

**Fig No 4218CS**

**Commissioning Set**

**HV2740 + 4218**

**Flow Data**



In this flow data manual we have endeavoured to make the information as accurate as possible. We cannot accept any responsibility should it be found that in any respect the information is inaccurate or incomplete or becomes so as a result of further developments or otherwise.

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# HERZ-Stainless steel orifice plate PN16

February 2013

Issue 1

## Technical Data

The flow rate can be calculated using the  $K_{Vs}$  value and a measured signal.

$$K_V = \frac{Q}{\sqrt{\Delta P}} \quad K_{Vs} = \frac{Q}{\sqrt{\Delta P_s}}$$

where  $K_V$  &  $K_{Vs}$  = flow coefficient (m<sup>3</sup>/hr at 1 bar differential)

$Q$  = flow rate (m<sup>3</sup>/hr)

$\Delta P$  = headloss attributable to orifice plate (bar)

$\Delta P_s$  = differential press across tappings (signal) (bar)

### Flow Coefficient

Size	DN65	DN80	DN100	DN125	DN150	DN200
$K_{Vs}$	100.7	133.6	237.7	339	511	858

Size	DN250	DN300
$K_{Vs}$	1235	1793

### $K_{Vs}$ Values

The pressure loss across the orifice plate can be determined by multiplying the signal by the pressure loss factor.

The pressure loss is always less than measured signal.

### Pressure Loss

Size	DN65	DN80	DN100	DN125	DN150	DN200
Factor	0.40	0.40	0.35	0.35	0.35	0.35

Size	DN250	DN300
Factor	0.35	0.35

### Pressure Loss Factors

Under the Pressure Equipment Directive (PED) these commissioning sets have been specified for Group 2 Liquids i.e. non-hazardous

Sizes DN50 to DN300 are classified as SEP

### PED Categorisation

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# HERZ-Commissioning Valve PN16

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## Technical Data

Herz 2740 orifice plates can be installed in isolation or close coupled to a globe double regulating valve complying with BS 7350, of the same nominal diameter.

Regardless of installation there must always be a minimum of 5 pipe diameters of straight pipe, without intrusion, upstream of the orifice plate.

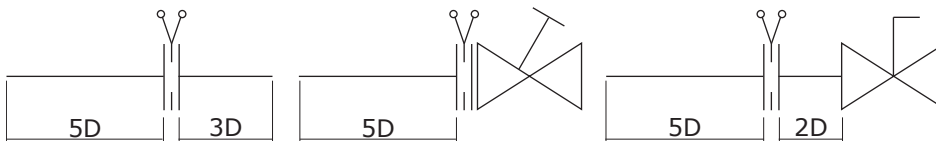
When used in isolation a minimum of 3 pipe diameters of straight pipe are required downstream of the orifice plate.

When close coupled to a Herz 4218 double regulating valve no straight pipe is required after the valve.

When used in conjunction with a butterfly double regulating valve, a spool piece equivalent to a minimum of 2 pipe diameters is required between the orifice plate and butterfly valve.

For more detailed instructions please refer to the Installation, Operation and Maintenance Instructions supplied with the orifice plate and valve.

## Installation



Once the required flow rate has been calculated, the size of the orifice plate 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.

## Sizing

The pressure loss across the commissioning set is the combined loss attributable to the orifice plate and double regulating valve.

The double regulating valve shall not be used less than 25% open.

## Pressure Loss

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# HERZ-Double Regulating Valve PN16

February 2013

Issue 1

## Technical Data

Position Open	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
3				60.7				
3.5		20.6		69.1				
4	15.4	22.9	40.9	77.5	69.3	137		
4.5	17.3	25.0	45.3	86.1	77.8	169	195	
5	19.5	27.1	49.7	94.8	88.3	201	216	
5.5	21.0	30.7	55.0	104	96.3	233	239	272
6	22.8	34.4	60.3	113	106	266	263	302
6.5	24.2	39.9	67.5	124	118	302	290	324
7	25.5	45.5	74.7	136	130	339	317	346
7.5	27.7	52.7	82.3	152	150	376	358	367
8	30.0	59.9	90.0	168	170	413	400	389
8.5	32.8	66.3	97.0	178	194	442	456	455
9	35.6	72.7	104	189	218	472	513	521
9.5	38.9	77.4	110	201	237	501	555	586
10	42.1	82.1	116	212	256	531	597	664
11	47.7	90.2	126	229	288	561	697	785
12	51.6	96.7	135	243	315	591	781	907
13	56.5	101.4	143	256	340	621	846	1009
14	60.8	107	151		355	649	928	1111
15	64.2		158		371	676	972	1238
16	66.9		165		390		1014	1365
17			169				1065	1447
18							1083	1529
22								1785

## K<sub>v</sub> Values

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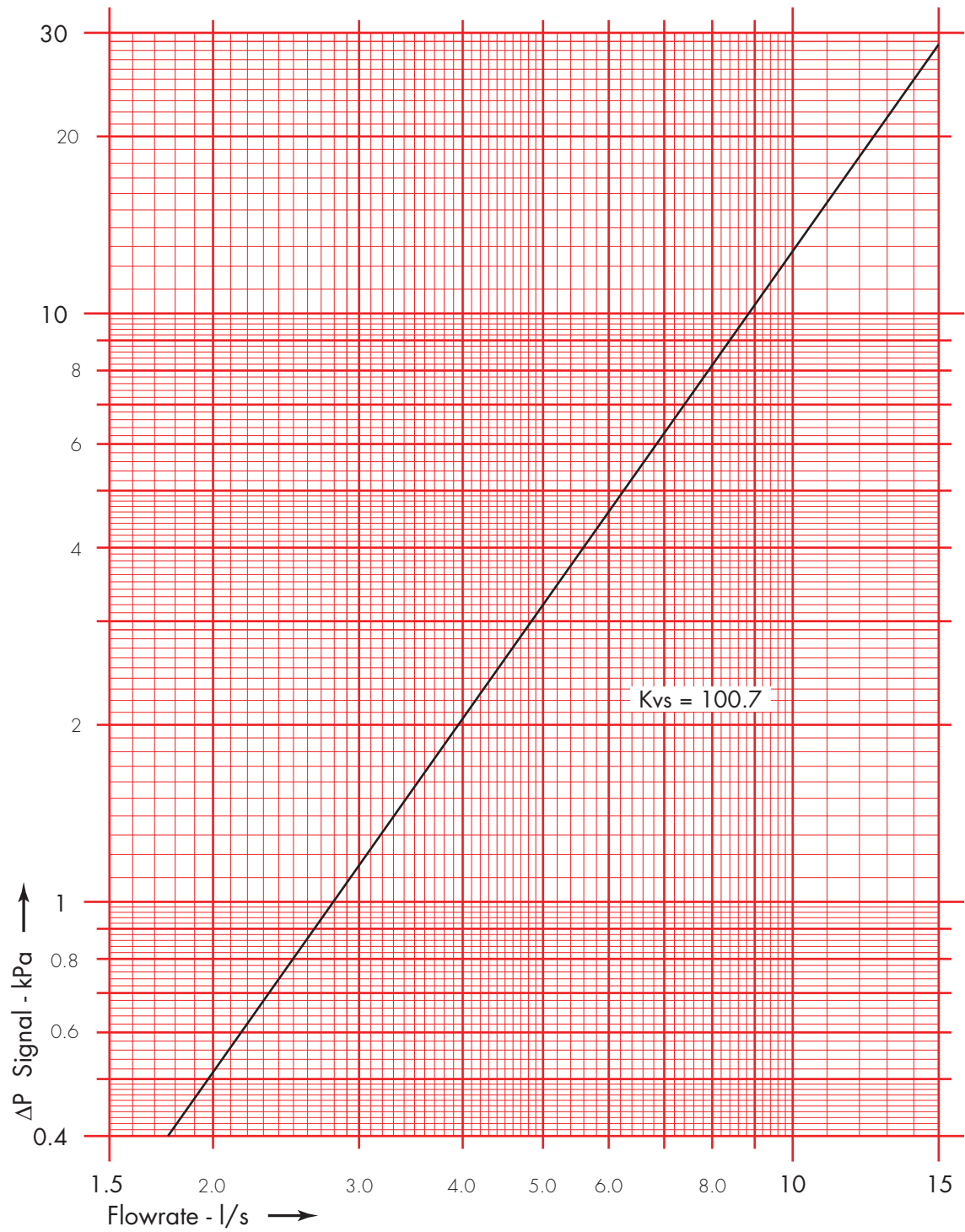
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 07	Dim. DN65



