



# Osna

ATEX  CE

Intrinsic Safe Interface  
In Terminal Automation

## SMART Earth Relay Unit



## Osna Electronics Pvt. Ltd.

Providing Solution Since 1985

An ISO 9001 : 2015 Certified Company

[www.osnaelectronics.net](http://www.osnaelectronics.net)

Sensors • Process Automation • FactoryAutomation • **Terminal Automation**

## Introduction to Safety for Terminal Automation

The process of filling inflammable liquids for transportation or storage, safety standards and procedures must ensure that the static voltage which occurs during this process, should not lead to an explosion.

To handle this static voltage, the vehicle or the container should be properly earthed. This is important so that the static voltage does not build up to a dangerous flash point. The Earthing method should be proper and perfect, otherwise dangerous losses can take place.

The **OSNA EARTHING RELAY UNIT** gives complete reliability and assurance of a true and correct grounding for maximum safety in all loading operations for variety of loading applications for use with tank trucks, rail cars, air craft refuellers.

The core unit has been successfully use with Industrial users for over 8 years. The ATEX Approved OS-Ex-2G / WE77-Ex-ERU are core of the Earth Relay Unit are certified from the BUREAU VERITAS in Germany / ISSeP in Begium/ PTB in Germany CIMFR Dhanbad /PESO Nagpur . Housed in IECEx / ATEX Approved enclosure for II 2G Ex d II C T6 Gb under EPS 16 ATEX 1019, EPS 15 ATEX 1131X

Principal users in Chemical /Oil & Gas plants and other hazardous areas are to avoid static charge.

The unit is manufactured according to European standards EN 60079-0, EN 60079-1.

The trip Amplifier is intrinsically safe and is galvanically isolated from both input and output control circuits.

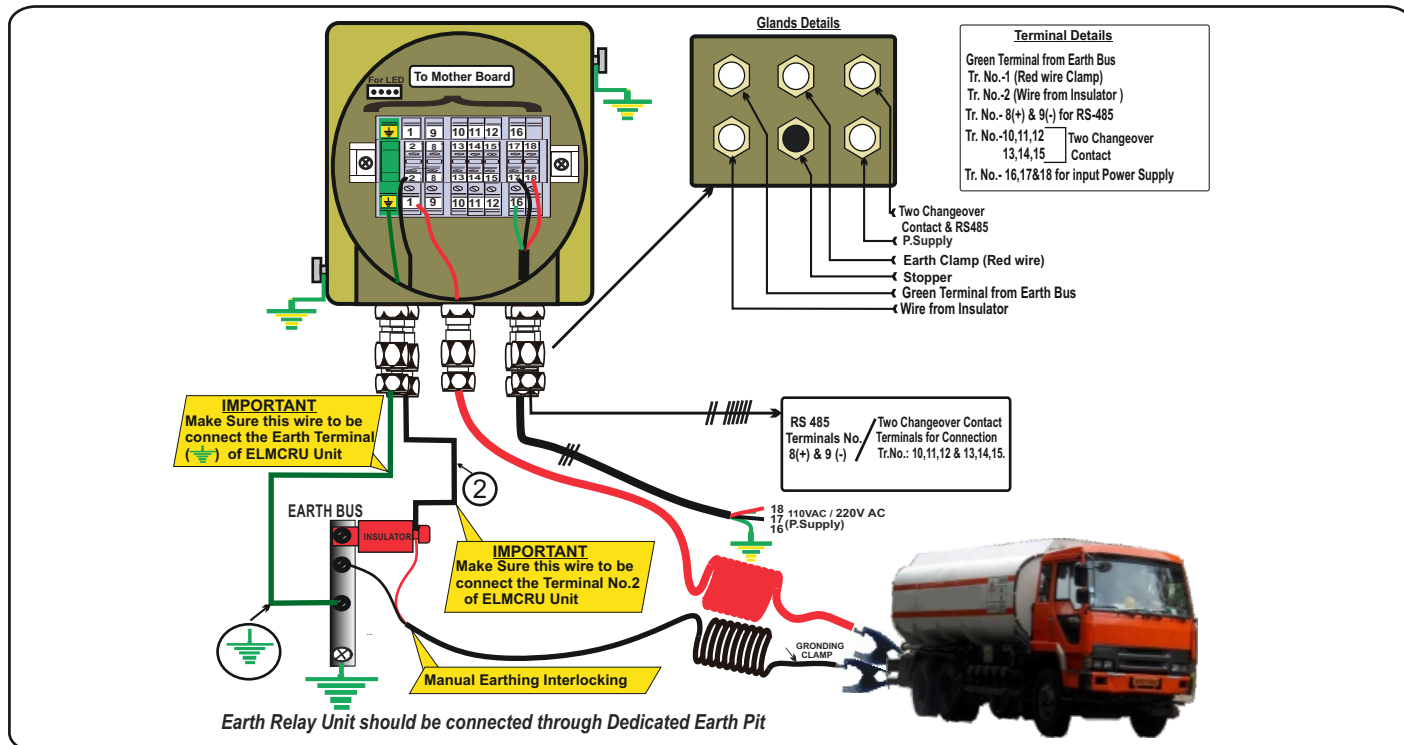
### Earth Relay Unit - OS-Ex-2G / WE77/Ex-ERU(ELMCRU)

