

Modulated Level Control Valve

SKV 3400

Installation and Operating Instructions

EN

English

CONTENT

1.SAFETY INFORMATION	II
2.GENERAL INFORMATION.....	1
2.1 Description	1
3.TECHNICAL SPESIFICATONS	2
3.1 SKA 3200 Level Control Valve Actuator	2
3.2 SKV 3400 Level Control Valve	2
4.INSTALLATION AND WIRING	4
4.1 Installation	4
4.2 Wiring	5
5.COMMISSIONING	5
6.MAINTANANCE	7

1. SAFETY INFORMATION

Installation, commissioning and maintenance of this device must be done by a qualified personnel in compliance with the operating instructions. Otherwise device and related equipments may be damaged and personnel may be injured. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

National and local regulations must be taken into consideration.



Warning!

Please make sure to remove the main supply before installation. Otherwise this may cause damage to the product, personal injuries or even death

1.1 Tools

Before starting work, make sure that you have suitable tools and consumables available.

1.2 Temperature

Let the temperature to cool down after isolation to avoid danger of burns.

1.3 Freezing

Required precautions must be taken at the places where they may be exposed to temperatures below freezing point.

1.4 Lighting

Make sure there is enough lighting, particularly where detailed or tough work is required.

1.5 Pressure

Make sure that any pressure is isolated and safely vented to atmospheric pressure. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.6 Access

Before attempting to work on the product, safe Access must be ensured. If necessary, lifting gear should be used.

1.7 Residual hazards

The external surface of the product may be very hot. If used at the maximum operating conditions according to the specs, the surface temperature of some products may reach temperatures of 239°C.

1.8 Hazardous environment

Plant rooms are usually explosion risk areas. There may be lack of oxygen, dangerous gases extremes of temperature, hot surfaces, fire hazard excessive noise, moving machinery.

1.9 Suitable protective clothing

In order to be protected against the hazards of chemicals, high temperature, radiation, noise, falling objects, and dangers to eyes and face, anyone around requires protective clothing suitable in the plant room.

1.10 Hazardous liquids or gases

Be aware of that it cannot be known what may have been in the pipeline at previous usage. Consider: flammable materials, substances hazardous to health, extremes of temperature.

1.11 Supervision

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Operation Instructions.

1.12 Disposal

Unless otherwise stated in the Installation and Operation Instructions, this product is recyclable and no ecological hazard.

1.13 Returning products

When returning products to Vira Isı ve Endüstriyel Ürünler A.Ş the customers must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk.

2.GENERAL INFORMATION

2.1 Description

As steam is generated, the water in the boiler evaporates and water must be added with a feed water pump to maintain the level of the boiler. Water should be kept at the right level to avoid damaging the boiler and to ensure efficient operation.

For this reason, a level control system that monitors and controls the water level, detects whether the water level is low and gives an alarm, performs the necessary actions to shut off the feed water pump or burner.

Of course, it is recommended to have an external indicator, such as level gauges, to see the water level step by step. Another suggestion is to have a secondary level control system in case of damage to the primary one.

In the modulating level control system, the feed pump runs continuously and an automatic valve (between the feed pump and the boiler) controls the feed water flow rate to meet the steam demand.

Level Controller SK 3400, Capacitance Level Probe SD 3400 and Level Control Valve SKV 3400 working in conjunction with the capacitance principle of conductive liquids provides level control. The controller and probe are suitable for use in liquids of all different properties such as water, condensate, boiler water. The Modulating Level Control System can be used in waters with a conductivity of more than $10 \mu\text{S} / \text{cm}$ (at 25°C).

In the Modulating Level Control System, the water level of the boiler is controlled by opening and closing the SKV 3400 Level Control Valve SKV 3400 at the water levels determined by the Capacitance Level Probe SD 3400. There are also two different alarm outputs, low and high.