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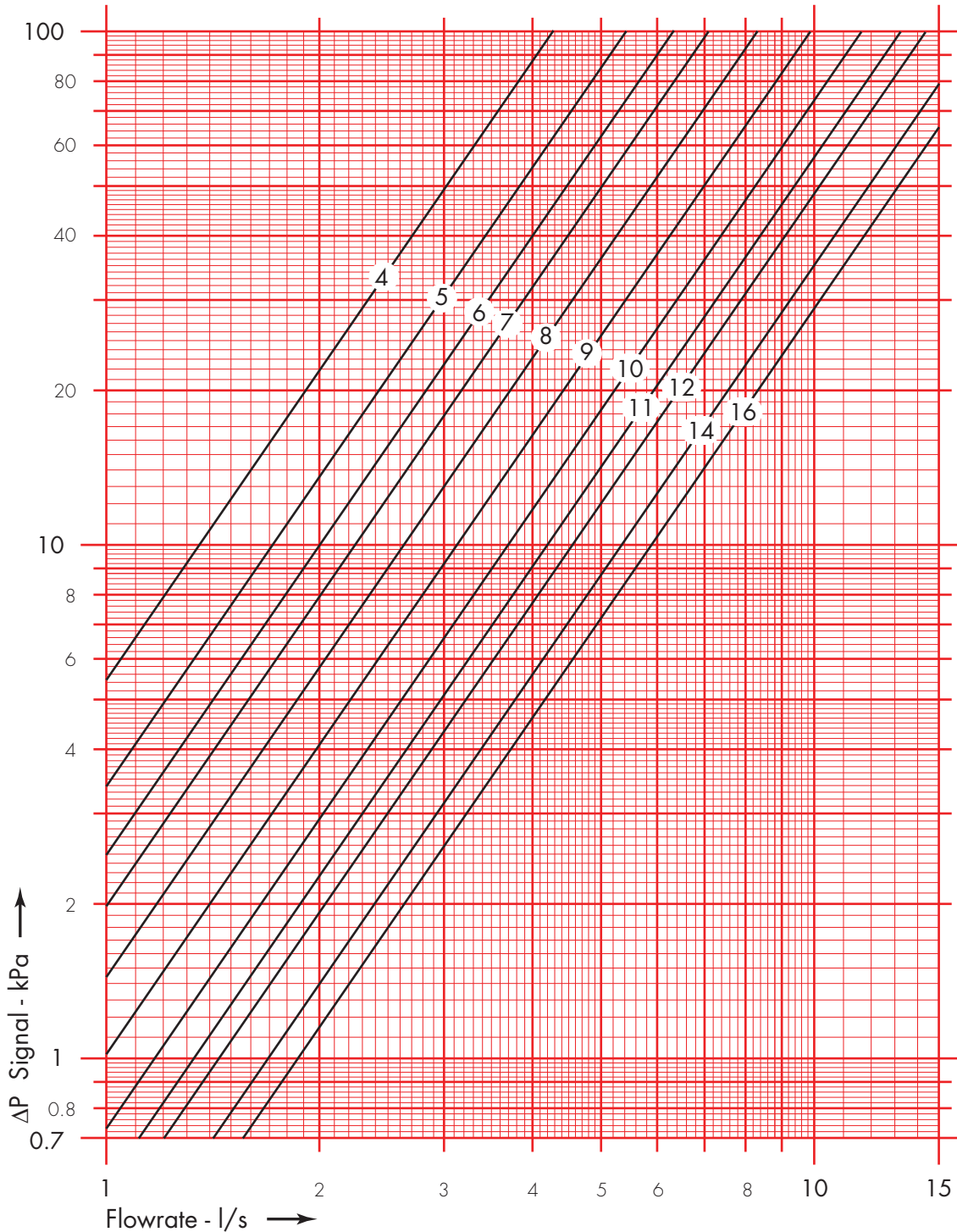
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 81

Dim. DN65

Position	4	5	6	7	8	9	10	12	14	16
Kv	15.4	19.5	22.8	25.5	30.0	35.6	42.1	51.6	60.8	66.9



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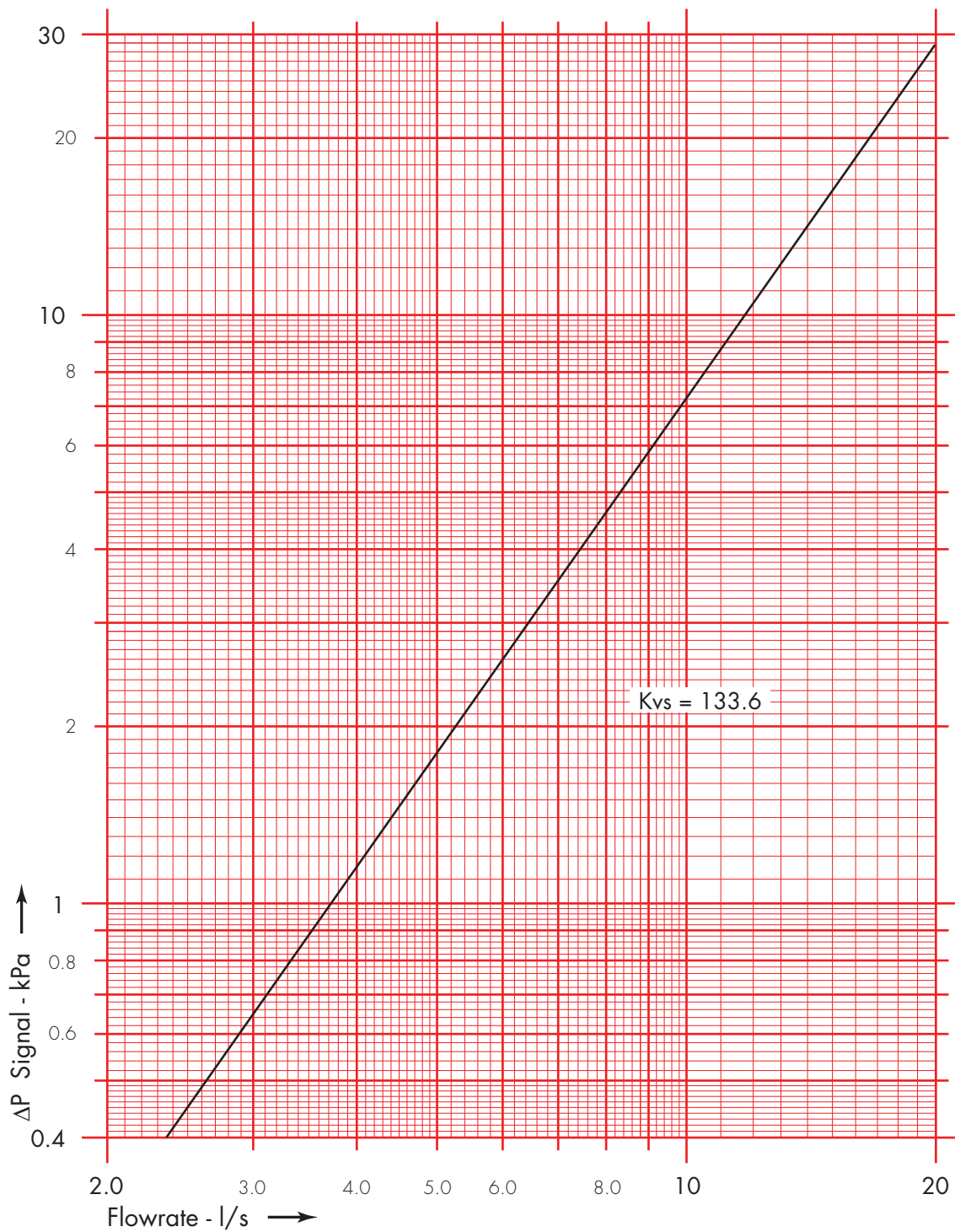
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 08	Dim. DN80



