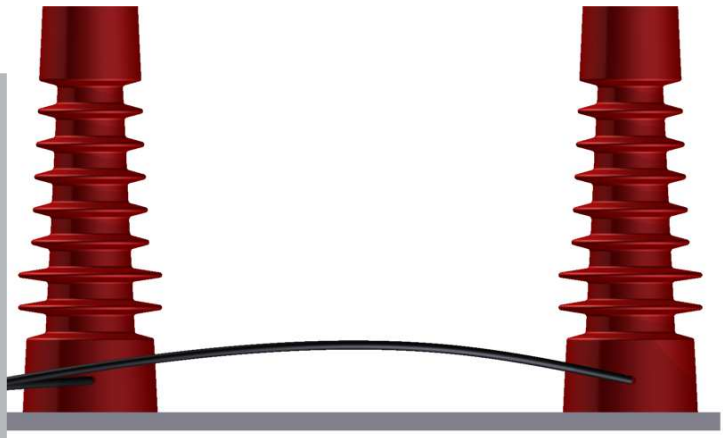
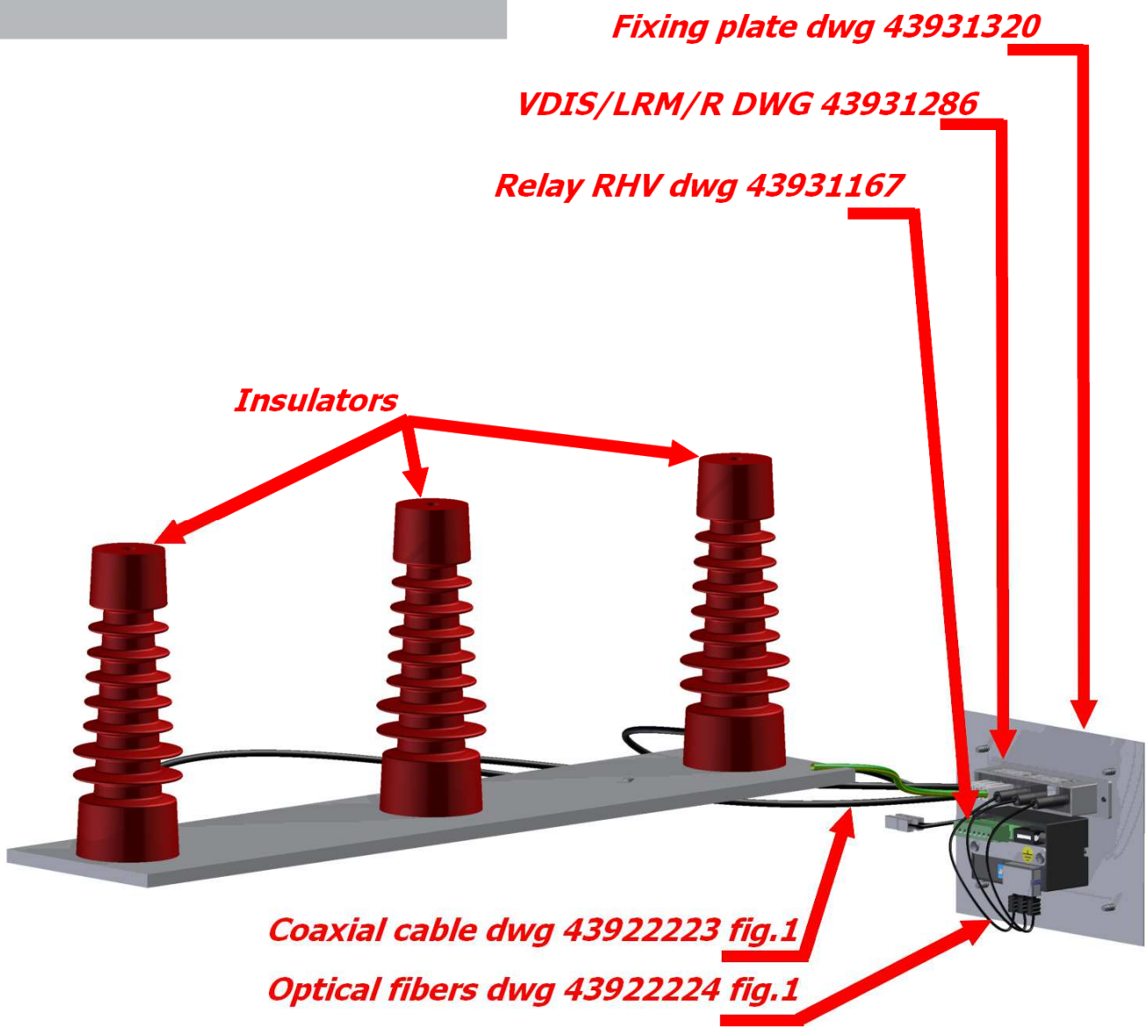
ELECTRONSYSTEM MD TECHNICAL SHEET

Revision 0 of 11 October 2024







Via Madonna delle Rose, 72 24061 Albano S.Alessandro (BG) ITALY - Phone +39035584000, Fax +39035584099 E-mail: info@elecmd.it Web www.elecmd.it

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DESCRIPTION

This innovative and safe solution Is designed to get easily and cost effectively a remote indication of presence/absence of voltage on a bus bar.