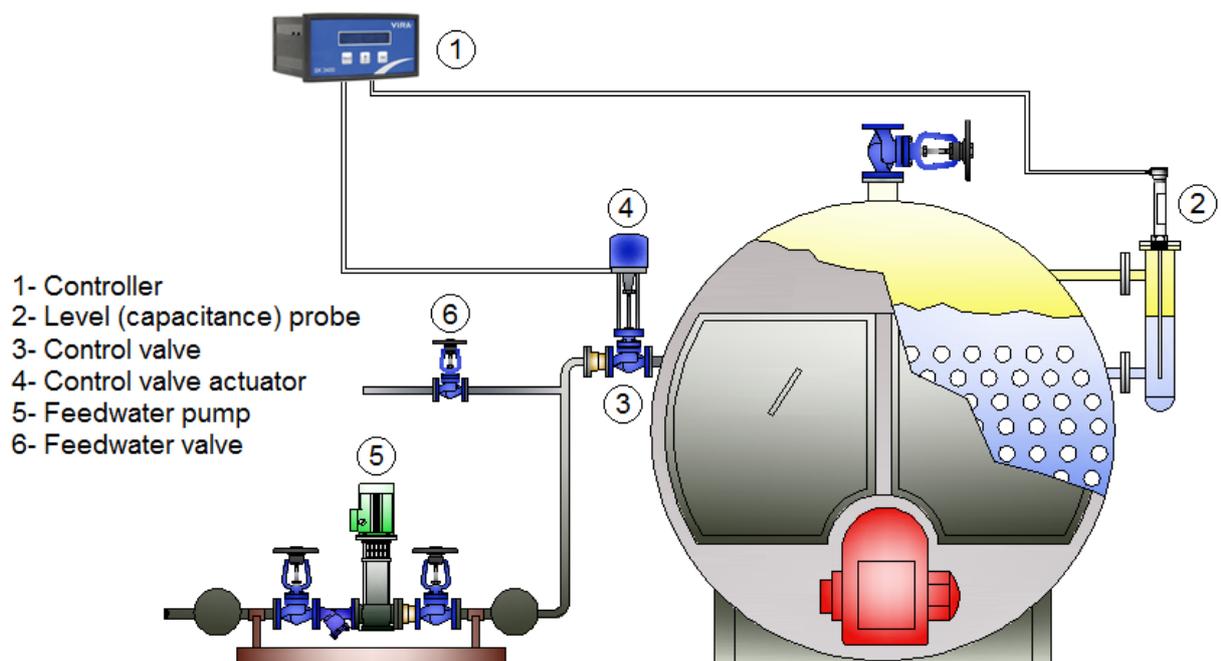


Figure 1: Modulating Level Control System Application

3. TECHNICAL SPECIFICATIONS

3.1. SKA 3200 Level Control Valve Actuator

Enclosure	: IP 65
Maximum ambient temperature	: 60 °C
Main supply voltage	: 220 V
Frequency	: 50 Hz
Maximum power consumption	: 26 VA
Weight	: 7 kg

Voltage Force	220 V AC	110 V AC	24 V DC
1,0 kN	SKA 3211	SKA 3212	SKA 3213
2,3 kN	SKA 3221	SKA 3222	SKA 3223
4,5 kN	SKA 3241	SKA 3242	SKA 3243
8,0 kN	SKA 3281	SKA 3282	SKA 3283

3.2. SKV 3400 Level Control Valve

Maximum operating temperature	: 200°C
Maximum operating pressure	: 20 bar g
Nominal pressure	: PN 25 (ask for other pressure classes)
Valve body	: Nodular cast iron
Connection	: DN 25-50, Flanged
Weight	: 4 kg

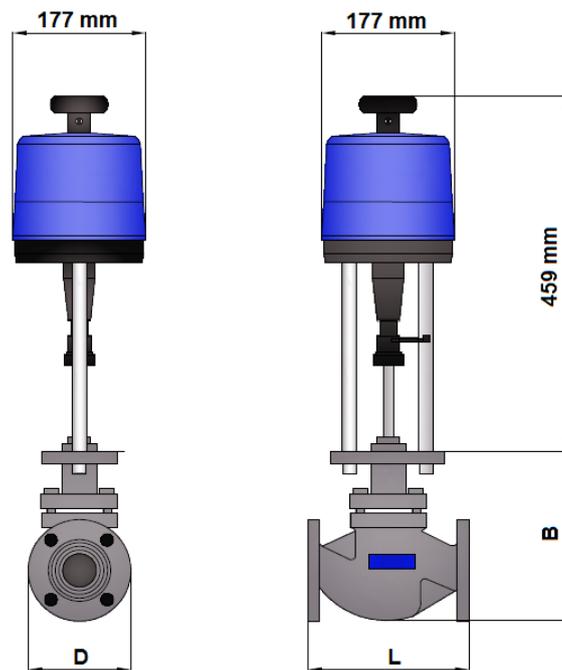


Figure 2: SKV 3400 Level Control Valve Dimensions

Type	Size	D (mm)	L (mm)	B (mm)
SKV 3425	DN 25	115	160	122
SKV 3432	DN 32	140	180	147
SKV 3440	DN 40	150	200	157
SKV 3450	DN 50	165	230	172

4. INSTALLATION AND WIRING

4.1. Installation

Valve can be installed vertically or canted maximum 90° left or right. It must not be installed upside down (Figure 3). Pay attention to arrow mark located on the valve body which shows direction of water flow.

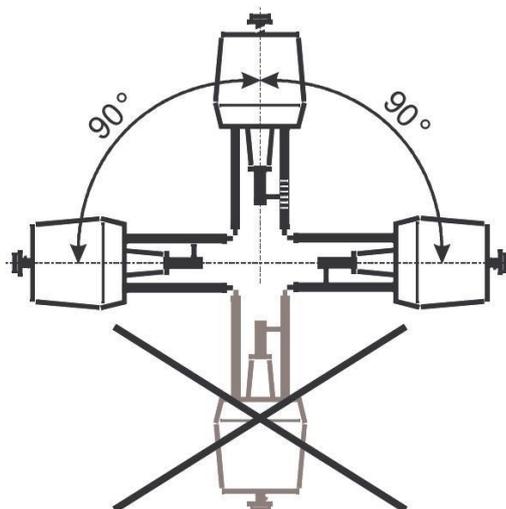


Figure 3: Installation Positions of SKV 3400 Level Control Valve

4.2 Wiring

For wiring, actuator cover must be removed. To remove it, firstly use an allen wrench to remove hand lever (Figure 4). Then pull up the actuator cover.