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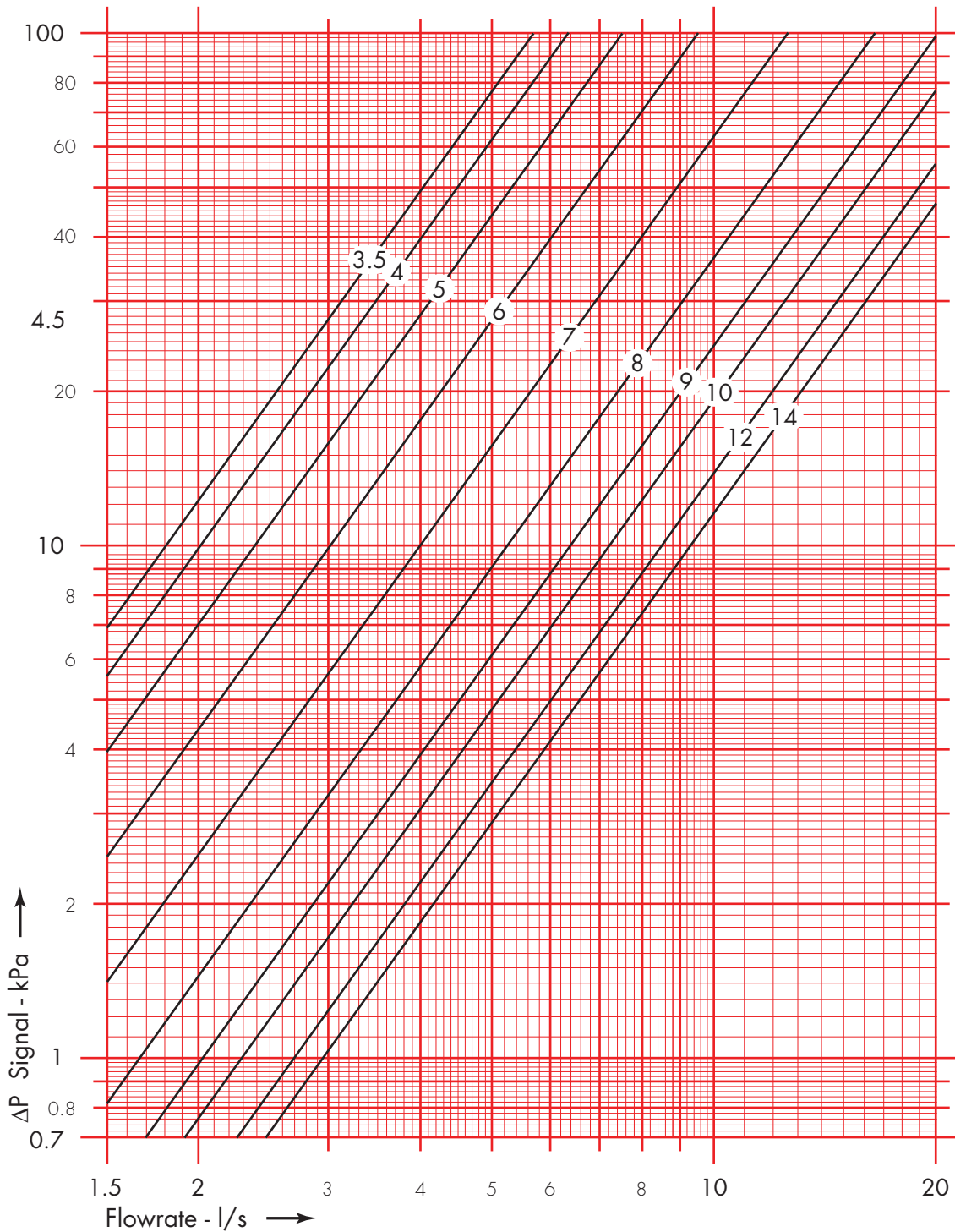
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 82

Dim. DN80

Position	3.5	4	5	6	7	8	9	10	12	14
Kv	20.6	22.9	27.1	34.4	45.5	59.9	72.7	82.1	96.7	107



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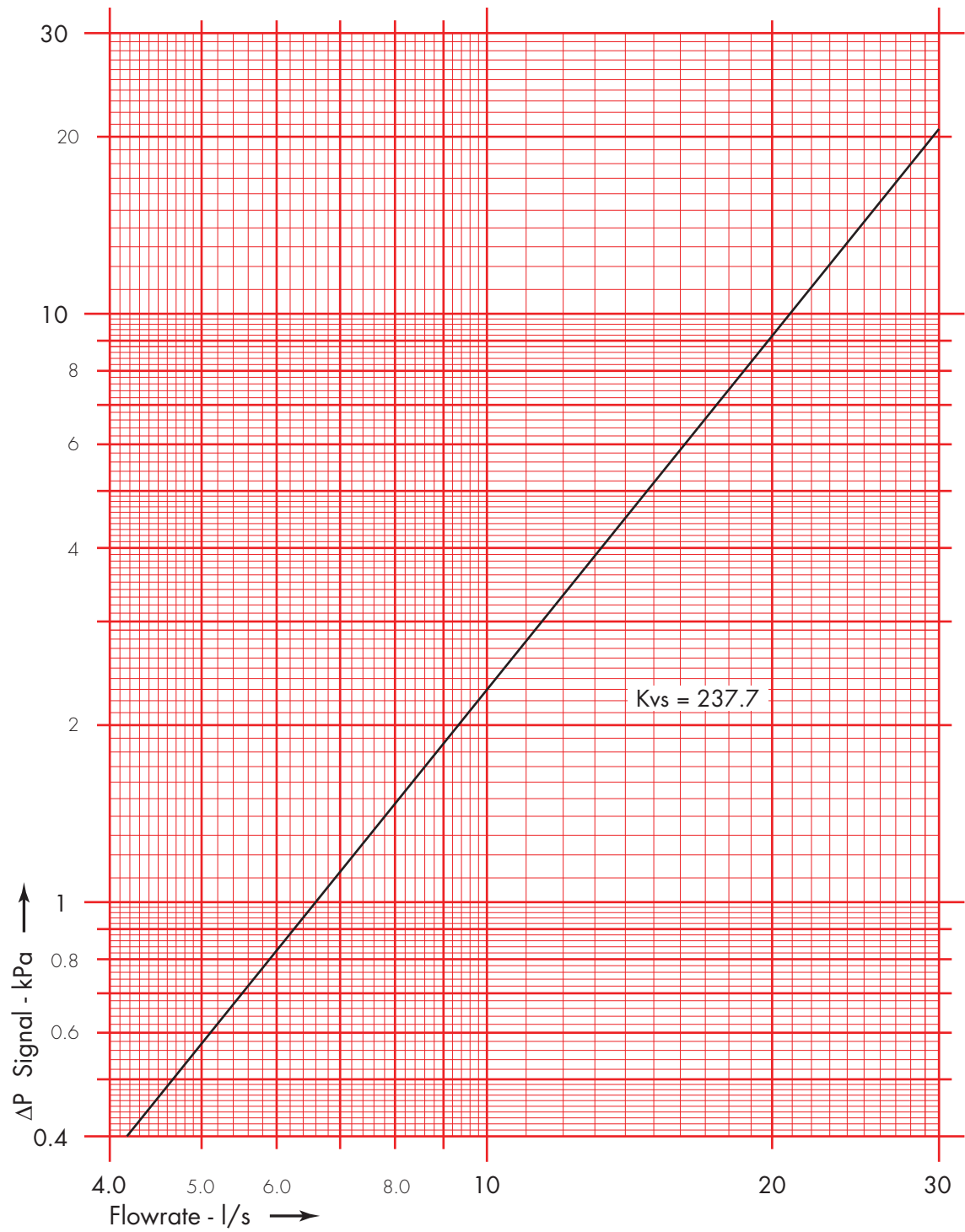
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 09	Dim. DN100



