ENSTO

Characteristics of type

MDC-3 SURGE MONITOR

1. GENERAL

1.1 - Overall dimensions : **H 305 x W 145 x D 95**
(see drawing ref. **W 8999 03 00** for further details)

1.2 - Display : - **6 digits** electro-mechanical **counter**
- **0 – 100 % ammeter** calibrated for 1.5 mA at 50 %

2. ELECTRICAL PERFORMANCE

2.1 - Lightning current impulse operating threshold : **100 A – 8/20**

2.2 - Maximum permissible lightning current impulse : **110 kA – 4/10**

2.3 - Maximum permissible long duration current impulse : **800 A – 2000 µs**

2.4 - Residual voltage at 10 kA - 8/20 : **< 4 kV peak**

2.5- Voltage drop under normal service conditions : **< 10 V rms**

3. MECHANICAL CHARACTERISTICS

3.1 - Protection degree : **IP 67**

3.2 - Weight : app. **2 kg**

4. INSTALLATION

4.1 - Mounting conditions : through **four oblong slots 6 x 9** on **204 x 132**

4.2 - Terminals : **M 12 x L 30 stems** with nut and washers

4.3 - Upper connection (surge arrester side): through covered copper conductor
insulation >= 5000 V rms / S >= 29² / L < 3 m

4.4 – Bottom connection (earth side): through bare copper conductor
S >= 29² / L < 2 m

NOTE : all dimensions are given **in millimeters**.

Better life.
With electricity.

MDC-3 discharge counter

The discharge counter with ammeter records the number of impulses applied to the surge arrester. It indicates the total leakage current through the surge arrester. It is mainly used in conjunction with Station surge arresters.

General : 0-100% ammeter scale calibrated for 1.5 mA at 50 %.

Performances:

- Lightning current impulse operating threshold : 100 A - 8/20
- Maximum permissible lightning current impulse : 110 kA - 4/10
- Maximum permissible long duration current impulse : 800 A - 2000 µs
- Residual voltage at 10 kA - 8/20 : < 4 kV peak
- Voltage drop under normal service conditions : < 10 V rms
- Protection degree : IP67

