## VARIMETER <br> Current Monitoring System IK 9138, IK 9139

Translation of the original instructions

- According to IEC/EN 60255-1
- Modular system, extension possible
- For measuring currents of 0.175 to 6 A
- Small amount of wiring required
- Compact design
- LED display
- Width 17.5 mm



## Circuit Diagrams



IK 9138.20


IK 9139

## Approvals and Marking

## C $\epsilon$

## Application

- For monitoring the current consumption levels of different electricity consumers
- For identifying cable breakages and burned-out heating cartridges


## Function

The IK 9138 / IK 9139 varimeter is a modular current monitoring system that consists of a reporting unit IK 9138 and 1 to 30 current monitors IK 9139. This means that the current consumption levels of different electricity consumers can be monitored. If one of the currents that is being monitored drops below the fixed current setting, the LEDs on the relevant current monitor and the reporting unit go on. The central reporting relay in the reporting unit is actuated. The reporting unit needs to be connected to an auxiliary voltage supply. The current monitors obtain their supply voltage from the reporting unit via a plug-in bus line.

| Indicator |  |
| :---: | :---: |
| LED: | On, when the current drops below the setting |
| Connection Terminals |  |
| Terminal designation | Signal description |
| A1 (+), A2 | Auxiliary voltage AC or DC |
| i, k | Current measuring circuit AC |
| 11, 12, 14 | Changeover contact |
| 23, 24 | NO contact |