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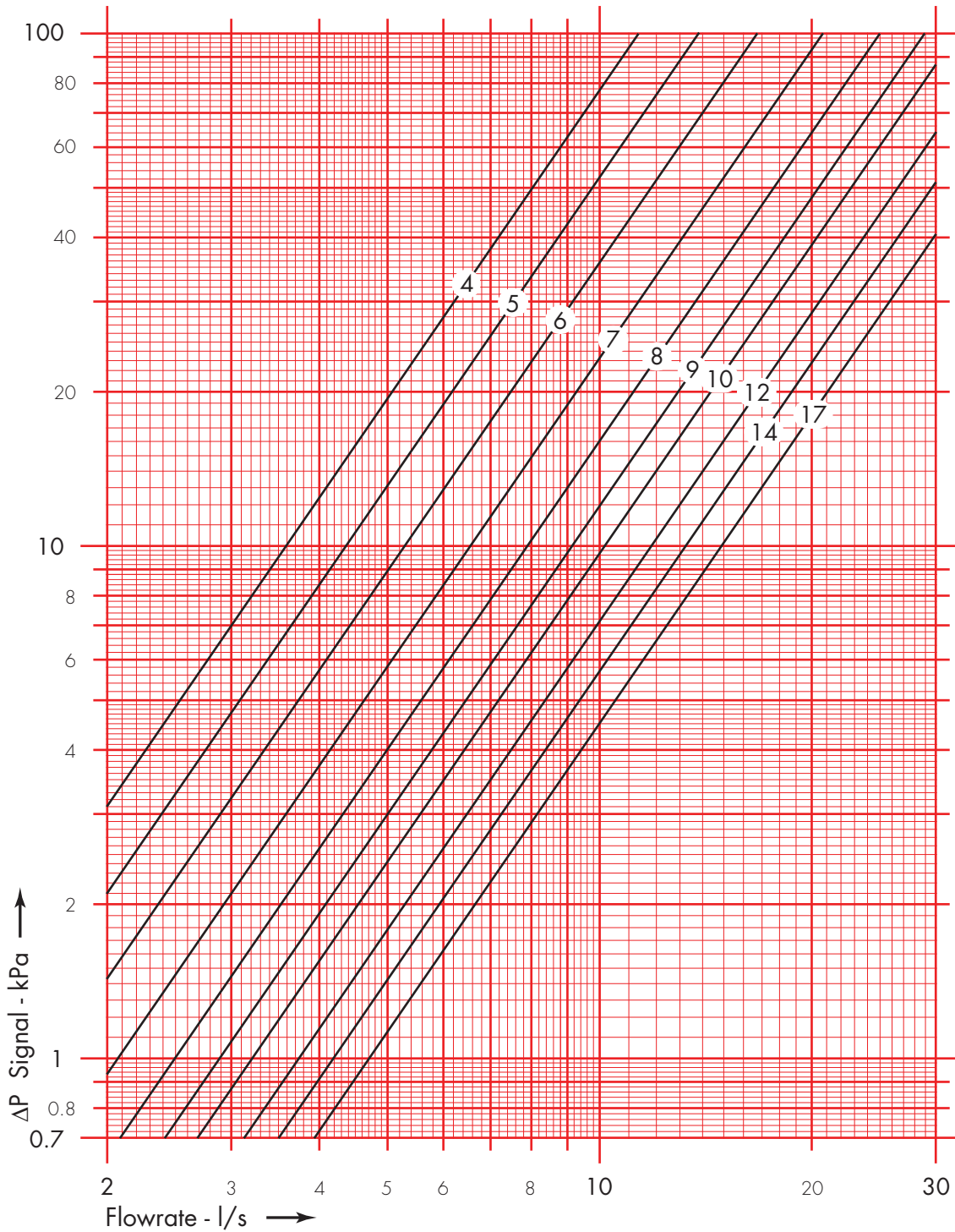
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 83

Dim. DN100

Position	4	5	6	7	8	9	10	12	14	17
Kv	40.9	49.7	60.3	74.7	90.0	104	116	135	151	169



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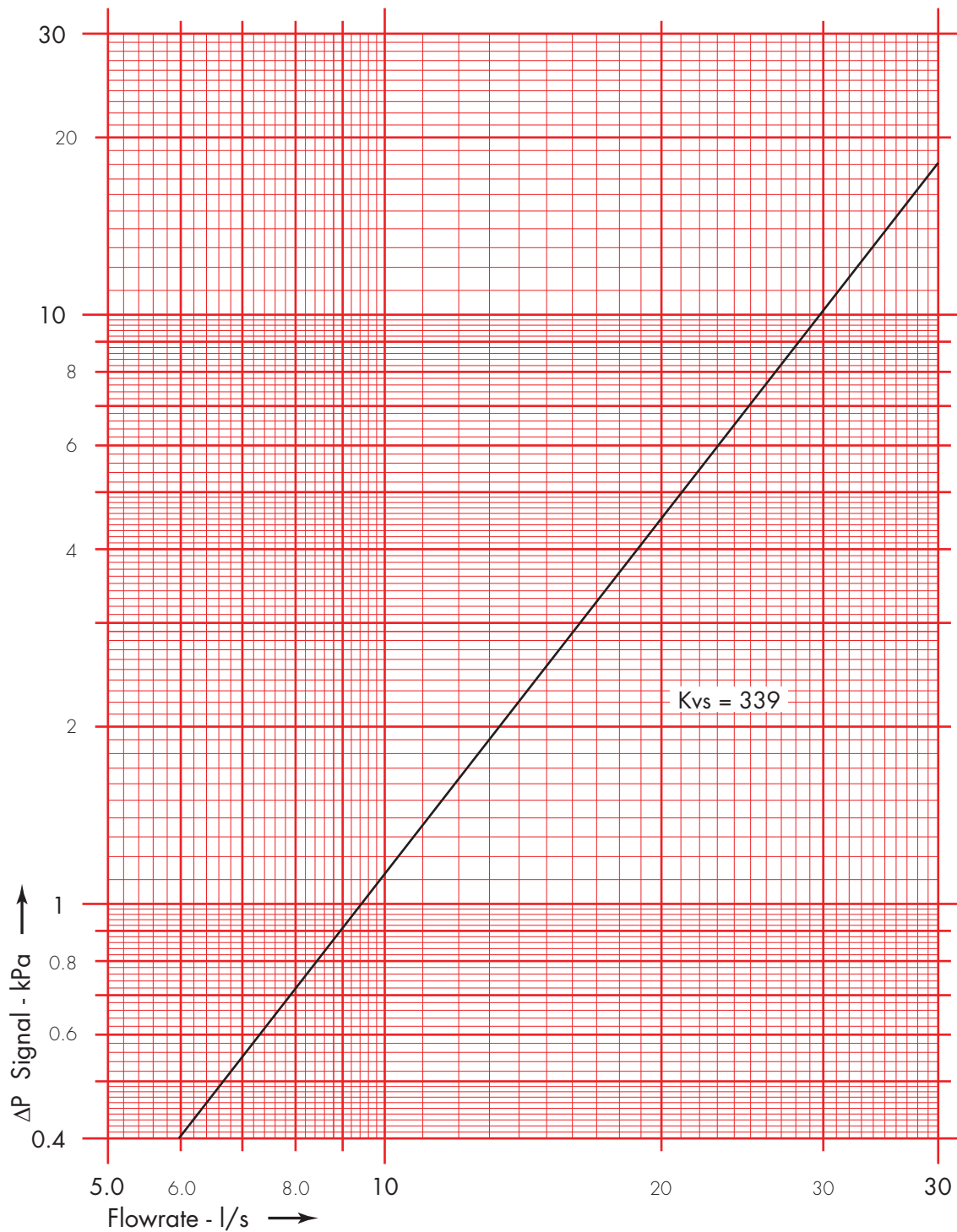
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 10	Dim. DN125



