

AC/DC Medium Voltage Live Line Detector/Indicator

FEATURES

- Pulsating light indication
- Constant brightness with input voltage
- Extremely low input current
- No external fuses needed
- AC and DC operation
- High tolerance to overvoltages
- Fault tolerant design
- Optional customization
- LED or fiber optic output
- Cable or bolt input connections

APPLICATIONS

- PV Solar arrays
- Capacitor banks
- Power inverters
- Rail guns
- Medium Voltage grids
- Testing and research



DESCRIPTION

The MDV series of live line voltage presence indicators provide a means to detect visually the presence of dangerous voltages in medium voltage lines, capacitors or busbars. Digital multimeters are limited to 1kV DC or AC maximum so there is a need to reliably and safely identify the presence of hazardous voltages in power electronics equipment. Four high intensity red LEDs will blink at a rate greater than 2Hz when the input voltage is higher than the activation voltage. Blink intensity and rate remain constant through the entire activation voltage range. Input current to the module is fairly constant with input voltage and for example stays below the 100uA mark in the MVD30 model. This low input current increases

system reliability and allows the MVD detectors to be used in high impedance lines. Also internal design makes the device safe from a supply current point of view even if the any of the internal semiconductors fail, making the use of external fuses unnecessary.

The MVD series of detectors are extremely tolerant to input over voltages, even withstanding differentially applied short pulses greater than 10kV, something that also adds to overall system safety. The four LEDs are arranged in series and parallel configuration so a single LED fault will not render the module useless.

The MVD30F model provides visual signaling through a 1.5m fiber optic (different lengths available) that carries the light pulse to a panel mounted light pipe, thus avoiding the need for auxiliary supplies on the low voltage area to signal the presence of voltage.

SPECIFICATIONS

	MVD30	MVD25	MVD15	Units
Response time	<0.5	<0.5	<0.5	s
Input current	<100	<250	<300	μA
Max. nominal input DC	3500	2900	1800	V
Max. nominal input AC	2500	2100	1200	V _{rms}
Overvoltage DC, 3s duration	8000	3100	3500	V _{dc}
Activation voltage, +25 °C	220 ±5%	20V max	85±5%	V _{dc}
Activation voltage, -25 °C, +70 °C	190..310	20V max	65..100	V _{dc}
LED frequency	>2	>2	>2	Hz
Working temperature	-25..+70	-25..+70	-25..+70	°C
Input bolts diameter	5	5	5	mm
Max. locknut torque	1,5	1,5	1,5	Nm
Isolation voltage	8	8	6	kV
Impulse lighting voltage	16	16	10	kV
Clearence and creepage	See dimensions	See dimensions	See dimensions	

	MVD30	MVD25	MVD15	Units
Type tests	1000A magnetic interference Dielectric Isolation Lighting impulse test Overvoltage test Activation voltage Input current LED frequency	1000A magnetic interference Dielectric Isolation Lighting impulse test Overvoltage test Activation voltage Input current LED frequency	1000A magnetic interference Dielectric Isolation Lighting impulse test Overvoltage test Activation voltage Input current LED frequency	
Routine tests	Activation voltage Input current LED frequency Vmax working test Dielectric isolation	Activation voltage Input current LED frequency Vmax working test Dielectric isolation	Activation voltage Input current LED frequency Vmax working test Dielectric isolation	
Normative references	IEC 61243-5, 61243-2, EN 50178, IEC 60071-01	IEC 61243-5, 61243-2, EN 50178, IEC 60071-01	IEC 61243-5, 61243-2, EN 50178, IEC 60071-01	

CUSTOMIZATION

SAKER offers customization services in case different specifications are needed within the medium voltage spectrum. Typical elements that can be tailored to customer needs include maximum input voltage, activation voltage, light output frequency or current consumption. Input cables can also be fitted instead of M5 bolts with cable length and type specified by the customer.

INSPECTION

SAKER recommends that a inspection of the module is included together with the equipments recommended periodical inspection.

