

Osna

Earth Loop Monitoring Relay Units



Intrinsic Safe Interface
In Terminal Automation



Providing Solutions Since 33 Years

Sensors • Process Automation • Factory Automation • 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.

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(ELMRU)

The Truck is earthed through a corcodile clamp and the earth Loop is monitored through the ERU. The terminal filling staff have often by passed the crocodile clamping of the truck by simply clamping to a metal structure in place of the body of the truck, this may cause fire and other damage as the static potential of the truck escalated above the safety values.

To avoid the above the crocodile clamp has largely been replaced by special male studs, which are mounted or welded to the truck body and are inserted into female sockets which are an integral part of the terminal earth bus.

Features

- *Earth monitor and resistance detector in the Earth Loop.*
- *Single and Dual Output approved for II 2G Ex d II C T6 Gb.*
- *Wide range of Earthing clamps*
- *Intrinsically / Ex proof*
- *Relay Output*

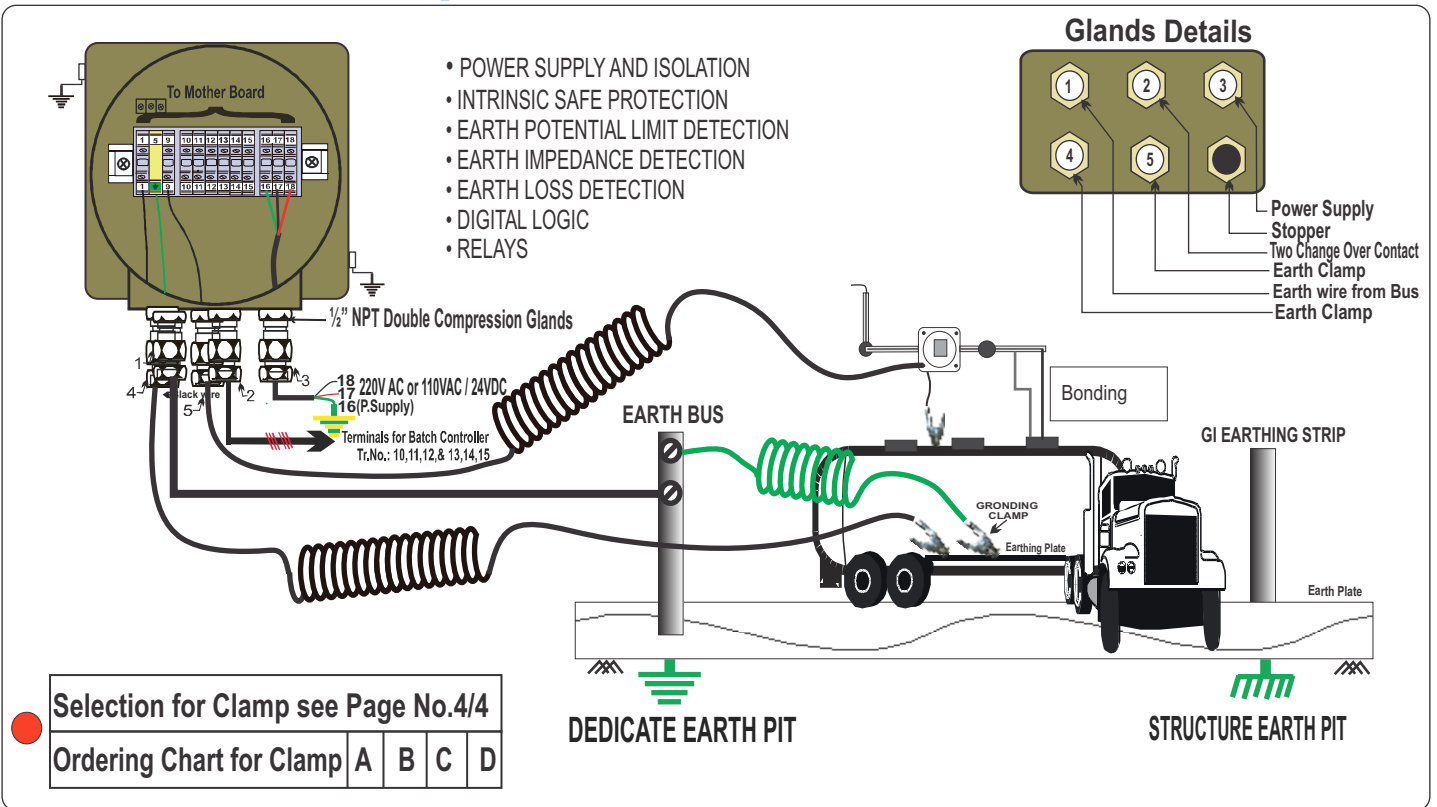
RED-LED (Earth Not ok)



