

MAINTENANCE AND ENGINEERING | COURSE BROCHURE

Control Valves Sizing and Troubleshooting

5 days | Classroom training | English

SMART HORIZON

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Course content

Why attend

Control valves are the final elements in most control loops, and their performance directly affects process stability. This course covers control valve types, characteristics, sizing, cavitation and noise, actuators and positioners, valve diagnostics, common problems such as stiction and troubleshooting.

Poorly sized or maintained valves cause unstable control and wasted energy. You will learn to size, maintain and troubleshoot control valves.

Professional Problems This Course Is Designed to Solve

• Difficulty translating subject knowledge into practical workplace decisions.
• Inconsistent approaches to the activities covered in the course outline.
• Lack of a structured plan for applying and reviewing new skills.

Course methodology

Sizing calculations, diagnostic data interpretation, case studies and troubleshooting exercises.

Course objectives

By the end of this course, participants will be able to:
• Explain control valve types and characteristics
• Size control valves for given conditions
• Recognise cavitation, flashing and noise problems
• Select actuators and positioners
• Use valve diagnostics
• Troubleshoot common valve problems

Target audience

This course is suitable for:
• Instrument and control engineers
• Process engineers
• Maintenance technicians
• Valve specialists
• Plant operators



Course content

Target competencies

Participants will develop competencies in:

- Valve selection
- Sizing
- Diagnostics
- Troubleshooting
- Control loop awareness

Course outline

Day 1: Control Valve Basics

09:00–10:08	Valve types
10:08–11:00	Characteristics
11:00–11:30	**Coffee break**
11:30–11:45	Characteristics (continued)
11:45–12:53	Rangeability
12:53–14:00	Exercise

Day 2: Sizing

09:00–10:08	Flow coefficients
10:08–11:00	Sizing calculations
11:00–11:30	**Coffee break**
11:30–11:45	Sizing calculations (continued)
11:45–12:53	Software tools
12:53–14:00	Exercise

Day 3: Severe Service

09:00–10:08	Cavitation and flashing
10:08–11:00	Noise
11:00–11:30	**Coffee break**



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11:30–11:45	Noise (continued)
11:45–12:53	Special trims
12:53–14:00	Case study

Day 4: Actuators and Positioners

09:00–10:08	Actuator types
10:08–11:00	Smart positioners
11:00–11:30	**Coffee break**
11:30–11:45	Smart positioners (continued)
11:45–12:53	Diagnostics
12:53–14:00	Demonstration

Day 5: Troubleshooting

09:00–10:08	Stiction and deadband
10:08–11:00	Loop performance
11:00–11:30	**Coffee break**
11:30–11:45	Loop performance (continued)
11:45–12:53	Maintenance
12:53–14:00	Action plan

The timings provided are estimates and may vary depending on the number of participants and the discussions taking place during the sessions. They are indicative only and do not constitute a binding commitment.



Course content

Dates, venues and fees

Current published course plans. Fees are per participant in EUR, excluding unconfirmed taxes.

Venue	Start date	End date	Fee (EUR)
Dubai Confirmed dates	16 Nov 2026	20 Nov 2026	**€6,300.–**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**€1,250.–**
Istanbul Confirmed dates	7 Dec 2026	11 Dec 2026	**€5,300.–**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**€1,250.–**
Rome Confirmed dates	11 Jan 2027	15 Jan 2027	**€4,900.–**
Online Confirmed dates	11 Jan 2027	15 Jan 2027	**€1,250.–**
Dubai Confirmed dates	1 Feb 2027	5 Feb 2027	**€6,300.–**
Online Confirmed dates	1 Feb 2027	5 Feb 2027	**€1,250.–**
Kuala Lumpur Confirmed dates	22 Feb 2027	26 Feb 2027	**€2,900.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	22 Feb 2027	26 Feb 2027	**€1,250.–**
Frankfurt Confirmed dates	8 Mar 2027	12 Mar 2027	**€5,300.–**
Online Confirmed dates	8 Mar 2027	12 Mar 2027	**€1,250.–**
Cape Town Confirmed dates	29 Mar 2027	2 Apr 2027	**€3,780.–**
Online Confirmed dates	29 Mar 2027	2 Apr 2027	**€1,250.–**
Rome Confirmed dates	19 Apr 2027	23 Apr 2027	**€4,900.–**
Online Confirmed dates	19 Apr 2027	23 Apr 2027	**€1,250.–**
London Confirmed dates	10 May 2027	14 May 2027	**€4,900.–**
Online Confirmed dates	10 May 2027	14 May 2027	**€1,250.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Barcelona Confirmed dates	31 May 2027	4 Jun 2027	**€5,680.–**
Online Confirmed dates	31 May 2027	4 Jun 2027	**€1,250.–**
Rome Confirmed dates	14 Jun 2027	18 Jun 2027	**€4,900.–**
Online Confirmed dates	14 Jun 2027	18 Jun 2027	**€1,250.–**
London Confirmed dates	5 Jul 2027	9 Jul 2027	**€4,900.–**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**€1,250.–**
Dubai Confirmed dates	26 Jul 2027	30 Jul 2027	**€6,300.–**
Online Confirmed dates	26 Jul 2027	30 Jul 2027	**€1,250.–**
Cape Town Confirmed dates	16 Aug 2027	20 Aug 2027	**€3,780.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	16 Aug 2027	20 Aug 2027	**€1,250.-**
Barcelona Confirmed dates	6 Sept 2027	10 Sept 2027	**€5,680.-**
Online Confirmed dates	6 Sept 2027	10 Sept 2027	**€1,250.-**
Vienna Confirmed dates	20 Sept 2027	24 Sept 2027	**€5,880.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**€1,250.-**
Cape Town Confirmed dates	11 Oct 2027	15 Oct 2027	**€3,780.-**
Online Confirmed dates	11 Oct 2027	15 Oct 2027	**€1,250.-**
Vienna Confirmed dates	1 Nov 2027	5 Nov 2027	**€5,880.-**
Online Confirmed dates	1 Nov 2027	5 Nov 2027	**€1,250.-**



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Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Paris Confirmed dates	22 Nov 2027	26 Nov 2027	**€5,720.-**
Online Confirmed dates	22 Nov 2027	26 Nov 2027	**€1,250.-**
Amsterdam Confirmed dates	13 Dec 2027	17 Dec 2027	**€5,080.-**
Online Confirmed dates	13 Dec 2027	17 Dec 2027	**€1,250.-**

Plan your next step

Dates, availability, exact venue, taxes, inclusions and payment terms require written confirmation. This brochure is not a quotation, registration, booking confirmation or visa invitation. Participants receive a Smart Horizon certificate of attendance; programmes are not externally accredited and do not award a professional qualification or designation. Confirm arrangements before booking travel.

For group or in-house training, contact our learning team to discuss your objectives and delivery arrangements.

Contact Smart Horizon

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