ORDERING CODES

CODE	Description
MVD30	MVD30 with bolt inputs and 4 led indicators
MVD30F	MVD30 with bolt inputs and fiber optic output. Includes 1.5m fiber optic cable and frontal panel module. Contact for other cable lengths
MVD25	MVD25 with bolt inputs and 4 led indicators
MVD25F	MVD25 with bolt inputs and fiber optic output. Includes 1.5m fiber optic cable and frontal panel module. Contact for other cable lengths

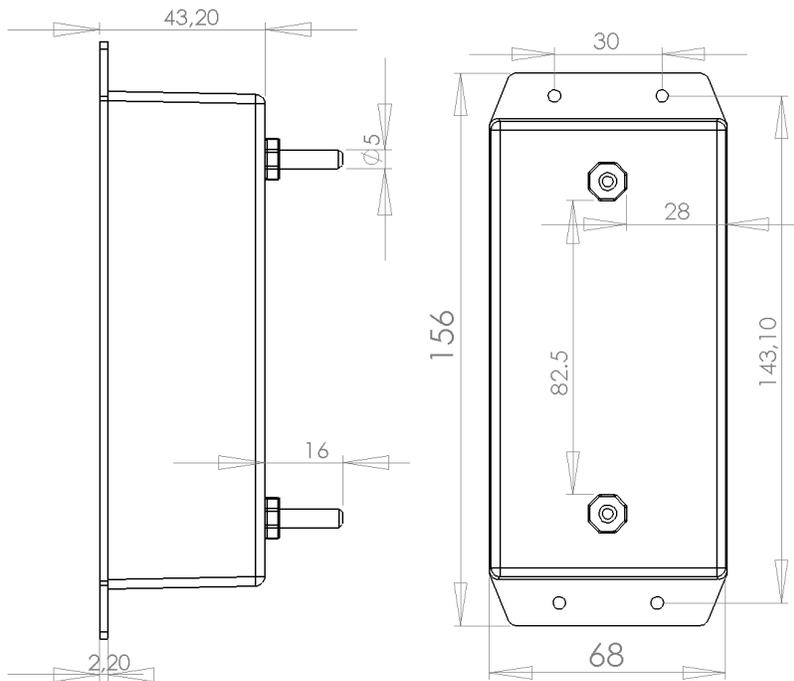
CODE	Description
MVD15	MVD15 with bolt inputs and 4 led indicators



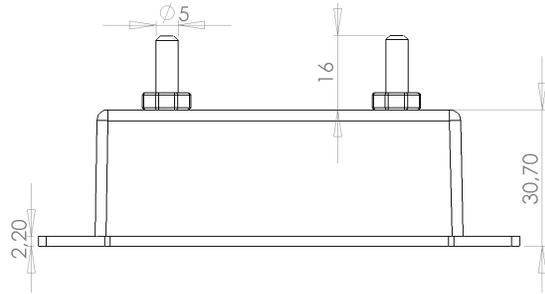
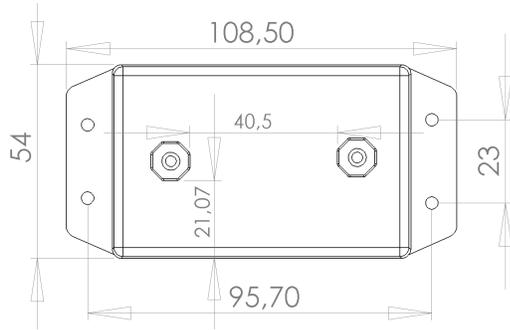
Fiber optic and panel mount included in the MVD30F

DIMENSIONS

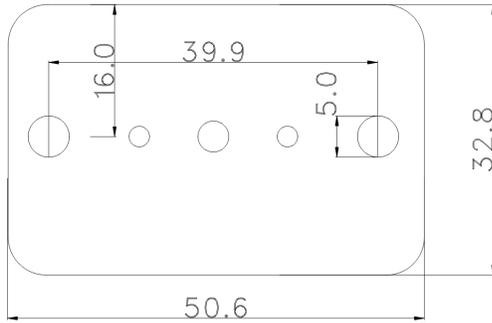
MVD30/MVD25



MVD15



MVD30F Panel



RECOMMENDED PANEL CUT