Green LED (Earth ok)



Block Schematic and Typical Connections / G.A.Drawing

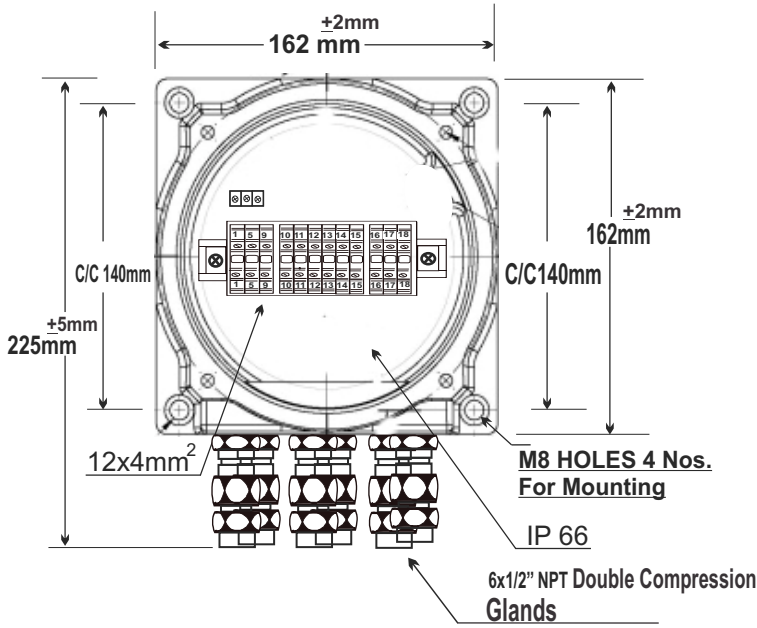


Technical Information of Trip amplifier- OS-Ex-2G /WE77/Ex...ERU(ELMRU)

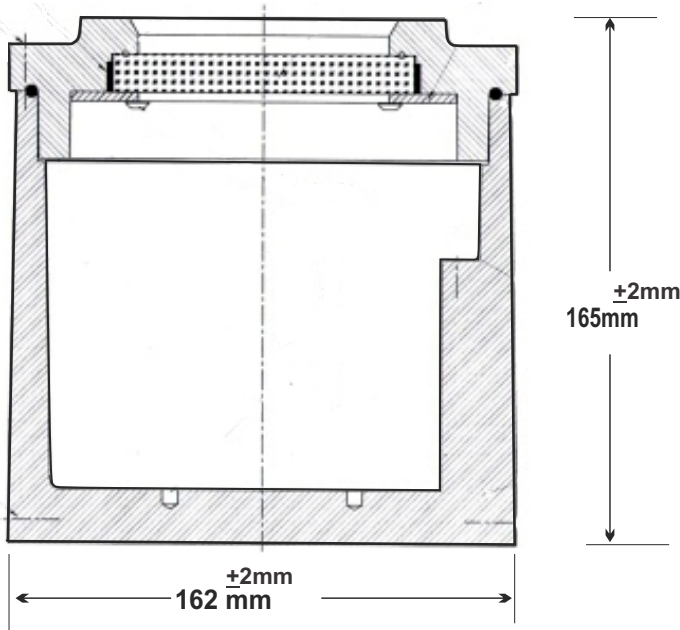
Article No.	ERU-012B for 220V AC, ERU-12A FOR 110VAV
Power Supply	220VAC OR 110 VAC -10%+15%,45-65Hz. / 24VDC+10%
Current Consumption	approx. 3,5VA
Ripple	≤ 10%
Hazardous Area Section	
Inputs (Intrinsically Safe)	
Nominal data	as per DIN 19234 Equipment
Open circuit voltage	approx. 8 V.DC
short circuit current	approx. 8 mA
Parameters as per BUREAU VERITAS	BV Certificate No. EPS 16 ATEX 1 019
Certificate as per	EN 60079-0 : 2012 , EN 60079-1 : 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
Permissible circuit values	
Ignition protection class/	IIC (1)G [EX ia Ga] IIB/IIC , IIC (1)G [EX ia Ga] IIB/IIC
Explosion group	II C
Max. External Capacitance	0.8 mF
Max. External Inductance	74μH
Safe Area Section	
Contact rating of relay	250 V / 4 A / Cos f ≥ 0.7
Circuit Response Time	
Relay Energising / De-energising	»€20 ms / » 20 ms
Switching Frequency	Max. 10 Hz.
Weight	6 kg
Ambient Temperature	Max. 55°C
Glands:	
Type of Thread	½" NPT Double Compression
Protection class	IIA, IIB, IIC, Ex-d

