

Modje

Niroo Co.



TECHNICAL DATA

Coupling type	Phase to ground
	Phase to Phase
Frequency range	40 to 500 KHz
Nominal line side impedance	200 to 700 ohm
Nominal equipment side impedance	75/150 unbal/bal
Composite loss	< 2 dB
Return loss	> 12 dB
Dielectric strength of isolating transformer	5 KV
Impulse strength of isolating transformer	10 KV (1.2/5ms)
Power frequency test voltage	5 KV
Drain coil impedance (50Hz)	< 2 ohm
Drain coil max. continuous current (50Hz)	1 A
Rated short time current of drain coil	50A/0.2sec
Long duration pulse current / duration	250A/1ms
Lightning arrester AC spark over voltage	2 KV rms
Lightning arrester impulse discharge rate	5 KA
Average continuous power	350 W
Nominal peak envelope power	500 W
Temperature range	- 20 C° upto 60 C
Dimension (h /w / d)	450 /330/130 mm
Degree of protection of line matching unit cabinet	IP 54
Secondary Arrester	yes

Modje Niroo Co. (LMU)



UNIVERSAL Coupling Device (LMU)

*The MPL - S/DO1 universal coupling device
in conjunction with coupling capacitor fully
meets the server requirements of power Line
Carrier communication according to the
IEC 481 recommendation*



Coupling device function



- *Electrical Insulation between PLC terminals and HVsides.*
- *Matching between HV Line and PLC impedance.*
- *Injection and extraction of signals carrier on power Line and Coaxial cable.*
- *Through connection in intermediate station.*

Advantages of Modje Niroo (LMU)

Personal Protection

Weather proof

- *Wide Band frequency Tunned*
Simple integration in PLC systems because Modje Niroo is a Power Telecom Company and knows all the requirements.



MPL - S/D assembly

The MPL-S assembly consist of:

- *Protection Box.*
- *Grounding Switch.*
- *Primary Lightning.*
- *Universal Coupling unit.*
- *Drain Coil.*
- *Spark gap.*
- *Extension facilities.*
- *Hybrid (forp/p coupling).*

Protection Box

Weather Proof protection Box considered for outdoor installation and it is made of Steel and is considered to be installed outdoors without suffering any deterioration in normal working conditions.

Grounding switch

For the connection the primary terminal to ground, the protection box is fitted with an insulating switch with lateral hand driven maneuver.

Lightening Arrester

The primary lightening arrester that is fitted in protection box is an air insulated characterized by an ignition voltage of ≤ 1200 V and short circuit current of ≥ 5 KA



Universal coupling unit



The universal coupling device is a filter and matching transformer, and has the following functions:

1. Matching the impedance of PLC output with the Impedance of the HV Line.
2. As a bandpass filter in conjunction with coupling capacitor. this filter is capable of covering full operating range from 40-500KHZ. With any value of 2000 to 12000 PFCoupling capacitance. (FIG4)
3. providing galvanic isolation between HV line and coaxial junction terminal

Drain coil and Sparkgap

The Drain coil is used to protect the communication equipments from the Power system voltage and transient over voltage caused by substation switching and atmospheric discharge.



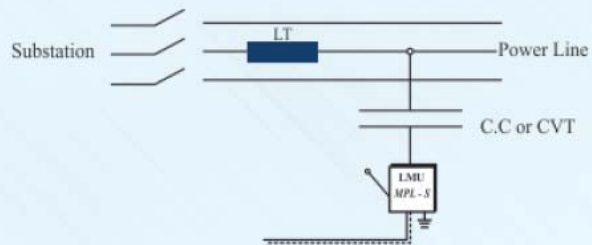
Extension facilities

Primary terminal is Provided as extension facilities the following connection has been done in the primary terminal .