The system is composed basically by two devices:

1. voltage detecting system
2. relay for remote indication
3. optical cable fiber link between voltage detecting system and relay

Voltage detecting system, in accordance with IEC62271, continuously detects and indicates by blinking lamps on front the actual live phases and on rear transmits optical signals to relay.

Optical cable fiber assures a complete galvanic insulation between potential medium voltage section and low voltage section.

Voltage detecting system not only displays the live voltage, but also is suitable for optical phase comparison as the signals emitted by blinking lamps are synchronous and coherent with medium voltage.

Relay for remote indication, with double changeover contacts, is able to inform locally about the voltage presence or absence for a quick view and also allow remotely to know the status of voltage on busbar in order to implement logic protection.

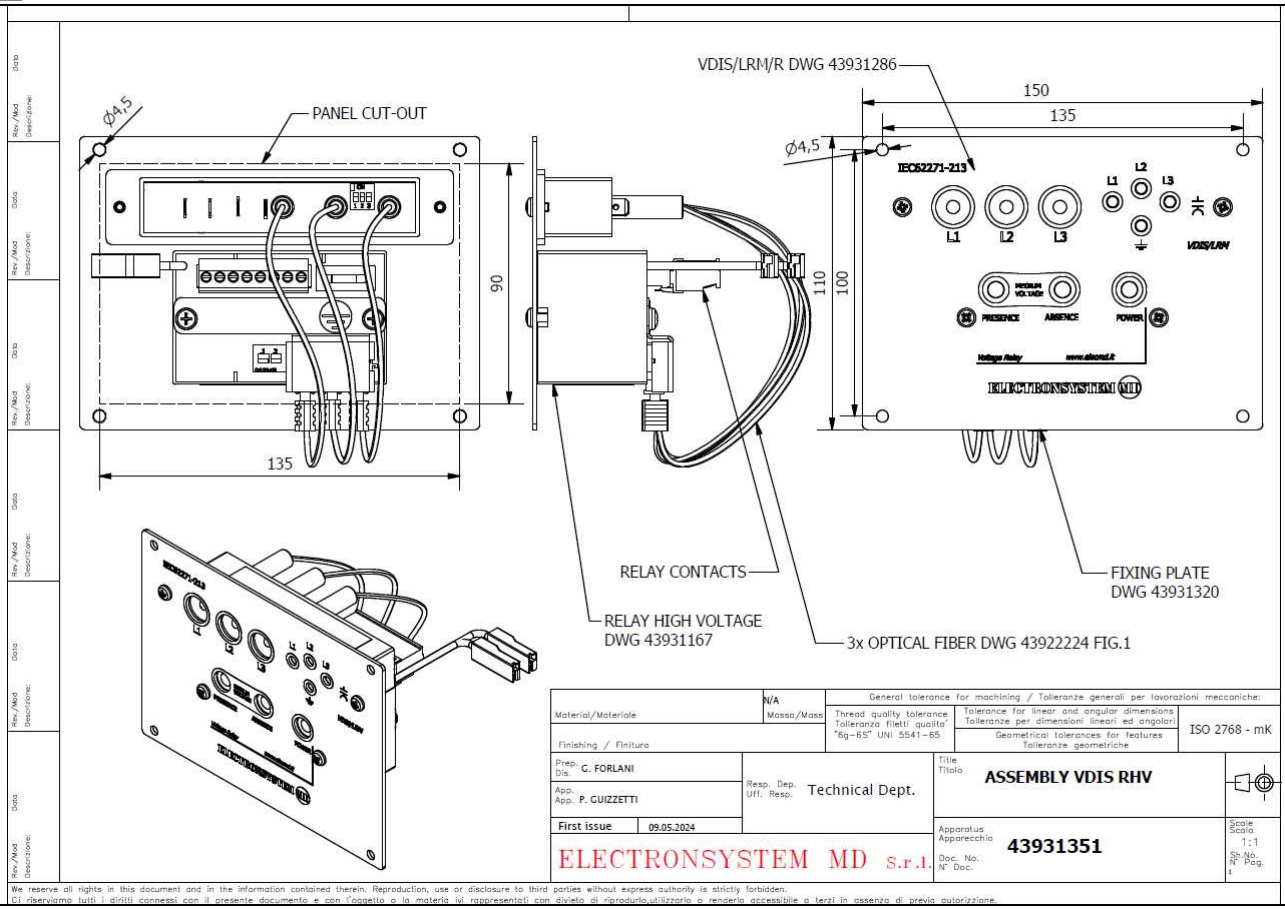
Remote indication of medium voltage presence are available depending on AND / OR logic of considering the three phases voltage.