Dimensions of flame proof housings with clamp

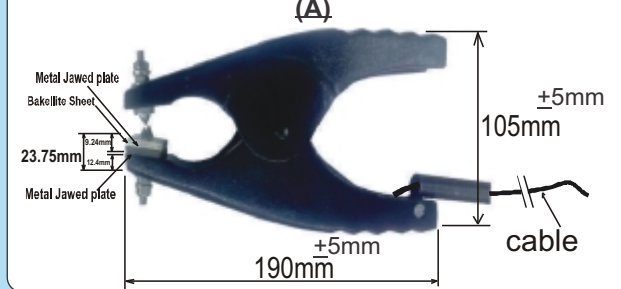
ENCLOSURE (TOP VIEW)



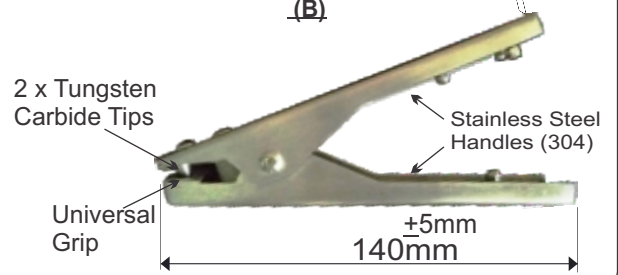
ENCLOSURE (SIDE VIEW)



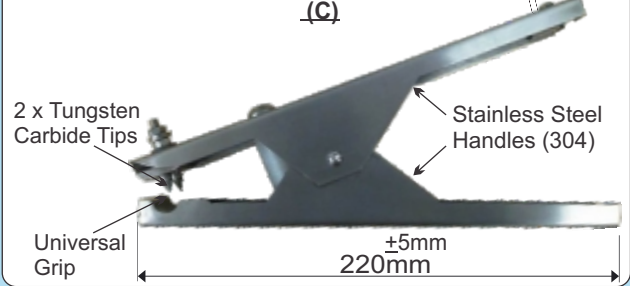
CROCODILE CLAMP ALUMINUM (A)



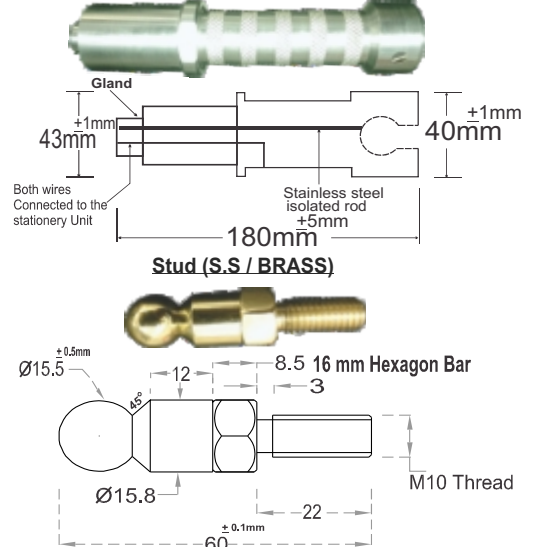
CROCODILE CLAMP STAINLESS STEEL (B)



CROCODILE CLAMP STAINLESS STEEL (C)



STUD CLAMP ALUMINIUM (D)



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