| Technical Data |  |  |  | Technical Data |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Input |  |  |  | Terminal designation: Wire connection: | EN 50005 $2 \times 2.5 \mathrm{~mm}^{2}$ solid or |
| Auxiliary voltage $\mathbf{U}_{\mathbf{H}}$ : Voltage range At < 10\% residual ripple: At 10 ... $48 \%$ residual ripple: Nominal consumption: |  |  |  |  | $2 \times 1.5 \mathrm{~mm}^{2}$ stranded ferruled |
|  |  |  |  |  | DIN 46228-1/-2/-3/-4 |
|  | DC $0.9 \ldots 1.2 \mathrm{U}_{\mathrm{H}}$ |  |  | Wire fixing: | Plus-Minus-terminal screws M3.5 with |
|  | DC 0.8 ... 1.1 |  |  |  | self-lifiting clamping piece IEC/EN 60999-1 |
|  | $0.5 \mathrm{~W}+\mathrm{n} \times 0.45 \mathrm{~W}$ |  |  | Stripping length: | 10 mm |
|  | ( $\mathrm{n}=$ number of IK 9139) |  |  | Fixing torque: | Max. 0.8 Nm |
| Current consumption:Nominal frequency: | $15 \mathrm{~mA}+\mathrm{n} \times 15 \mathrm{~mA}$ via IK 9138 |  |  | Mounting: | DIN rail IEC/EN 60715 |
|  | 50 Hz |  |  | Weight |  |
| Frequency range: | $\pm 5 \%$ |  |  | IK 9138: | 70 g |
| Switching point (fixed): |  |  |  | IK 9139: | 52 g |
|  | Switching | Maximum | Maximum | Dimensions |  |
|  | (available)* $^{\text {a }}$ | permanent | overload, 2 s | Width x height x depth: | $17.5 \times 89 \times 58 \mathrm{~mm}$ |
|  | 0.175 A | 5 A | 7.5 A |  |  |
|  | 0.5 A | 20 A | 150 A | Standard Types |  |
|  | 0.75 A | 20 A | 150 A |  |  |  |
|  | 1 A | 20 A | 150 A | IK 9138.20 AC/DC 24 V <br> Article number: <br> - Output: <br> - Auxiliary voltage $\mathrm{U}_{\mathrm{H}}$ : <br> - Width: | 0036887 <br> 1 changeover contact, 1 NO contact AC/DC 24 V <br> 17.5 mm |
|  | 3 A | 20 A | 150 A |  |  |
|  | 5 A | 20 A | 150 A |  |  |
|  | 6 A | 20 A | 150 A |  |  |
|  | * Other switching points possible on request |  |  | IK 9139 1 A max. 20 A Article number: <br> - Switching point: <br> - Overload: <br> - Width: |  |
| Hysteresis: | < 10 \% |  |  |  | 0036888 |
| Output |  |  |  |  | 1 A |
| Contacts |  |  |  |  | 17.5 mm |
| IK 9138.20 : <br> Thermal current $I$ : |  |  |  |  |  |
|  | 1 changeover contact, 1 NO contact5 A |  |  | Ordering Examples |  |
| To AC 15 |  |  |  | K 9138 . 20 AC/DC 24 V |  |
| NO contact: | $3 \mathrm{~A} / \mathrm{AC} 230 \mathrm{~V}$ IEC/EN 60947-5-1 |  |  | $\xrightarrow{\text { a }}$ Nominal voltage |  |
| NC contact: | $1 \mathrm{~A} / \mathrm{AC} 230 \mathrm{~V}$ IEC/EN 60947-5-1 |  |  |  | Contacts |
| Electrical life |  |  | N 60947-5-1 |  | Type |
| At $3 \mathrm{~A}, \mathrm{AC} 230 \mathrm{~V} \cos \varphi=1$ : | $\leq 1 \times 10^{6}$ switching cycles |  |  |  |  |
| Short circuit strength | $6 \mathrm{~A} \mathrm{gG} / \mathrm{gL} \quad$ IEC/EN 60947-5-1$20 \times 10^{6}$ switching cycles |  |  | IK9139 AC 1A max. 20 A | Max Overload |
| Mechanical life: |  |  |  |  | Switching point |
| General Data |  |  |  |  |  |
| $\begin{array}{ll}\text { Operating mode: } \\ \text { Temperature range } & \text { Continuous operation } \\ \end{array}$ |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Storage: | $\begin{aligned} & -20 \ldots+60^{\circ} \mathrm{C} \\ & -20 \ldots+0^{\circ} \mathrm{C} \end{aligned}$ |  |  |  |  |
| Altitude: | <2000 m |  |  |  |  |
| Clearance and creepage distances |  |  |  |  |  |
| Rated impulse voltage/ pollution degree |  |  |  |  |  |
| Input/output: | $4 \mathrm{kV} / 2$ |  | IEC 60664-1 |  |  |
| EMC |  |  |  |  |  |
| Electrostatic discharge: | 8 kV (air) | IEC/EN 61000-4-2 |  |  |  |
| HF irradiation |  |  |  |  |  |
| 80 MHz ... 2.7 GHz | $10 \mathrm{~V} / \mathrm{m}$ | IEC/EN 61000-4-3 |  |  |  |
| Fast transients: | 2 kV | IEC/EN | N 61000-4-4 |  |  |
| Surge voltages |  |  |  |  |  |
| Between |  |  |  |  |  |
| wires for power supply: | 1 kV | IEC/EN 61000-4-5 |  |  |  |
| Between wire and ground: | 2 kV | IEC/EN 61000-4-5 |  |  |  |
| HF wire guided: | 10 V | IEC/EN | EN 61000-4-6 |  |  |
| Interference suppression: | Limit value class B |  | EN 55011 |  |  |
| Degree of protection |  |  |  |  |  |
| Housing: | IP 40 |  | EC/EN 60529 |  |  |
| Terminals: | IP 20 |  | EC/EN 60529 |  |  |
| Terminals 40A: | IP 00 |  | EC/EN 60529 |  |  |
| Housing: | Thermoplastic with Vo behaviour according to UL subject 94 |  |  |  |  |
| Vibration resistance: | Amplitude 0.35 mm <br> frequency 10 ... 55 Hz IEC/EN 60068-2-6 |  |  |  |  |
| Climate resistance: |  |  |  |  |  |

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