#### Features

The **Smart Earth Relay Unit**, can detect the Tanker "Not structure"also the device has ability to display the Loop resistance. The Loop Resistance range can be adjusted with the help of keys and display.

- **Earth monitor and resistance detector in the Earth Loop.**
- **Single, Dual and Triple Output approved for II 2G Ex d II C T6 Gb.**
- **Wide range of Earthing clamps.**
- **Intrinsically / Ex proof.**
- **Verifications of Tanker / Truck**
- **Digital logic RS-485**
- **Relay Outputs**



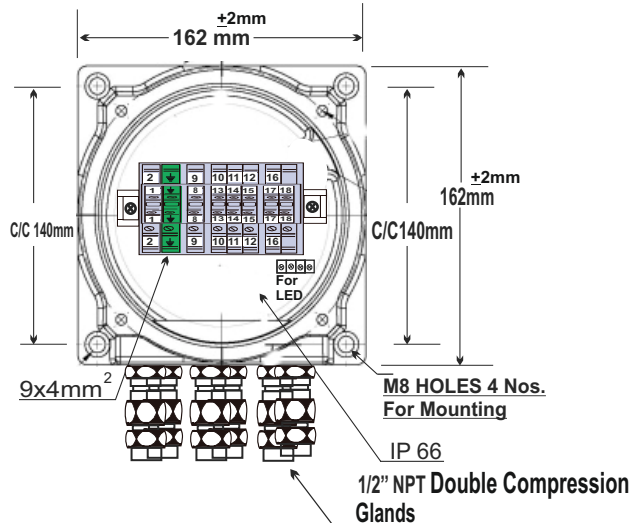


## Technical Information of Trip amplifier OS-Ex-2G / WE77/Ex-ERU (ELMCRU-D)

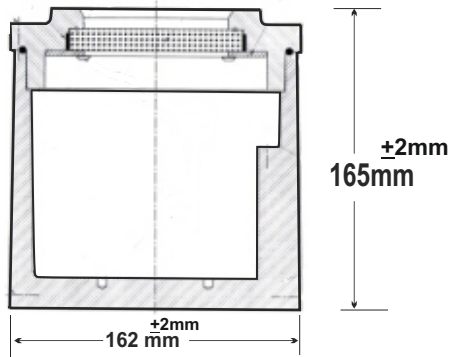
<b>Article No.</b>	ERU-020B for 220VAC , ERU-020A for 110VAC, ERU-020D for 24VDC
<b>Power Supply</b>	<b>220VAC OR 110 VAC</b> -10% +15%, 45-65Hz. / 24V DC $\pm 10\%$
<b>Current Consumption</b>	approx. 3,5VA
<b>Ripple</b>	$\leq 10\%$
<b>Hazardous Area Section</b>	
<b>Inputs ( Intrinsically Safe )</b>	
Nominal data	as per DIN 19234 Equipment
Open circuit voltage	approx. 2 to 9 VDC
short circuit current	approx. 2 to 9 mA
Earth Capacitances	1200 PF to 7200 PF
Earth Loop Resistance	0 to 10 $\Omega$ (Adjustable By Software)
<b>Parameters as per BUREAU VERITAS</b>	BV Certificate No. EPS 16 ATEX 1019, EPS 15 ATEX 1131X
<b>Certificate as per</b>	EN60079-0 : 2012 , EN EN60079-1 : 2014
	Values per circuit Values when connecting the both circuit
Output Voltage (max.)	12.87 V
Output Current (max.)	15.86mA
Output power (max.)	64 mW
<b>Permissible circuit values</b>	
<b>Ignition protection class/</b>	<b>IIC (1)G [Ex ia Ga] IIB/IIC , IIC (1)G [Ex ib Ga] IIB/IIC</b>
Explosion group	II C
Max. External Capacitance	800 nF
Max. External Inductance	74 $\mu$ H
<b>Safe Area Section</b>	
Contact rating of relay	250 V / 5 A / Cos $\phi \geq 0.7$
<b>Circuit Response Time</b>	
Relay Energising / De-energising	$\geq 50$ ms / $\geq 50$ ms
Switching Frequency	Max. 10 Hz.
<b>Weight</b>	<b>6kg</b>
<b>Enclosure :</b>	
Flameproof Enc.	II 2G Ex d IIC, T6 Gb -20°C $\leq$ Ta $\leq$ +55°C Gb
<b>ATEX BV Certificate No.</b>	<b>BV Certificate No. EPS 16 ATEX 1019 EPS 15 ATEX 1131X</b>
Housing Material	Aluminum
<b>Glands:</b>	
Type of Thread	1/2" NPT Double Compression
Protection class	IIA, IIB, IIC, Ex-d
Ambient Temperature	Max. 55°C
<b>Gross Weight</b>	16kg
Flameproof Enc.	II 2G Ex d IIC, T6 Gb -20°C Ta +55°C Gb