The great advantage of this solution is the complete insulation guaranteed by optical cable that ensures, even in case of failure of capacitive divider, no damage or discharge to low voltage compartment.

Typical application of such a system are: automatic switching from standard power line to emergency one or electrical safe supervision to avoid earth closing with live voltage.

Dimension

Drawing: 43931351



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VDIS/LRM/R

APPLICATIONS

- **Medium Voltage Switchboards**

MAIN CHARACTERISTICS

- **VDIS/LRM is an integrated voltage detecting indicating system conform to IEC62271-213/2021**
- **The device supplies continuously an electrical signal for phase comparison and optical blinking led for voltage indication**
- **Very wide and bright leds allow simple and safe visibility for personnel encharged in verification**
- **Suitable for indoor applications / outdoor with waterproof socket**
- **Fully encapsulated electronics for harsh environment**
- **LED life time guaranteed - min. 30 years**
- **Suitable for panel mounting**

This capacitive voltage module is used in medium voltage switchgears. The voltage detector indicator and the coupling system is tested and manufactured according to the requirements of IEC 62271-213
The indication of the voltage is displayed with one flashing LED for each phase with a separable indicator. The test sockets for phase comparing are nickel plated. The capacitive module has to be simply adapted to the capacitive bushing or the insulator , in which the module is used.

Electrical characteristics VDIS/LRM

Coupling capacity range	pF	From 10 to 200 (other values on request)
Medium Voltage range	kV	From 3.6 to 36
Power supply		No auxiliary power requested
Indication		Red led on the indicator
Led Consumption	mW	< 1
Led Intensity	Mcd	3000@20mA
Interface		Ø4 mm measuring
Temperature range	°C	-25 to +65
IP degree protection	IP	>2X coupling system, 65 the indicator
Connection input		4x faston 4.8x0.5mm or 6.3x0.8mm
Box		Polyammide PA66

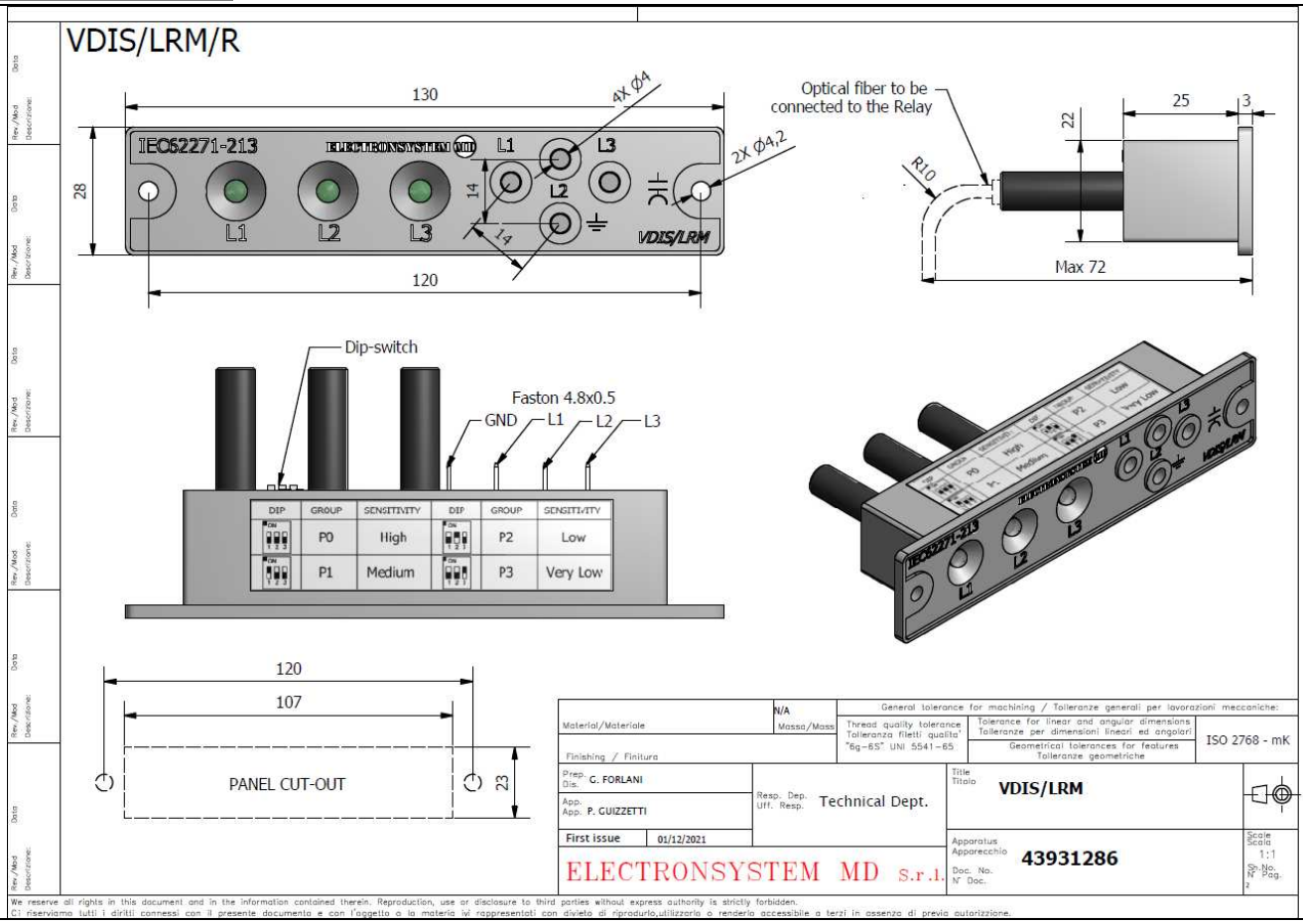
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ELECTRONSYSTEM MD TECHNICAL SHEET