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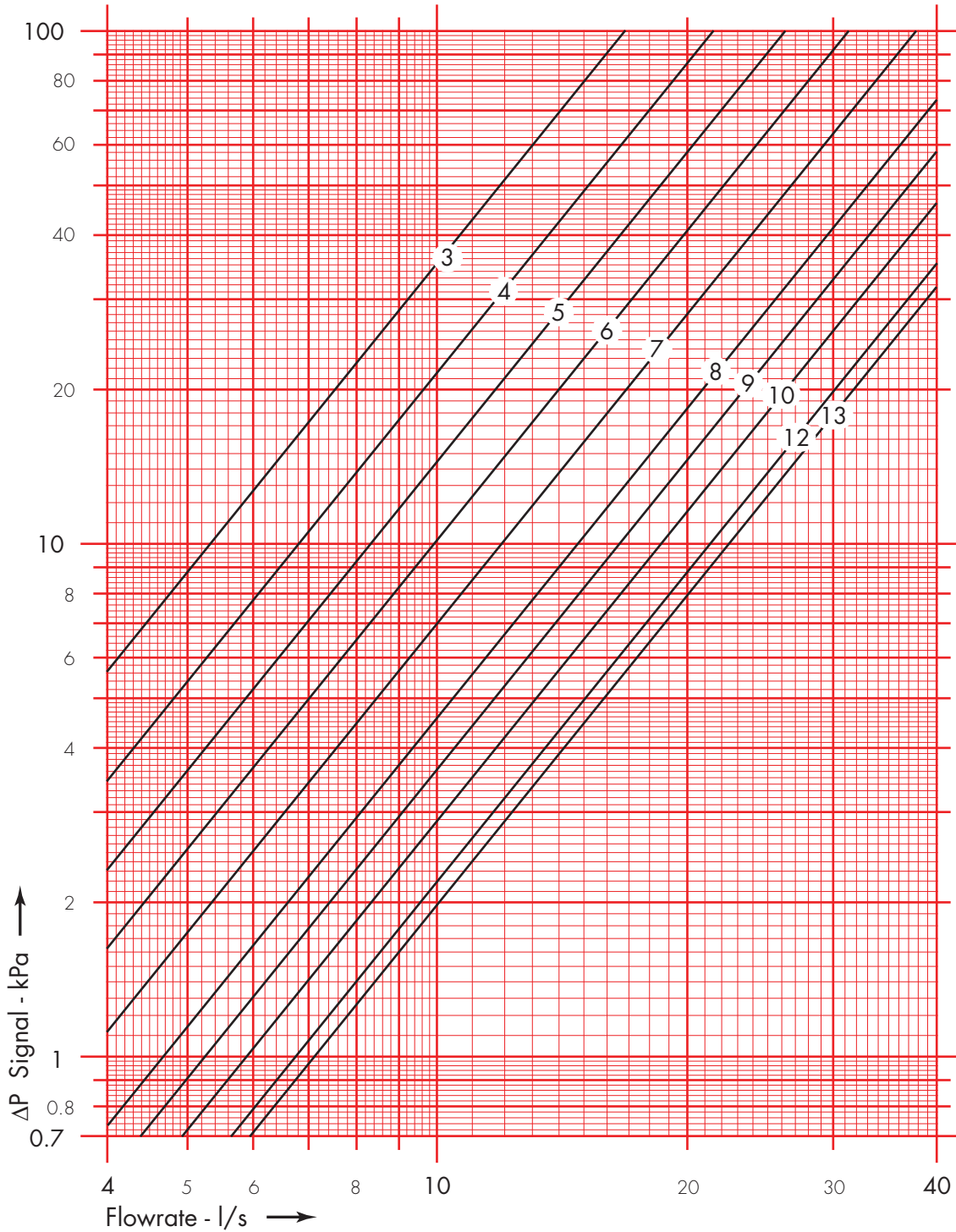
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 84

Dim. DN125

Position	3	4	5	6	7	8	9	10	13
Kv	60.7	77.5	94.8	113	136	168	189	212	256



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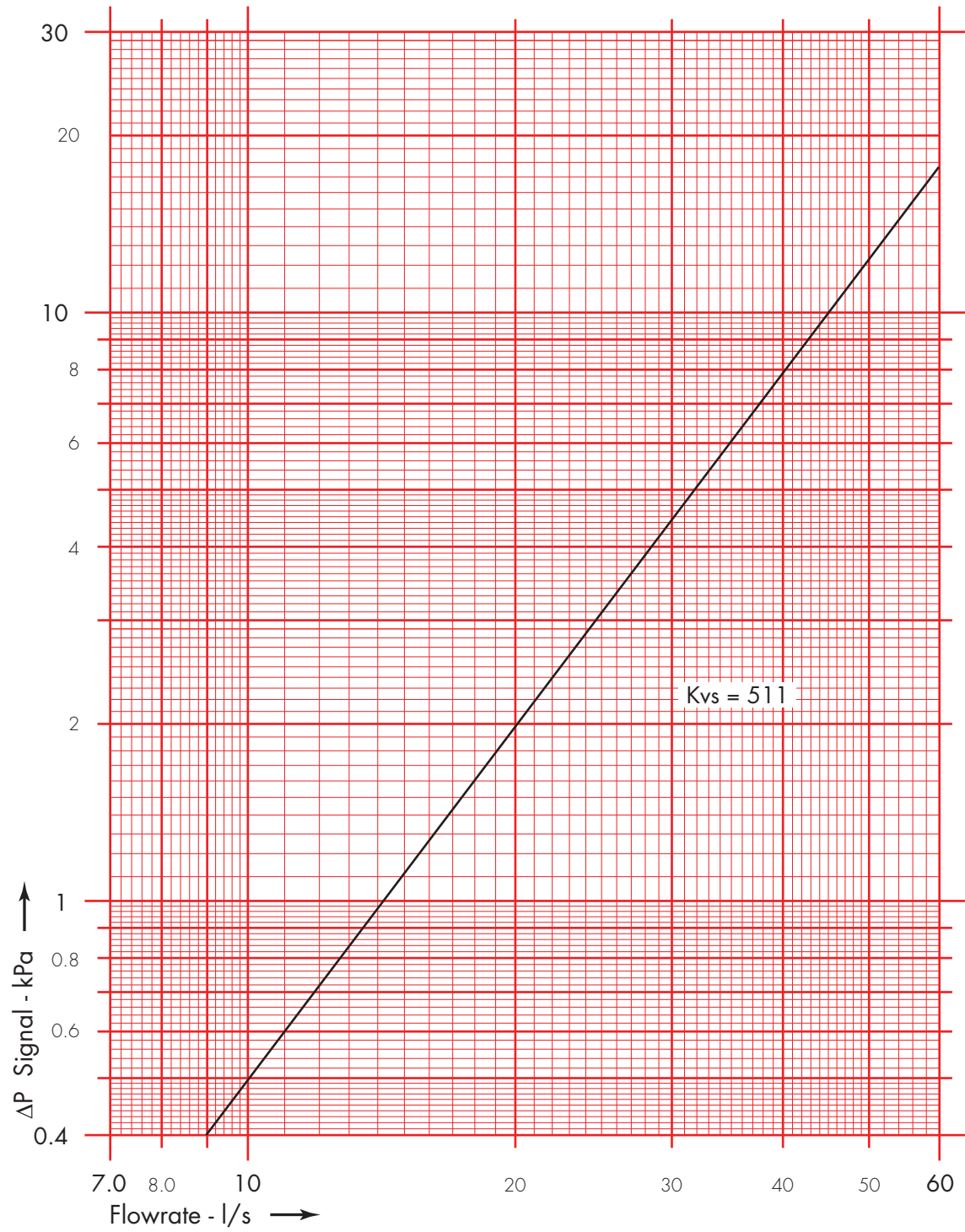
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 11	Dim. DN150



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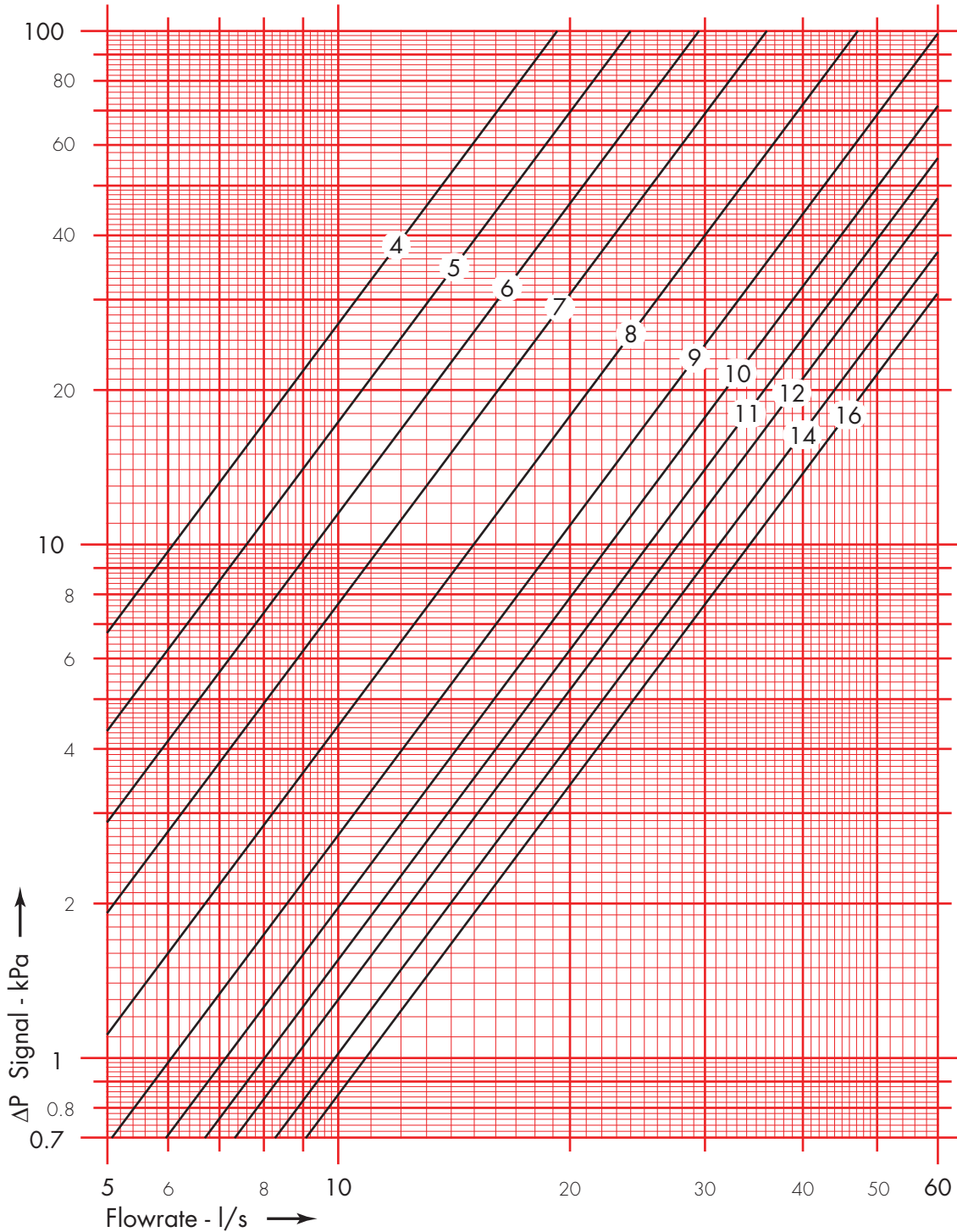
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 85