IDPF common fault indicator

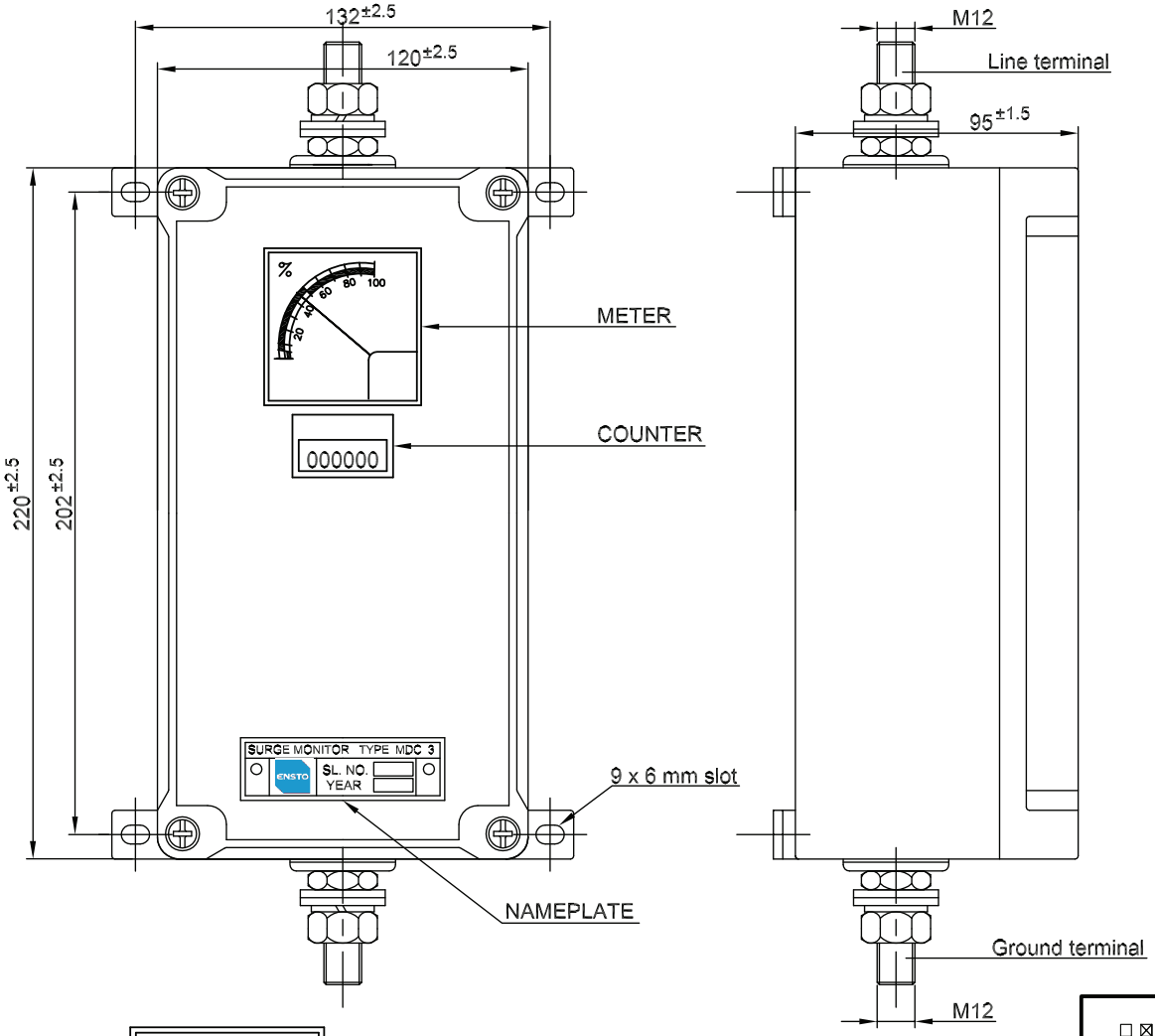
This fault indicator permits to signal any current fault due to the failure of a surge arrester or any other equipment connected to the earth cable on which it is installed.

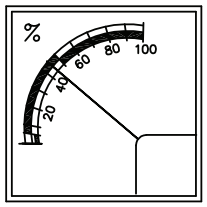
The IDPF is a fully autonomous device powered by the fault current. In the event of failure of the monitored equipment, the electromagnetic indicator rotates to dispaly its reflective orange face marked “DEFAUT”. Its sensitivity is 15 A / 0.1 s.

It is mainly intended for sets of Distribution surge arresters.

The device complies with EDF HM-23/98/011/B specifications.

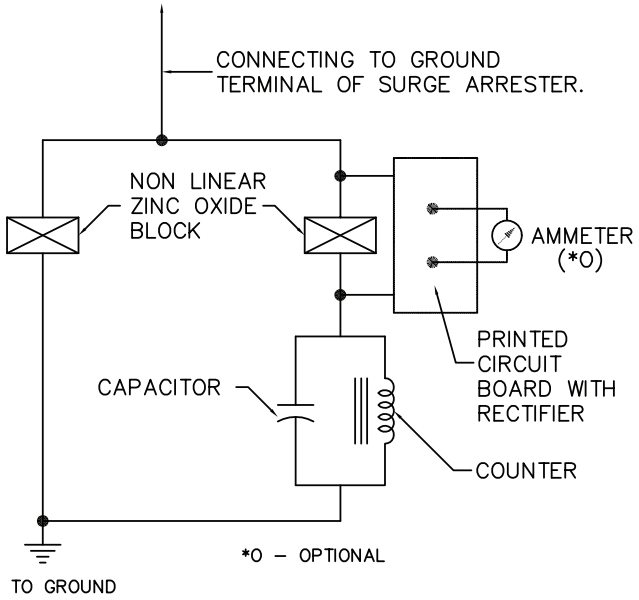
Operation





Schematic diagram of meter

1. 0–5% Zone : Black color
2. 5–50% Zone : Green color
3. 50–100% Zone : Red color