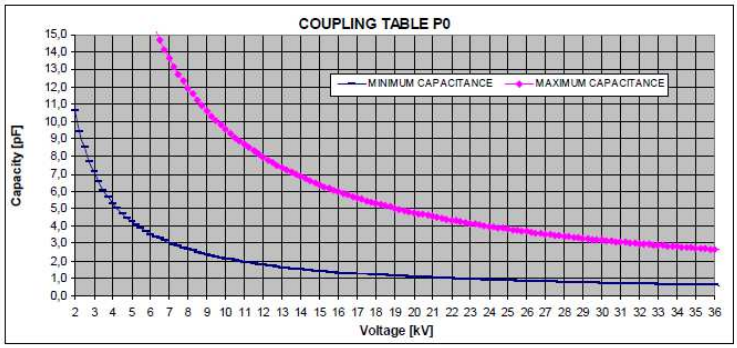
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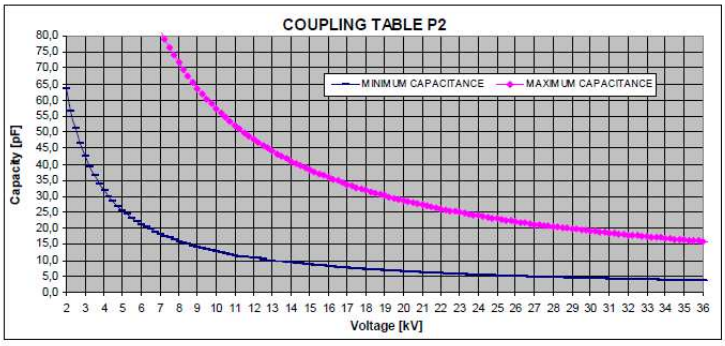
Dimension VDIS/LRM/R

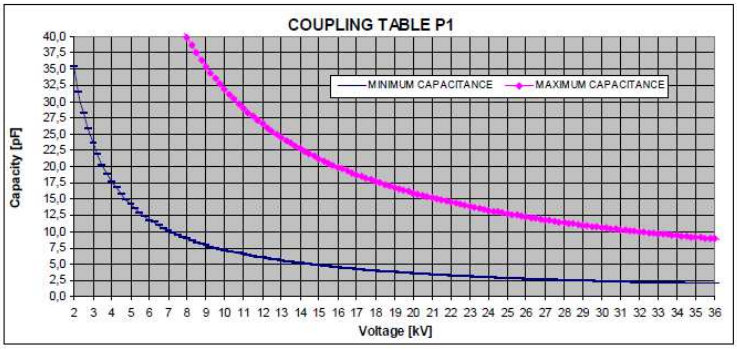
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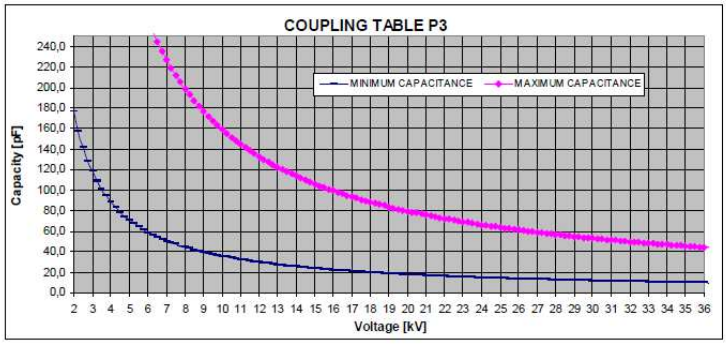


Coupling tables VDIS/LRM/R









ELECTRONSYSTEM MD TECHNICAL SHEET

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RHV



With this device you can achieve the better protection because of the galvanic insulation guaranteed by optical link.
This relay receives optical signal of the phase from the HVD3/RM and supplies :

- Two changeover contacts for the remote signalling of “NO VOLTAGE”
- a local signal of “MEDIUM VOLTAGE PRESENCE”
- a local signal of “MEDIUM VOLTAGE ABSENCE”
- a local signal of “AUXILIARY VOLTAGE”