Dim. DN150

Position	4	5	6	7	8	9	10	12	14	16
Kv	69.3	88.3	106	130	170	218	256	315	355	390



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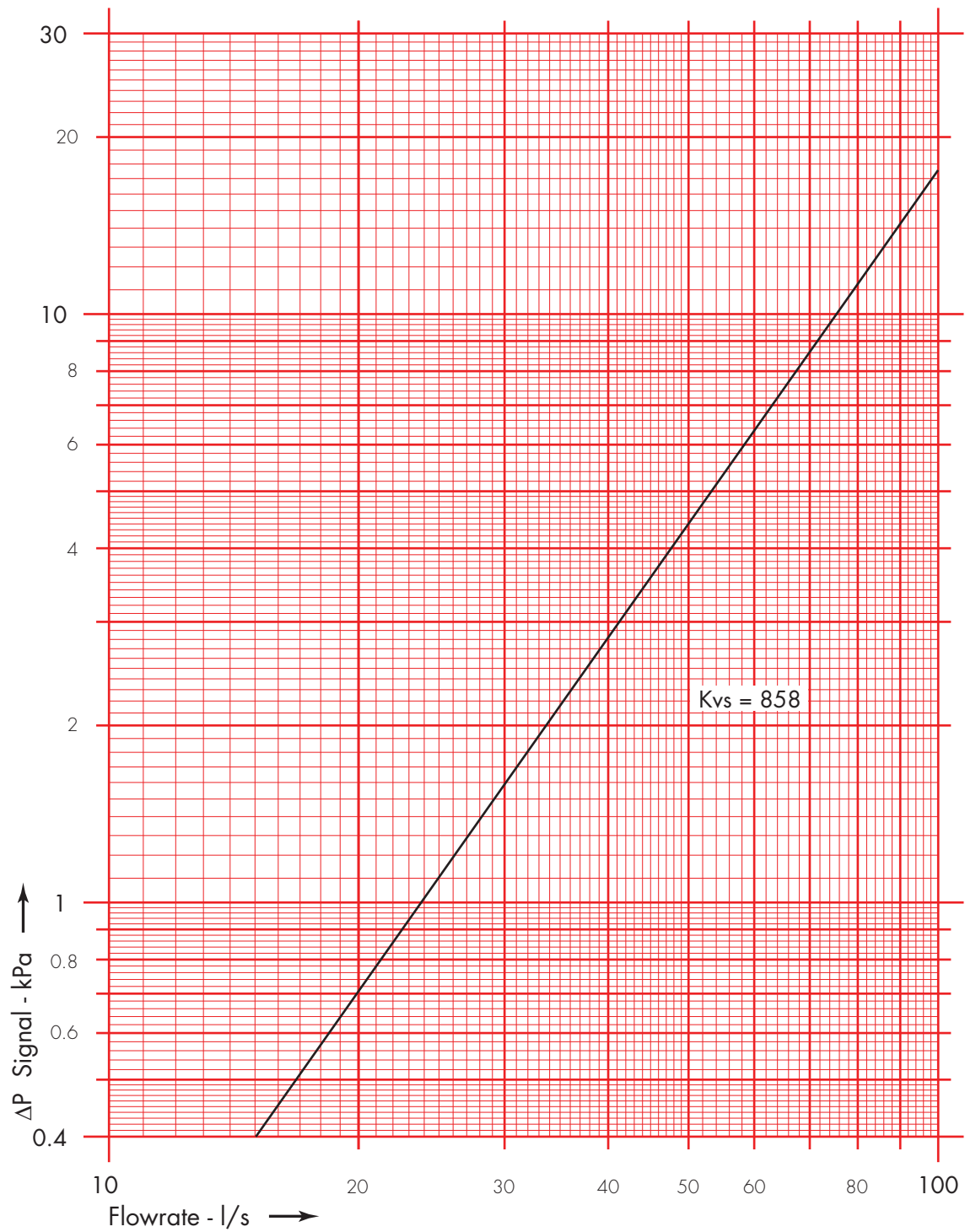
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 12	Dim. DN200



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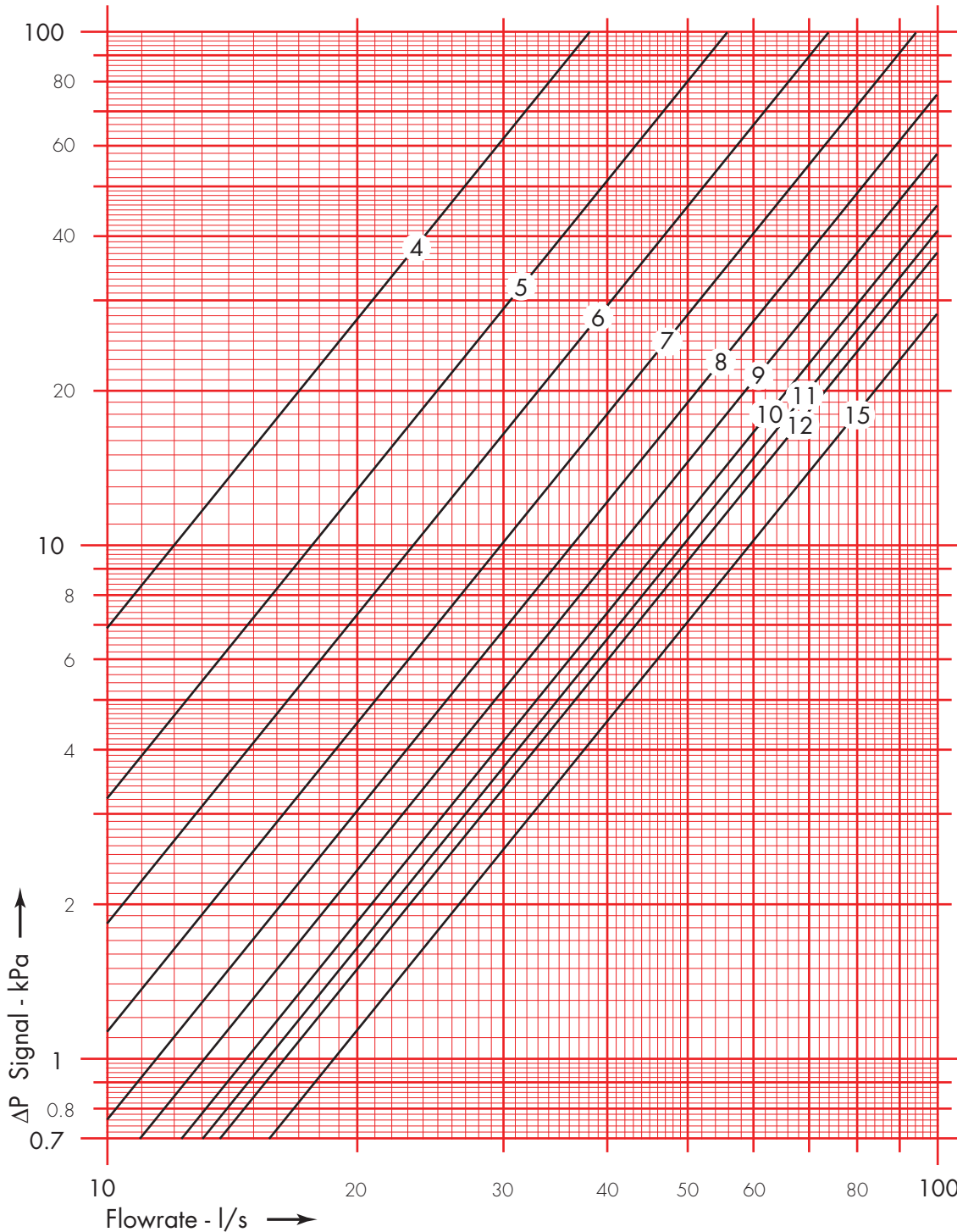
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 86

