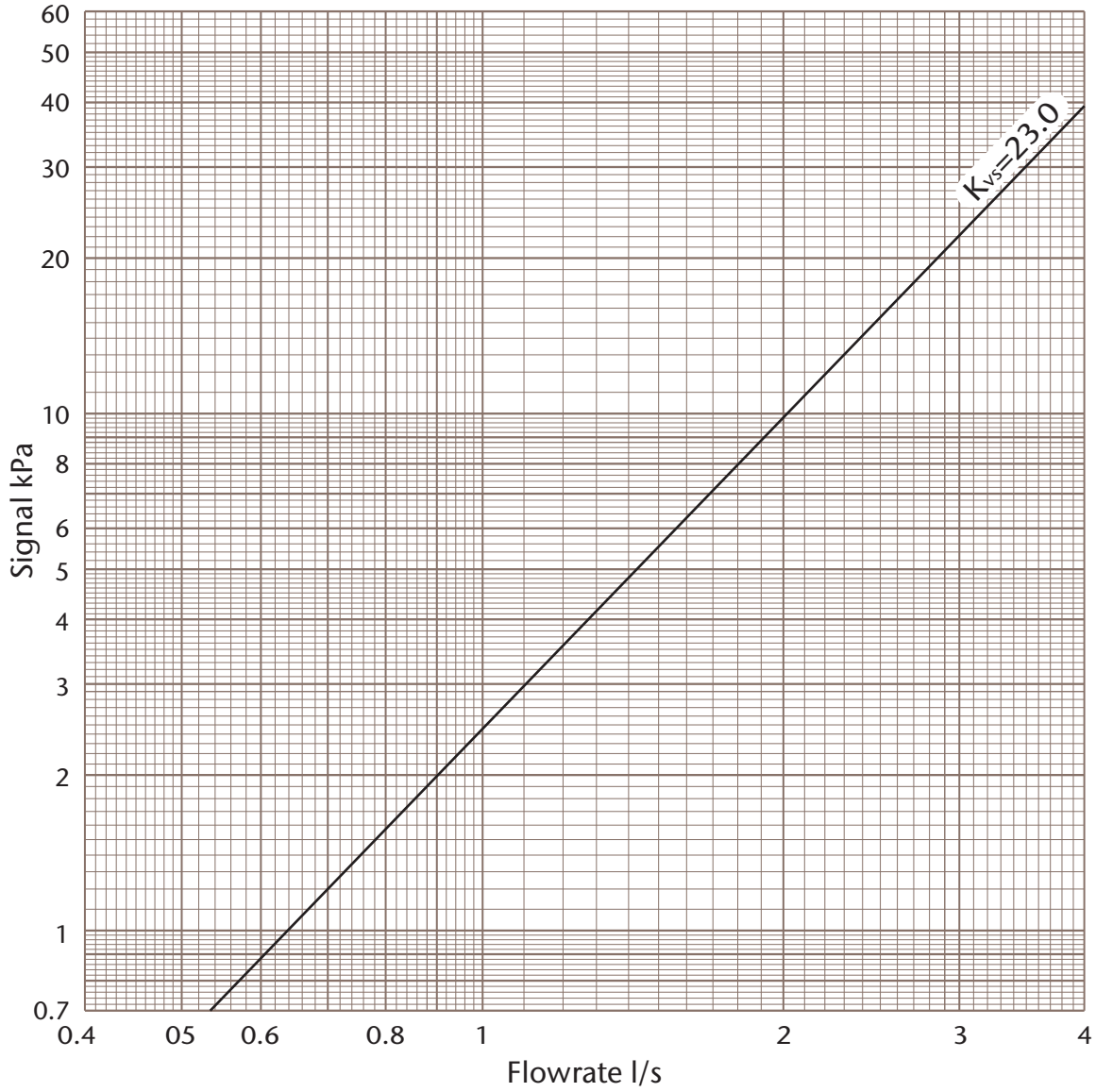
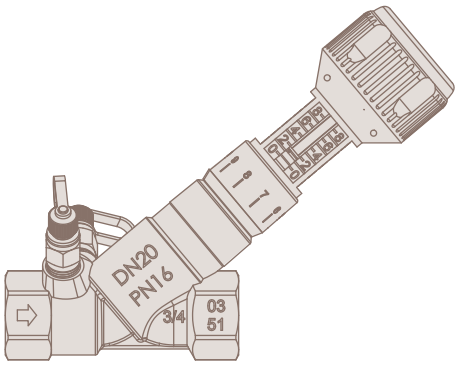
1 1/2" ART 25 DZR Fixed Orifice Double Regulating Valve





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