Technical features

Nominal voltage DC :.....24÷220 ±10%
Nominal voltage AC :.....24÷230 ±10% 50-60Hz
Input :.....optical synchronous signal
Temperature range :.....-30°C ÷ 70°C

Conform to ENEL: GLI, R EMC 01 and R CLI 01

Dielectric strength :.....275KV
Surge strength :.....650KV
IP degree protection :.....IP64(*)

Relè features
Contacts Material :.....Ag. CdO
Nominal Value :.....5A 250VAC (cosϕ=1.0)
:.....3A 250VAC (cosϕ=0.4)
:.....5A 30VDC
Max changeover current :.....5 A
Max changeover voltage :.....250 VCA, 100VDC
Electric live :.....5A/250 VCA cosϕ1 1 x 10^5 cycles
Mechanical live :.....5 x 10^6 cycles
Dielectric strength (open contacts) :.....1000VAC 1min
(coil-contacts) 5000VAC 1min
Surge strength :.....min 10000V/1.2X50us

(*) output connector IP30

Material

Box :..... Polyurethan resin (2-component)

Connection input :.....optical fiber
output :.....Connector with screw removable

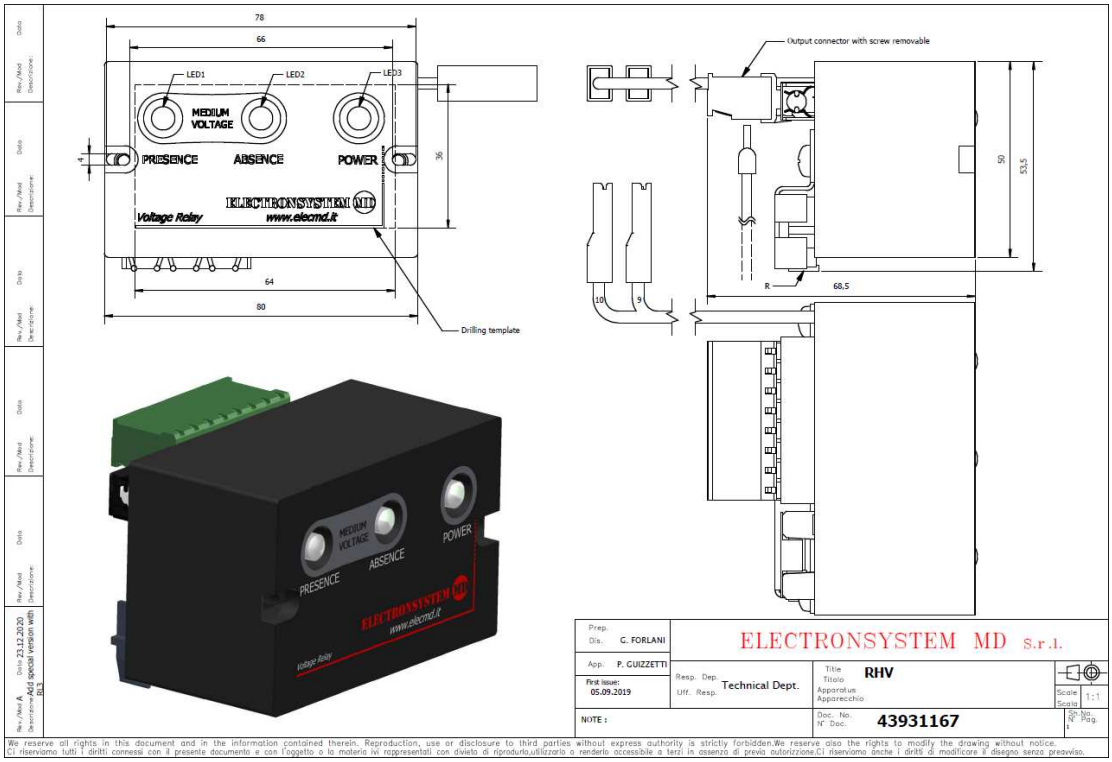
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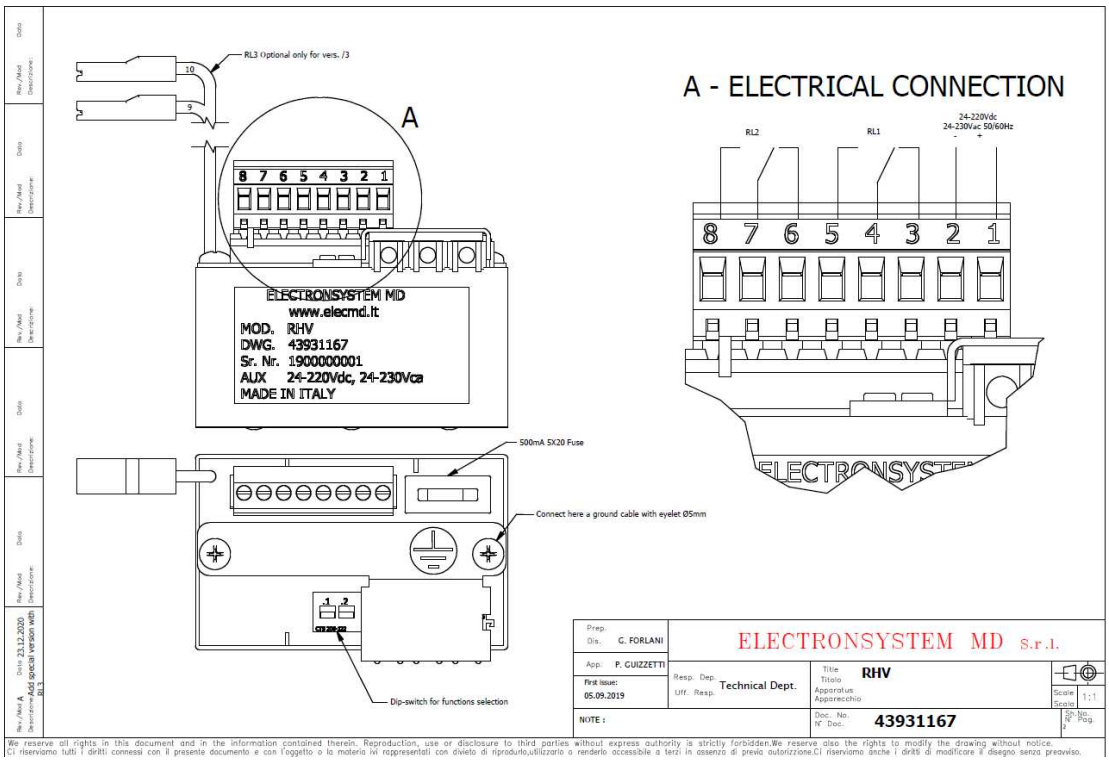
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Dimension & Features RHV