Dim. DN200

Position	4	5	6	7	8	9	10	11	12	15
Kv	137	201	266	339	413	472	531	561	591	676



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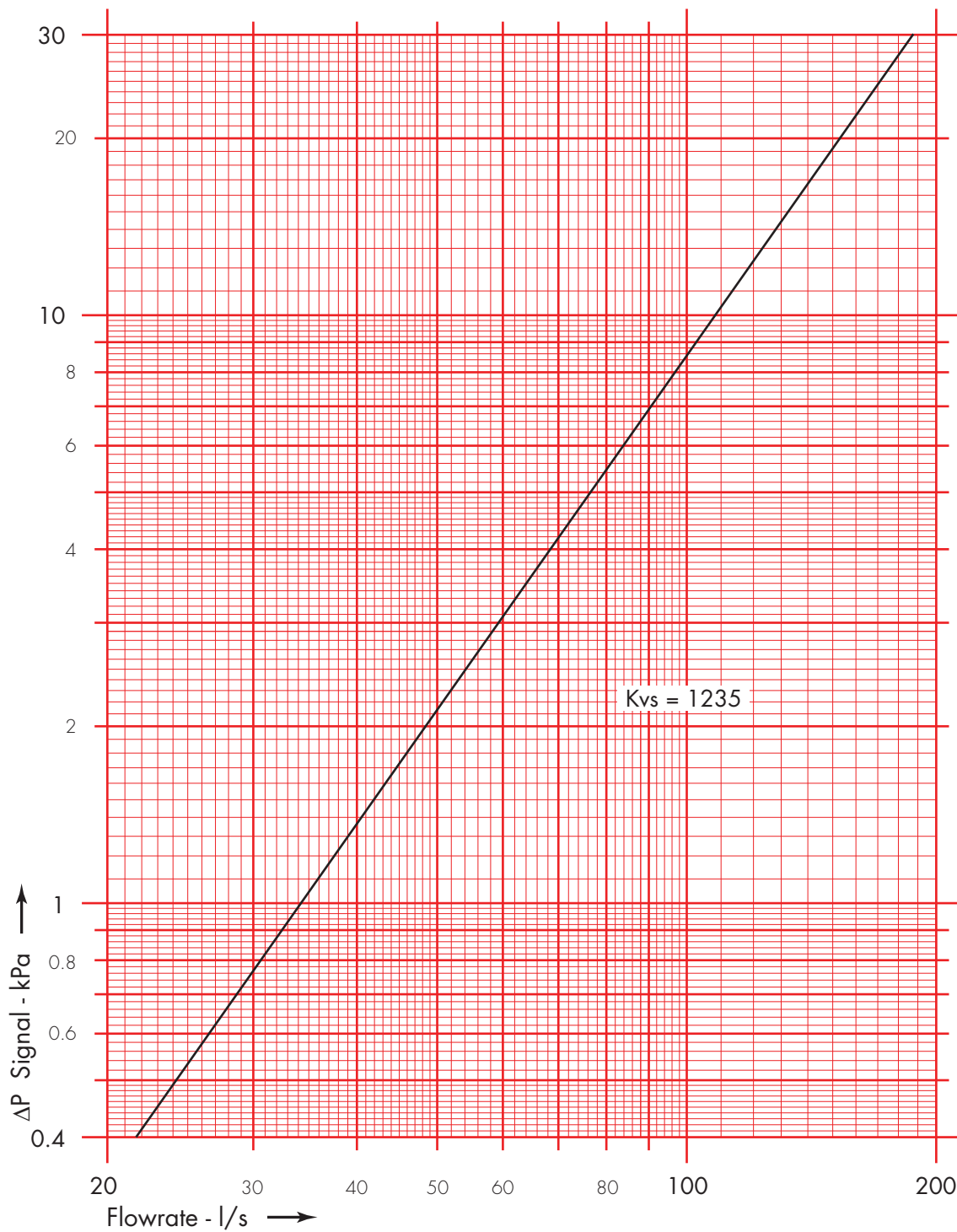
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 13	Dim. DN250



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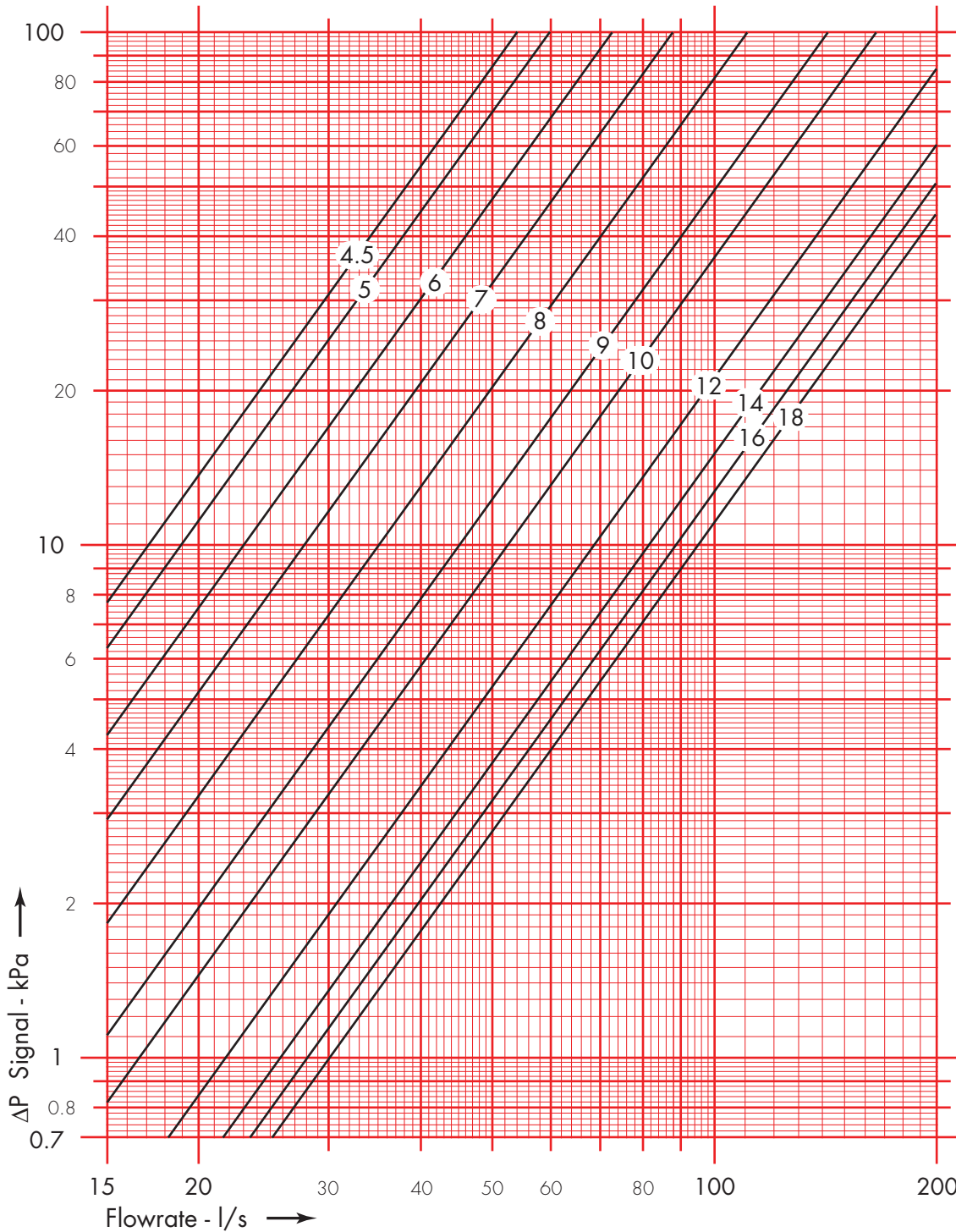
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 87