ELECTRICAL SCHEMATIC DIAGRAM

Accessibilité du plan: ☐ Confidentiel ☒ Libre

Modification:	Dessinateur: EM	Date: 08/11/18	Vérification: FM
Tolérances générales:			
Matière:			
Traitement:			
Echelle:	Dessinateur: HS	Date : 23/01/07	Vérification: FM

Type MDC-3 Surge Monitor & Electrical schematic diagram

ENSTO

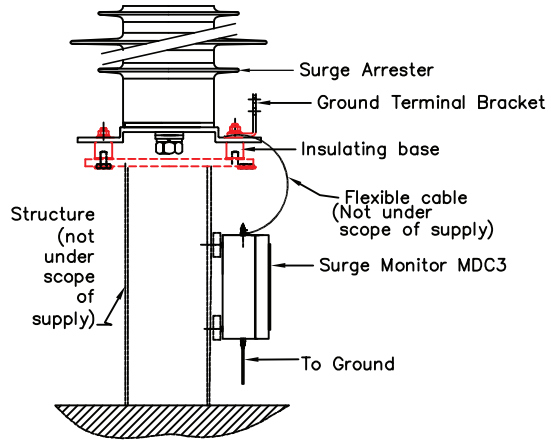
A3 | ENX | W 8999 03 00 / E | Folio : 1 / 1 | Ind.: 04

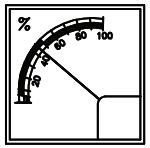
UNLESS STATED ALL DIMENSIONS ARE IN MM.

~~FIRST~~ / THIRD ANGLE PROJECTION
DO NOT SCALE

DEVIATIONS ON UNTOLERANCED DIMENSIONS AS PER IS : 2102 – ~~FINE~~/MEDIUM/~~COARSE~~/~~EXTRA COARSE~~ CLASS

SURGE MONITOR STRUCTURE MOUNTING ARRANGEMENT WITH INSULATING BASE





Schematic diagram of meter
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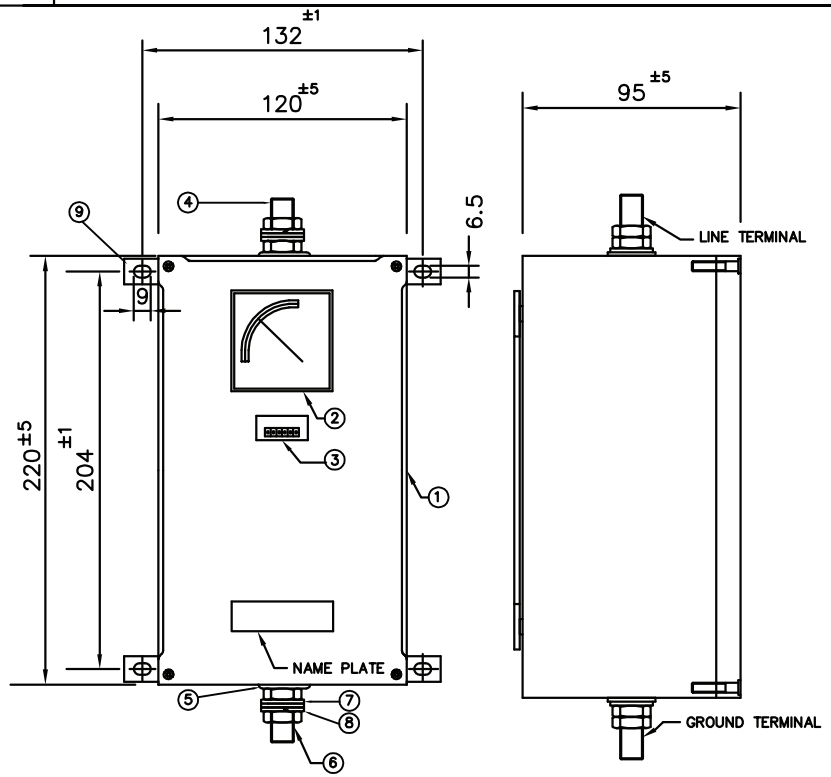