Drawing: 43931167





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Dimension & Features RHV

Drawing: 43931167

Descrizione:
-Led 1 (Rosso) : Presenza tensione primaria
-Led 2 (Verde): Assenza tensione primaria
-Led 3 (Blu): Presenza tensione ausiliaria
-R : Ricevitore ottico (collegare tramite fibra ottica a HVD3/RM, HVD3/RC.....)
-Uscita contatti con connettore a vite estraibile come segue :

1 : Positivo di alimentazione (+) 24÷220Vdc, 24÷230Vac 50-60Hz
2 : Negativo di alimentazione (-)

STATO RELE' SENZA ALIMENTAZIONE
3 : Contatto normalmente chiuso (nc)
4 : Comune (c)
5 : Contatto normalmente aperto (na)
RELE' R1 — 3 4 5

6 : Contatto normalmente chiuso (nc)
7 : Comune (c)
8 : Contatto normalmente aperto (na)
RELE' R2 — 6 7 8

Description:
-Led 1 (Red) : High Voltage presence
-Led 2 (Green): High Voltage absence
-Led 3 (Blue): Auxiliary Voltage presence
-R : Optical receiver (linked by optical fiber to HVD3/RM, HVD3,RC..... device)
-Ouput contacts with removable plug as following:

1 : Power (+) 24÷220Vdc, 24÷230Vac 50-60Hz
2 : GND (-)

RELAY STATUS WITHOUT AUX VOLTAGE
3 : Normally closed contact (nc)
4 : Common (c)
5 : Normally opened contact (na)
RELAY R1 — 3 4 5

6 : Normally closed contact (nc)
7 : Common (c)
8 : Normally opened contact (na)
RELAY R2 — 6 7 8

DIP-SWITCH SETUP	VOLTAGE STATUS	R1	R2	R3*
VOLTAGE PRESENCE	ABSENCE			
	PRESENCE			
	MIXED			
VOLTAGE ABSENCE	ABSENCE			
	PRESENCE			
	MIXED			
MIXED VOLTAGE	ABSENCE			
	PRESENCE			
	MIXED			

*optional

VOLTAGE STATUS	L1	L2	L3	LED1	LED2
ABSENCE	–	–	–	OFF	ON
PRESENCE	X	X	X	ON	OFF
MIXED	X	–	–	OFF	OFF
	X	X	–		
	–	X	X		
	–	–	X		

– = OFF X= ON

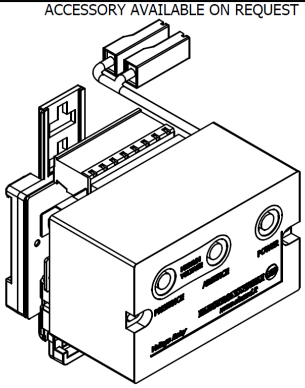
Prep. Dis. G. FORLANI | App. P. GUIZZETTI | First issue: 05.09.2019 | Resp. Dep. Uff. Resp. Technical Dept. | ELECTRONSYSTEM MD S.r.l. | Title Titolo RHV | Apparatus Apparecchio | Scale Scala 1:1 | NOTE : | Doc. No. N° Doc. 43931167 | Sh. No. N° Pag. 3