Dim. DN250

Position	4.5	5	6	7	8	9	10	12	14	18
Kv	195	216	263	317	400	513	597	781	928	1083



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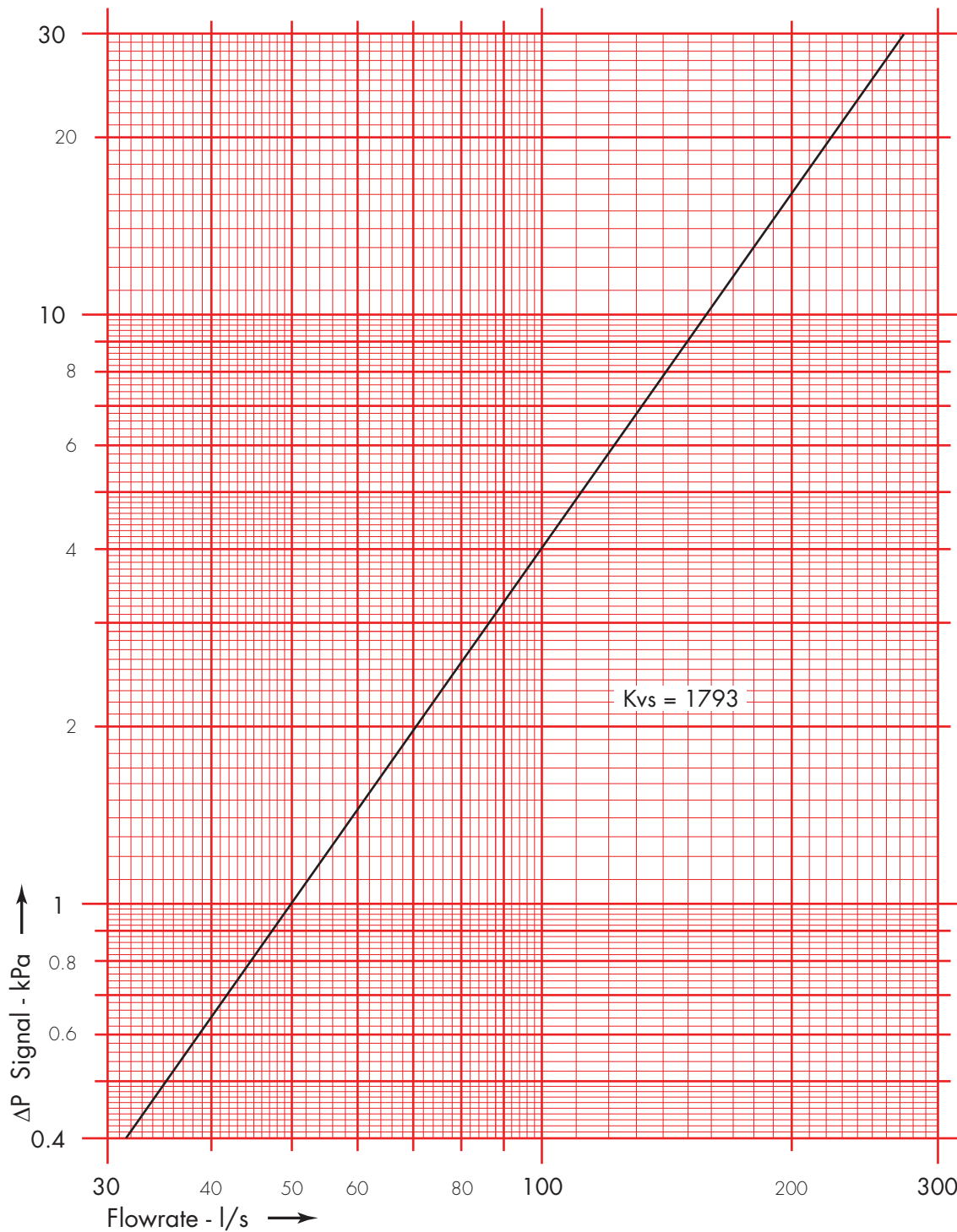
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HERZ - Flow data	Stainless Steel Orifice Plate
Art. HV <b>2740</b> - 14	Dim. DN300



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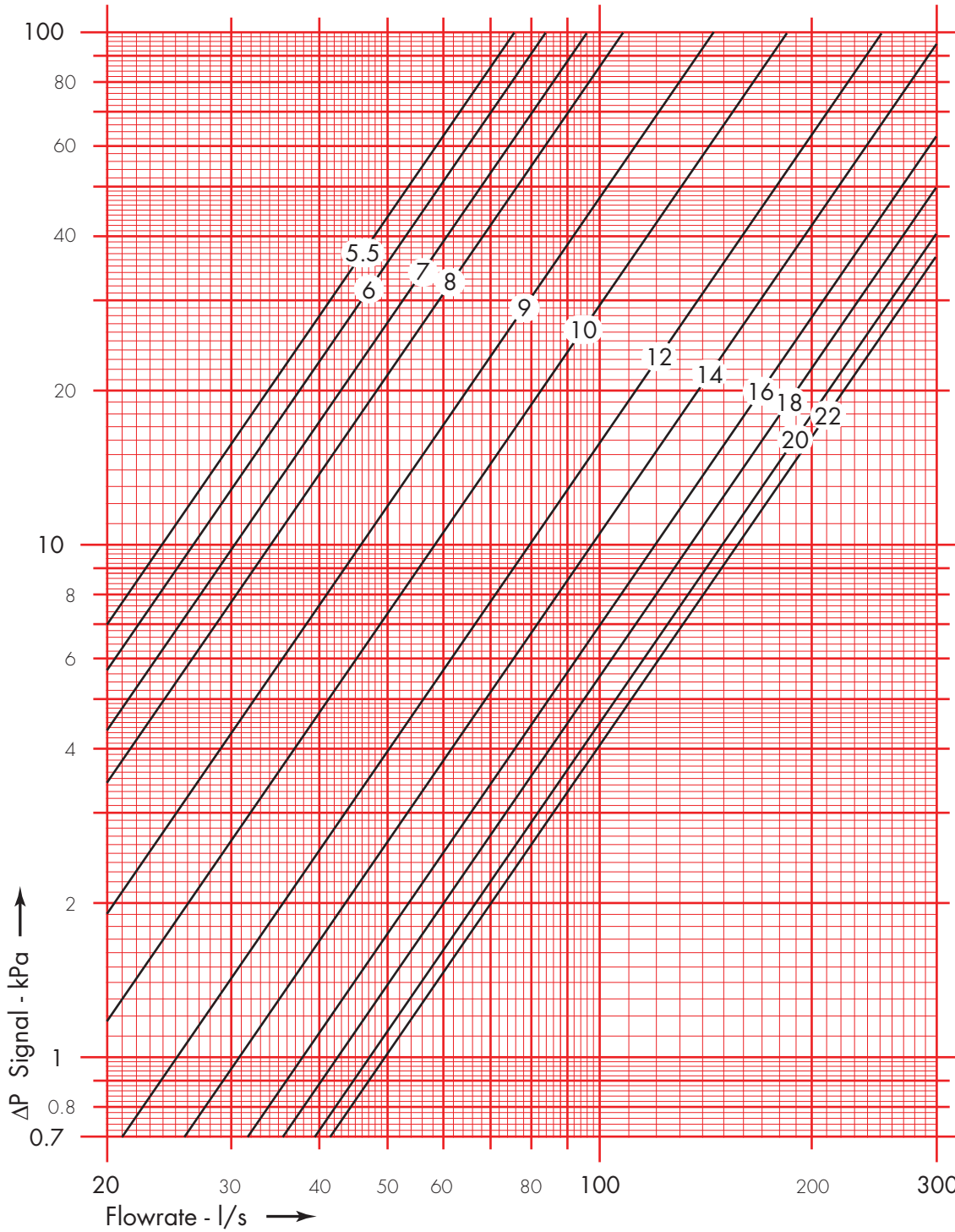
HERZ - Flow data - pressure drop

Double Regulating Valve

Art. **4218** - 88

Dim. DN300

Position	5.5	6	7	8	9	10	12	14	18	22
Kv	272	302	346	389	521	664	907	1111	1529	1785



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