



## LMV2... / LMV3...

**Ionization current supervision with burner controls operating on AC 120 V**

## User Documentation

**LMV2... / LMV3... and this User Documentation are intended for use by OEMs which integrate the LMV2... / LMV3... in their products!**



### Note!

This documentation is only valid together with LMV2... / LMV3... Basic Documentations!

# Contents

1	Supplementary documentation .....	2
2	Warning notes .....	2
3	Typographical conventions .....	3
3.1	Safety notes .....	3
4	Ionization current supervision with burner controls operating on AC 120 V .....	4
5	Function.....	4
6	Specification of transformer .....	5
7	Notes on safety .....	5

## 1 Supplementary documentation

Environmental Declaration LMV2... / LMV3.....	E7541
Data Sheet LMV27.100.....	N7541
Basic Documentation LMV26... / AGM60.....	P7547
Basic Documentation LMV27.100.....	P7541
Basic Documentation LMV36.520x1 / AGM60.4x9 .....	P7544
Basic Documentation LMV37.4.....	P7546
Product Range Overview LMV2... / LMV3.....	Q7541

## 2 Warning notes



### **Danger!**

**The safety, warning and technical notes given in the Basic Documentations on the LMV2... / LMV3... apply fully to the present document also!**

**To avoid injury to persons, damage to property or the environment, the warning notes must be observed!**

**The LMV2... / LMV3... are safety devices! Do not open, interfere with or modify the unit. Siemens does not assume responsibility for damage resulting from unauthorized interference!**

# 3 Typographical conventions

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## 3.1 Safety notes

This User Documentation contains instructions which must be observed to ensure your own personal safety and to prevent damage to equipment and property. The instructions and notes are highlighted by warning triangles, arrows or a hand symbol and are presented as follows, depending on the hazard level:



### Danger

means that death, severe personal injury or substantial property damage **will** occur if adequate precautionary measures are not taken.



### Note

draws your attention to **important information** on the product, on product handling, or to a special part of the documentation.

### Qualified staff

Only **qualified staff** is allowed to install and operate the equipment. Qualified staff in the context of the safety-related notes contained in this document are persons who are authorized to commission, ground and tag devices, systems and electrical circuits in compliance with established safety practices and standards.

### Correct use

*Note the following:*

The device may only be used on the applications described in the technical documentation and only in connection with devices or components from other suppliers that have been approved or recommended by Siemens.

The product can only function correctly and safely if shipped, stored, set up and installed correctly, and operated and maintained as specified.

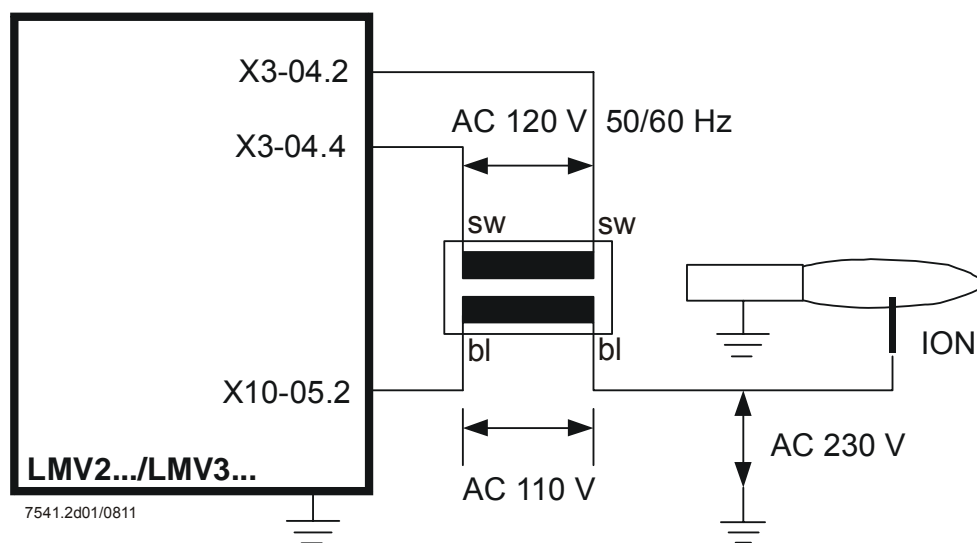
## 4 Ionization current supervision with burner controls operating on AC 120 V

Since the ionization current with burner controls operating on AC 120 V is only about 50 % of those operating on AC 230 V, certain applications make it necessary to increase the ionization current with a transformer.

## 5 Function

The conductivity and rectifying effect of hot flame gases are used for flame supervision. For that purpose, AC voltage is applied to the heat-resistant ionization probe which projects into the flame. The current that flows in the presence of a flame (ionization current) produces the flame signal which is fed to the input of the flame signal amplifier. The amplifier is designed such that it only responds to the DC current component of the flame signal, thereby ensuring that a short-circuit between ionization probe and ground cannot simulate a flame signal (since in that case AC current would flow).

When the transformer is connected in series with the ionization probe, voltage at the probe is increased by the transformer's secondary voltage. This results in a higher ionization current with no change of the flame's resistance. Evaluation of ionization current supervision is maintained. The transformer raises the voltage at the probe symmetrically.



### Legend

sw black

bl blue



### Note!

If, at the ionization probe, AC 230 V is not reached, the polarity on the transformer's primary side must be inverted, which means that X3-04 pin 2 and X3-04 pin 4 must be interchanged.

## 6 Specification of transformer

- Reinforced or double insulation conforming to DIN EN 61558-2-6 or DIN EN 61558-2-17.
- Fuse fitted between the LMV2... / LMV3... and transformer's primary side
- The max. secondary voltage must not exceed AC 230 V (adherence to air and creeping distances in the event of short-circuit of detector)
- Recommended capacity of transformer: 0.5 to 2 VA
- Transformer terminals and cable connections must be matched to the max. AC voltages that can occur

## 7 Notes on safety

- For operation with increased voltage, the symmetry of mains voltage supply must be checked.
- Operation should take place only if the limit values to EN 50160 ( $\leq 2\%$ ) are adhered to.
- The type of transformer used must meet the requirements of chapter *Specification of transformer* since faulty insulation in combination with unsymmetrical mains networks can lead to a simulation of flame.