Rev./Mod. A Data 23.12.2020 Add special version with R1-3

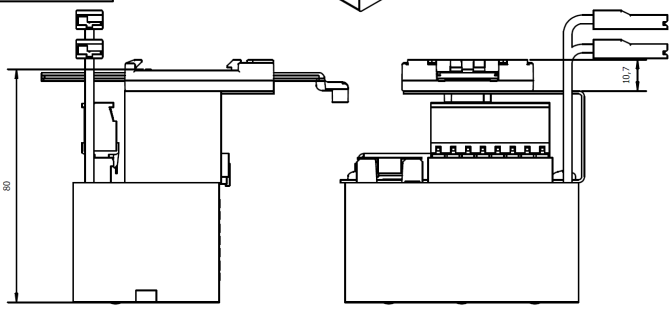
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DIP-SWITCH SETUP	VOLTAGE STATUS	R1	R2	R3*	OLD TYPE CROSS REFERENCE
VOLTAGE PRESENCE	VOLTAGE ABSENCE				RHV/A/S RHV/A/3/805/S*
	VOLTAGE PRESENCE				
	MIXED VOLTAGE				
VOLTAGE ABSENCE	VOLTAGE ABSENCE				RHV/R
	VOLTAGE PRESENCE				
	MIXED VOLTAGE				
MIXED VOLTAGE	VOLTAGE ABSENCE				RHV/B
	VOLTAGE PRESENCE				
	MIXED VOLTAGE				

ACCESSORY AVAILABLE ON REQUEST



ANNEX 1



ORDERING CODE
RHV / [_ _ _] / [3]
3 = third contact (R3)
DIN = Din rail support included

Prep. Dis. G. FORLANI | App. P. GUIZZETTI | First issue: 05.09.2019 | Resp. Dep. Uff. Resp. Technical Dept. | ELECTRONSYSTEM MD S.r.l. | Title Titolo RHV | Apparatus Apparecchio | Scale Scala 1:1 | NOTE : | Doc. No. N° Doc. 43931167 | Sh. No. N° Pag. 4

Rev./Mod. A Data 23.12.2020 Add special version with R1-3

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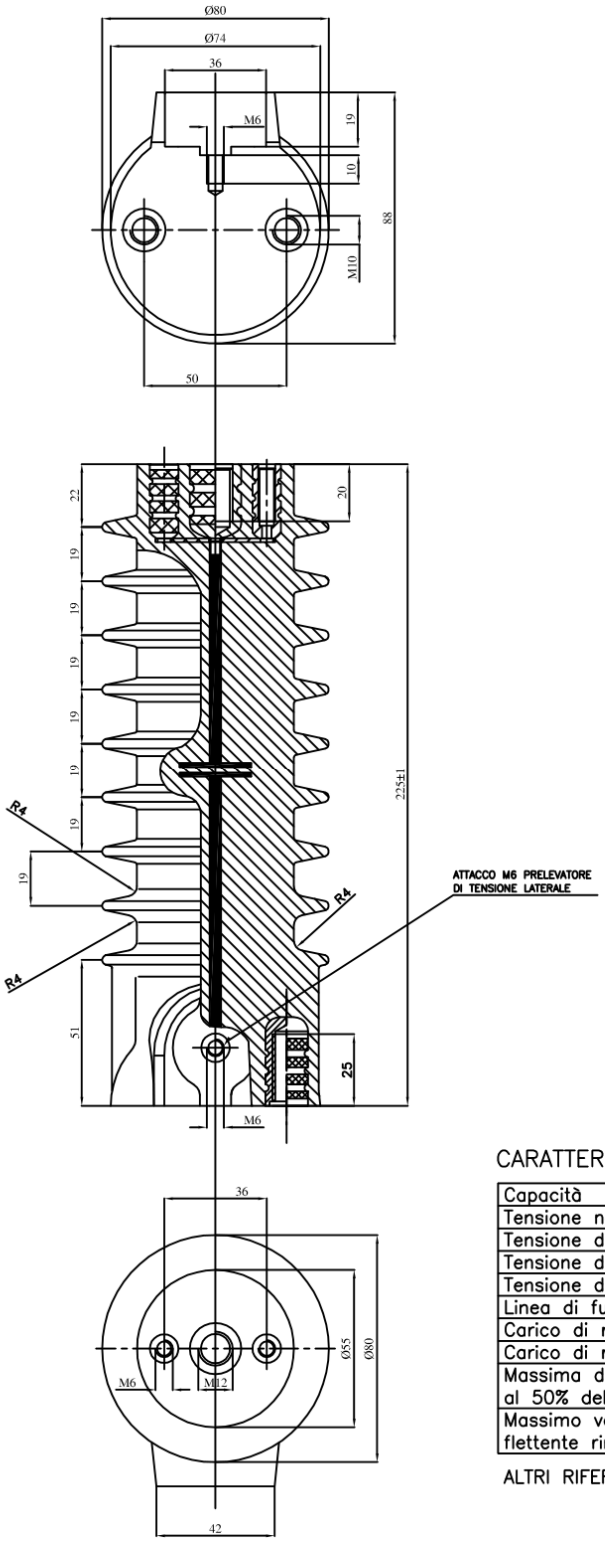
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Accessories: Insulator CD24/L

