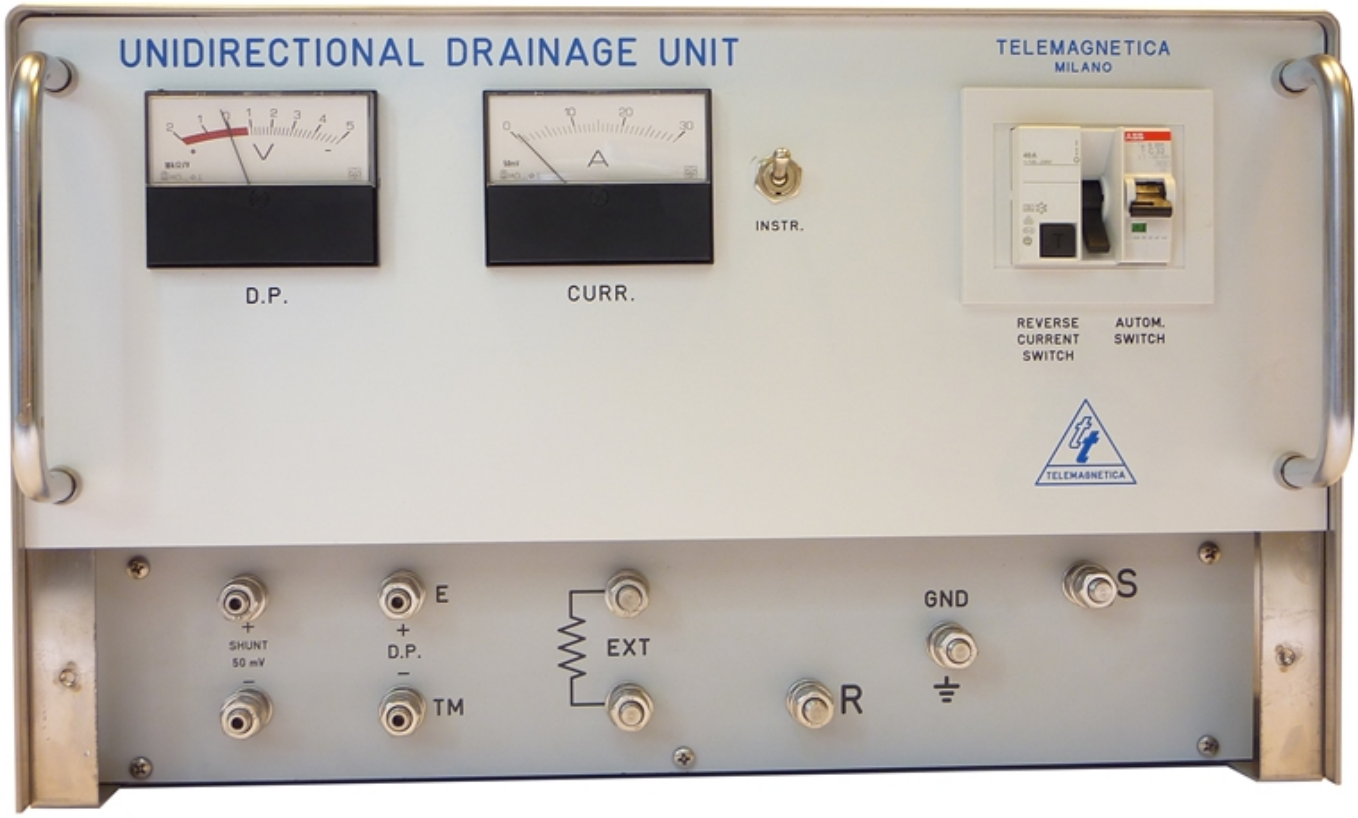
Unidirectional Drainage unit D49



Telemagnetica S.r.l.
Via Teocrito, 36 - 20128 Milan , Italy
Tel: +39-022552900 - Fax: +39-022553097
e-mail: info@telemagnetica.com - http: www.telemagnetica.com

Performance

The drainage D49 unit has been realized to obtain an unidirectional connection between a buried structure and an electrified rail.
The unit is able to regulate the current flowing through the connection.
D49 unit is composed as follow:

a) an external adjustable resistance to balance the circuit system;
b) a silicon diode used as unidirectional block;
c) a reverse current device composed by a differential switch that acts opening the drainage circuit when a passage current between rail and structure occurs;
d) an automatic switch that protects the system in case the current overtakes the maximum level.

Operating modalities

The unit must be connected to the structure with the “S” terminal and to the rail with the “R” terminal.

The PD structure/soil is read by the voltmeter.

The in transit current is read by the ammeter.

Both measurement instruments can be excluded (for example in case of an operator absence) with the “INSTR” inserter.

Two external “shunt 50mV” terminals are able to execute current reading/registrations with a portable instrument.

“E” and “TM” terminals, used to connect the reference electrode and the structure, can be also used to measure the PD.

“GND” terminal must be connected to the safety local earth system.

The main component of the unit is the silicon diode that enables the current to transit only to structure/ rail.

“GND” terminal is dimensioned to support hundreds of amperes of current and different reverse tensions, up to 1000V. Due to that direct or indirect fulgurations can originate over currents and over tensions.

The other diode present in the unit enables to bypass the direct current on the survey resistor of the inverse current. Therefore it must be dimensioned for the same current of the main diode but it can have a lower inverse tension.

The protection reverse current device (direction rail/ structure) is completed by a modified differential switch that gets unhooked (stopping the drainage circuit) as soon as a different reverse current, produced by a fault on the main diode, reaches a dozen of mA.

The adjustable external resistance can be regulated from the minimum to maximum value, allowing a wide current regulations range.

Technical Data

- Maximum reverse tension	1600 V
- Maximum power (continuative)	1500 W
- Maximum resistance	1.8 Ω
- Nominal Current (Duty Cycle = 30%)	30 A
- Impulsive maximum current	300 A
- Permanent maximum current (continuous)	27 A