INSTALLATION INSTRUCTIONS

1. DE–ENERGISE THE ELECTRICAL SYSTEM.
2. ISOLATE THE SURGE ARRESTER FROM THE GROUND BEFORE MAKING LINE TERMINAL CONNECTION OF SURGE MONITOR.
3. CONNECT THE LINE TERMINAL OF MDC3 TO THE GROUND TERMINAL BRACKET OF THE SURGE ARRESTER.
4. CONNECT THE GROUND TERMINAL OF THE SURGE MONITOR TO THE EARTHING GRID.
5. MOUNT THE SURGE MONITOR AT A VIEWABLE HEIGHT.
   (RECOMMENDED HEIGHT OF CONNECTION = 1.5 M FROM GROUND LEVEL)
6. NEVER LEAVE THE EARTH TERMINAL OF THE ARRESTER UNGROUNDED.
7. BYPASS THE SURGE MONITOR WITH AN EARTHED CONDUCTOR WHEN ENGAGED IN ANY WORK ON ITS TERMINALS.

INSPECTION

1. METER : POINTER INDICATES THE SUM OF SURFACE LEAKAGE & INTERNAL GRADING CURRENT OF THE ARRESTER.

   COUNTER : MAINTAINS COUNT OF OPERATION UNDERGONE BY THE ARRESTER.

   IF GREEN* : ARRESTER IS HEALTHY.

   IF RED* : ARRESTER IS DEFECTIVE, TO BE REMOVED FROM SERVICE AFTER CROSS VERIFICATION.

   *CROSS VERIFICATION :
   TO ELIMINATE THE SURFACE LEAKAGE CURRENT FROM THE METER READING :
   a) CLEAN THE ARRESTER AND RECHECK (OR)
   b) BYPASS THE SURFACE CURRENT BY USING A 'POLLUTION SHUNT' (ALUMINIUM CHAIN OR COPPER BRAID) OVER THE BOTTOM MOST SHED AT THE ARRESTER GROUND TERMINAL END AND SEPERATELY CONNECT TO GROUND.
   IF THE METER READING CONTINUES TO REMAIN IN THE RED, THE ARRESTER IS DEFECTIVE.

2. NOTE THE INITIAL METER & COUNTER FROM THE FIRST ENERGISATION AND MAINTAIN A REGULAR LOG.

CAUTION :
1. If at any time MDC3 is to be removed from the service, care must be exercised to see that Insulating base is effectively shorted and the arrester base is grounded.
2. Before commencement of the work de–energize the electrical sytem. It may be advantageous to leave the pollution shunt permanently in place.

PART LIST

ITEM	DESCRIPTION	QTY	MATERIAL
1	BOX	1	SMC
2	AMMETER	1	–
3	COUNTER	1	–
4	M12x45 HEXAGONAL BOLT	2	S.S
5	CUP WASHER	2	S.S
6	M12xHEXAGONAL NUT	2	S.S
7	M12xFLAT WASHER	4	S.S
8	M12xSPRING WASHER	2	S.S
9	MOUNTING BRACKET	4	S.S

DRAWN		A Original Issue	C Rev.
CHECKED		DATE 17 05 06	DATE 09 12 10 REVISED
APPROVED			

CAD REF. : GENHV – 092
MATERIAL : XXX
SCALE ÷ NTS
TYPE: MDC 3
DEPT : D&D
TITLE : SURGE MONITOR INSTALLATION INSTRUCTIONS

TRIDELTA Parafoudres S.A.

DRG. No. GENHV – 092

WHEN QUOTING THE DRAWING PLEASE STATE THE LATEST LETTER OF ISSUE