Drawing: 43922212



CARATTERISTICHE

Capacità	pF	>7
Tensione nominale	kV	24
Tensione di tenuta a frequenza industriale	kV	50
Tensione di tenuta ad impulso atmosferico	kV	125
Tensione di perforazione elettrica	kV eff.	163
Linea di fuga minima	mm	350
Carico di rottura a flessione Po	N	3000
Carico di rottura a flessione P_{50}	N	2500
Massima differenza tra le frecce al 20% e al 50% del carica di rottura a flesione Po	mm	3.2
Massimo valore della freccia residua a carico flettente rimosso	mm	0.42

ALTRI RIFERIMENTI COME DA UNIFICAZIONE ENEL DJ 1054 Ed. 1

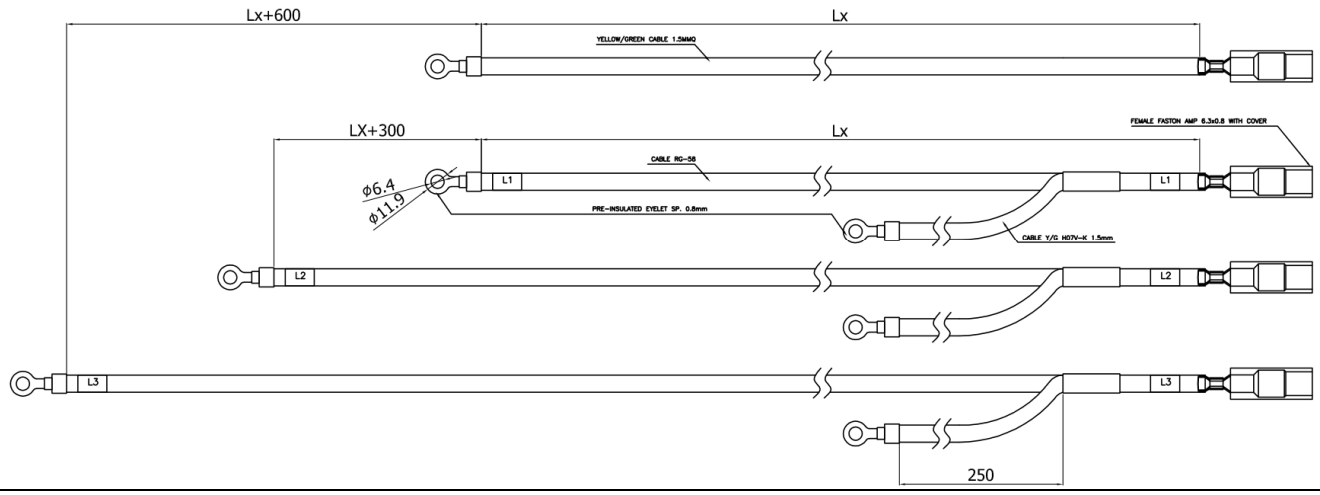
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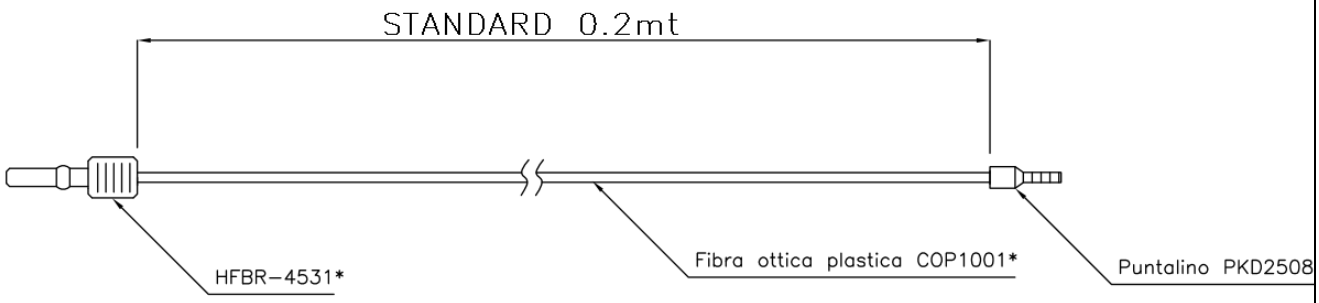
Accessories: Coaxial cable

Drawing: 43922223 Fig.1



Accessories: Optical fiber

Drawing: 43922224 Fig.1



Accessories: Fixing plate

Drawing: 43931320

SEE PAGE 2/8

Electronsystem MD work in partnership with its customers in designing customized executions in order to meet specific requirements, please contact us.

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