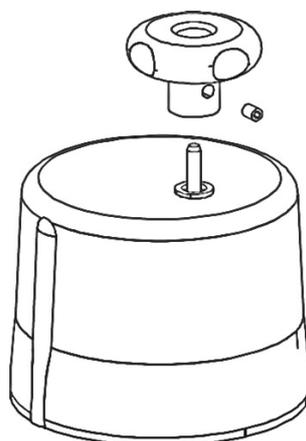


Figure 4: Removing Actuator Cover

For wiring of data terminals (4, 5) 2x1 mm² screened (shielded) cable and for control terminals (16, 17, 18) 3x1 mm² normal cable can be used. Valve potentiometer cable screen (shield) must be only connected to 4th terminal of controller (Figure 5). **Valve potentiometer (actuator) side of the screen must be left unconnected.**

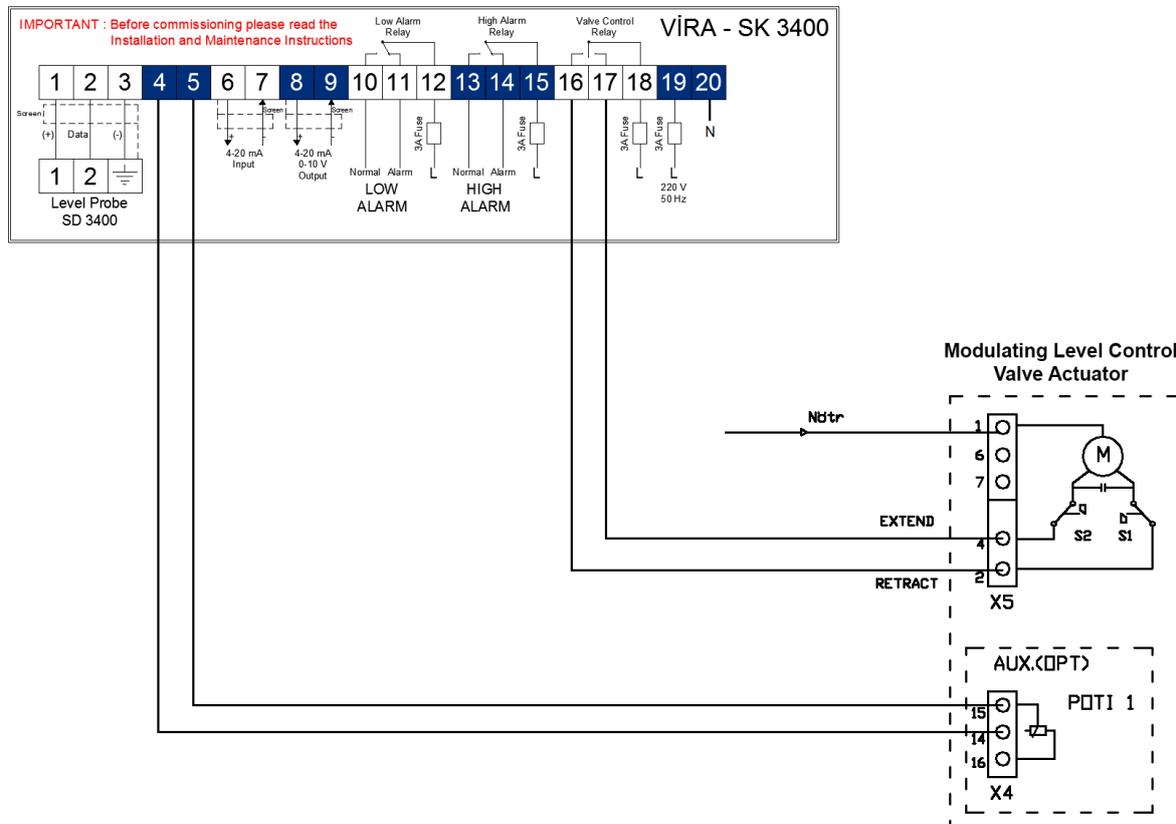


Figure 3: SKA 3200 Level Control Valve Actuator Wiring Diagram

Information

Data terminals (4, 5): Used to transfer valve openness percentage data from valve potentiometer to controller. Must be used screened (shielded) cable for wiring of data terminals.

Control Terminals (16, 17, 20): Used to open or close the valve.

5. COMMISSIONING

- Be sure that all cables are connected to the right terminals.

- Before commissioning make sure that valve is fully closed.

6. MAINTENANCE



Warning!

Please make sure to remove the main supply of actuator before displace the valve. Otherwise this may cause damage to the product, personal injuries or even death.

The device may not be repaired and / or maintained except by authorized service personnel. If necessary, please contact '**Vira Isi Service Department**'.

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