## Dimensions of flame proof housings with clamp

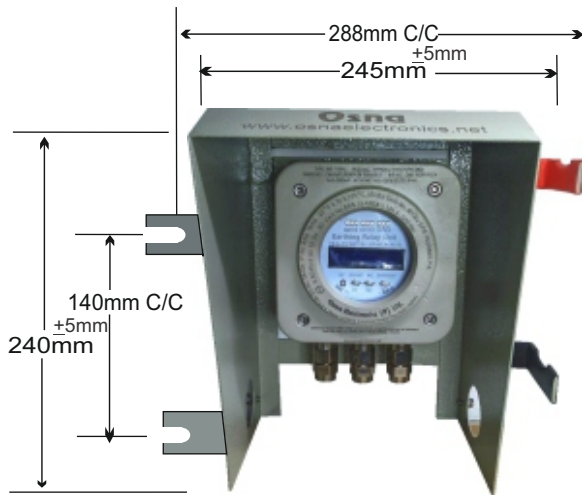
### ENCLOSURE (TOP VIEW)



### ENCLOSURE (SIDE VIEW)

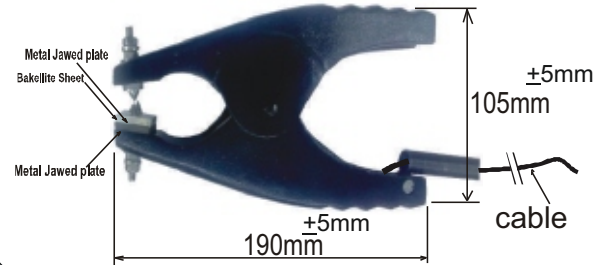


### MOUNTING



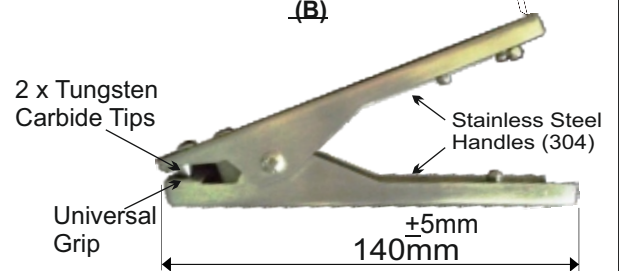
### CROCODILE CLAMP ALUMINUM

(A)



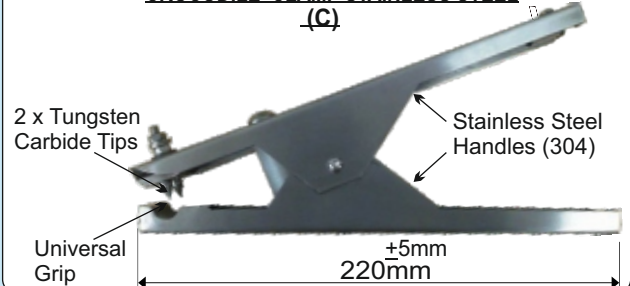
### CROCODILE CLAMP STAINLESS STEEL

(B)



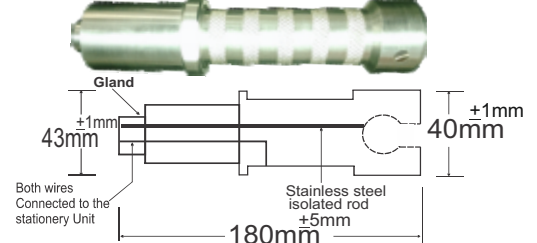
### CROCODILE CLAMP STAINLESS STEEL

(C)

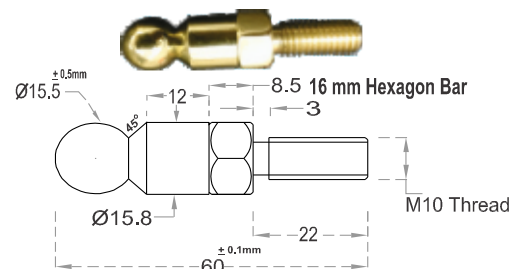


### STUD CLAMP ALUMINIUM

(D)



### Stud (S.S / BRASS)



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