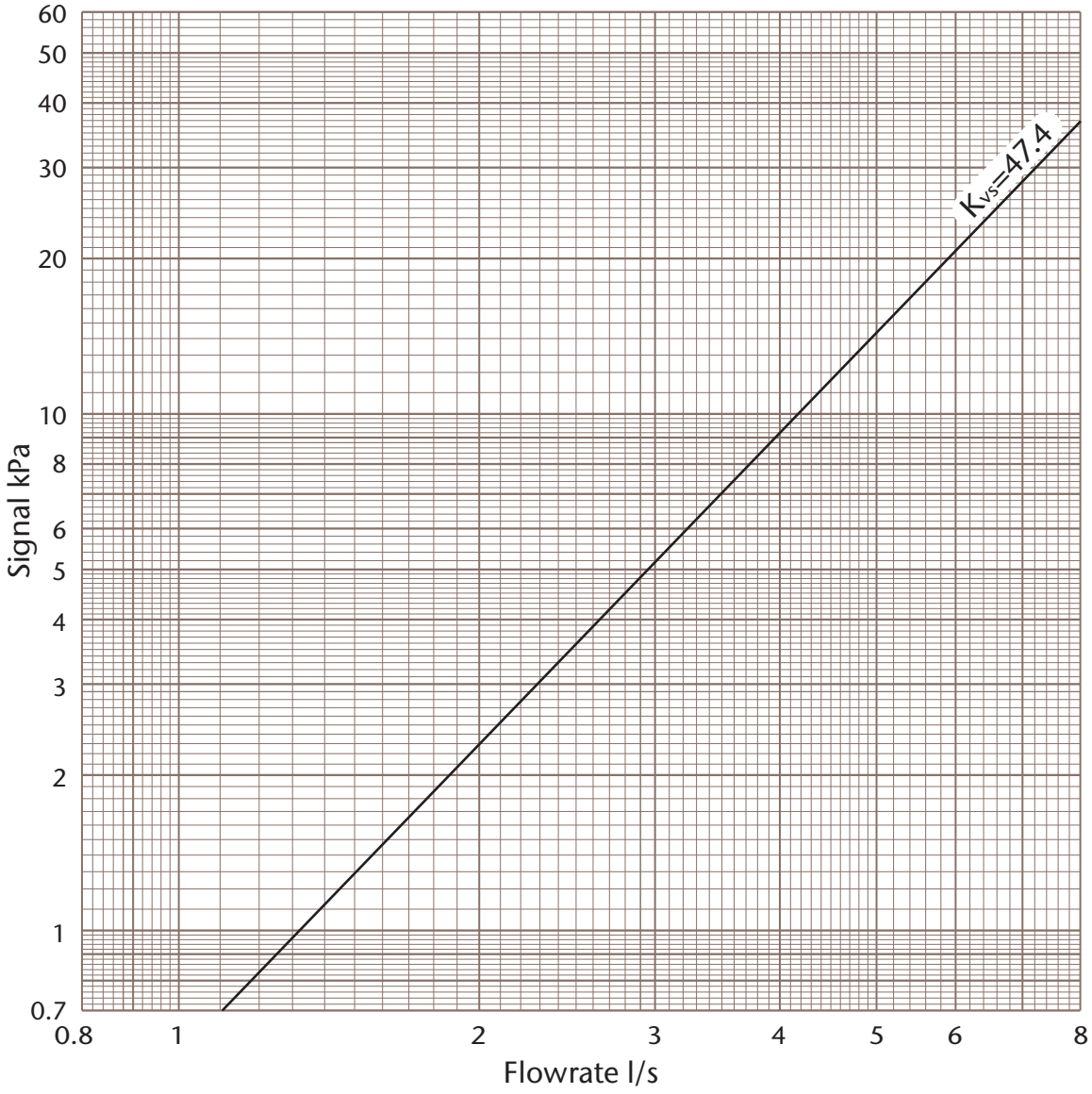
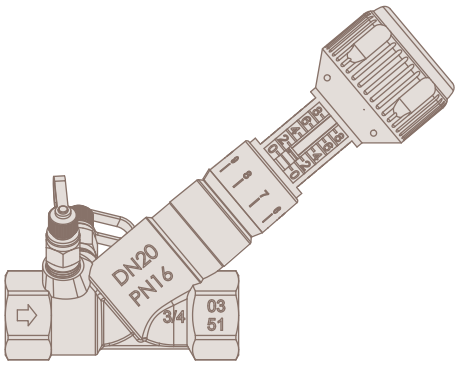
2” ART 25 DZR Fixed Orifice Double Regulating Valve





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