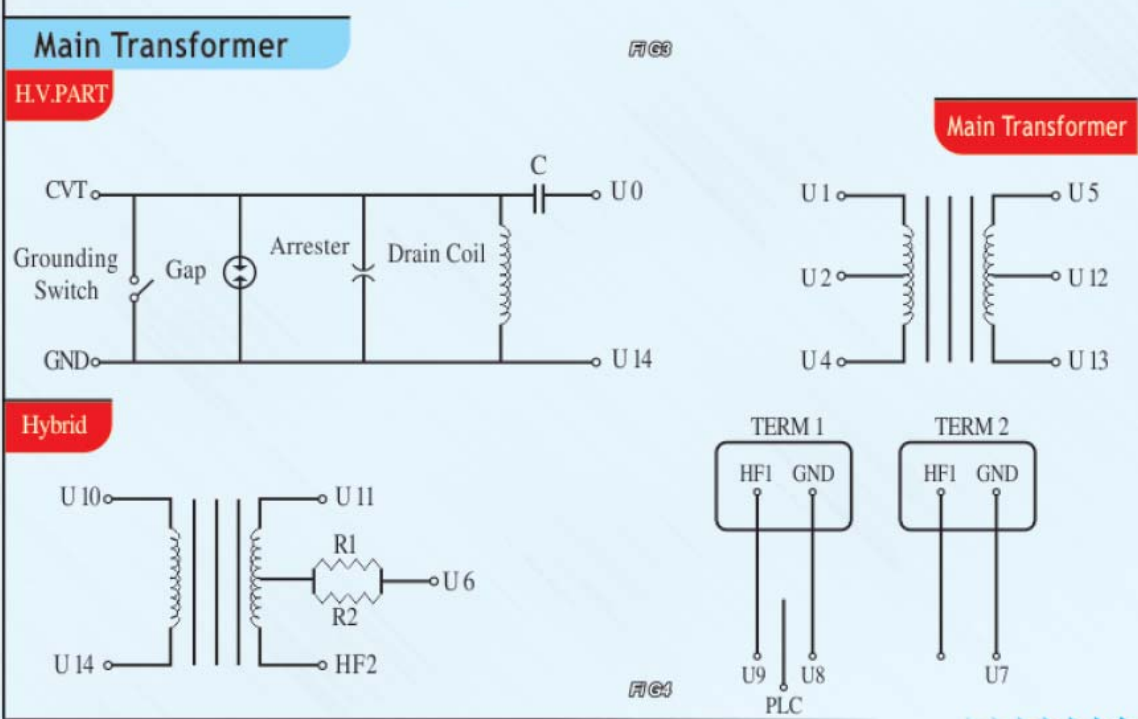
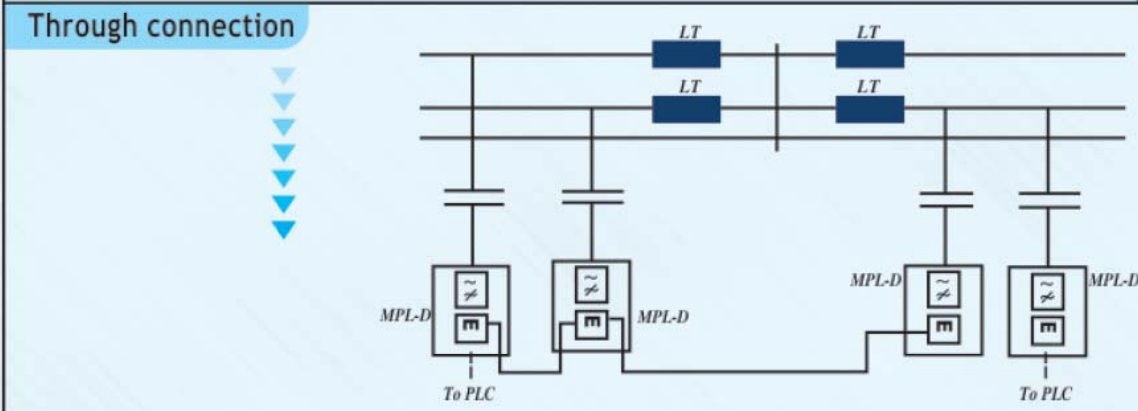
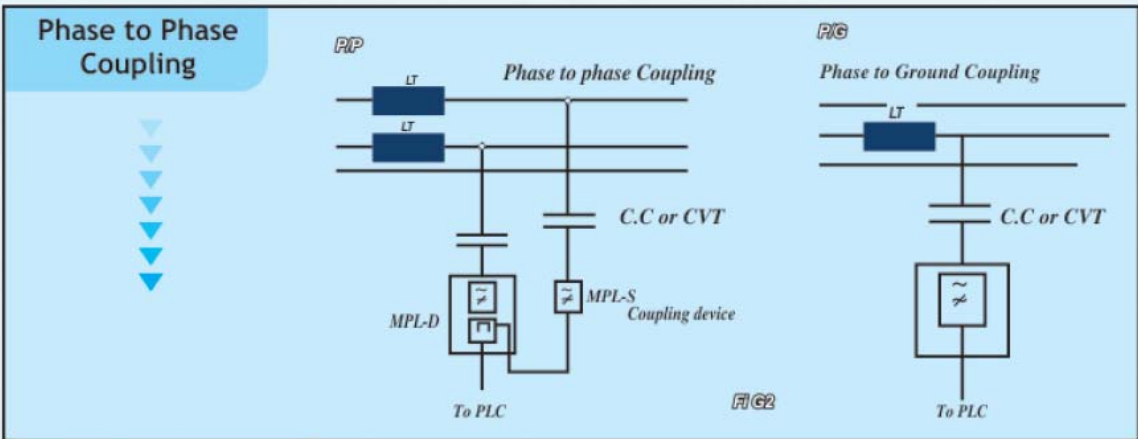
- Coaxial cable connection to PLC .
- Coaxial connection to another coupling device for phase to phase.
- Coaxial connection for through filter.
- Earthing connection .
- Band pass connection.

Type of Coupling

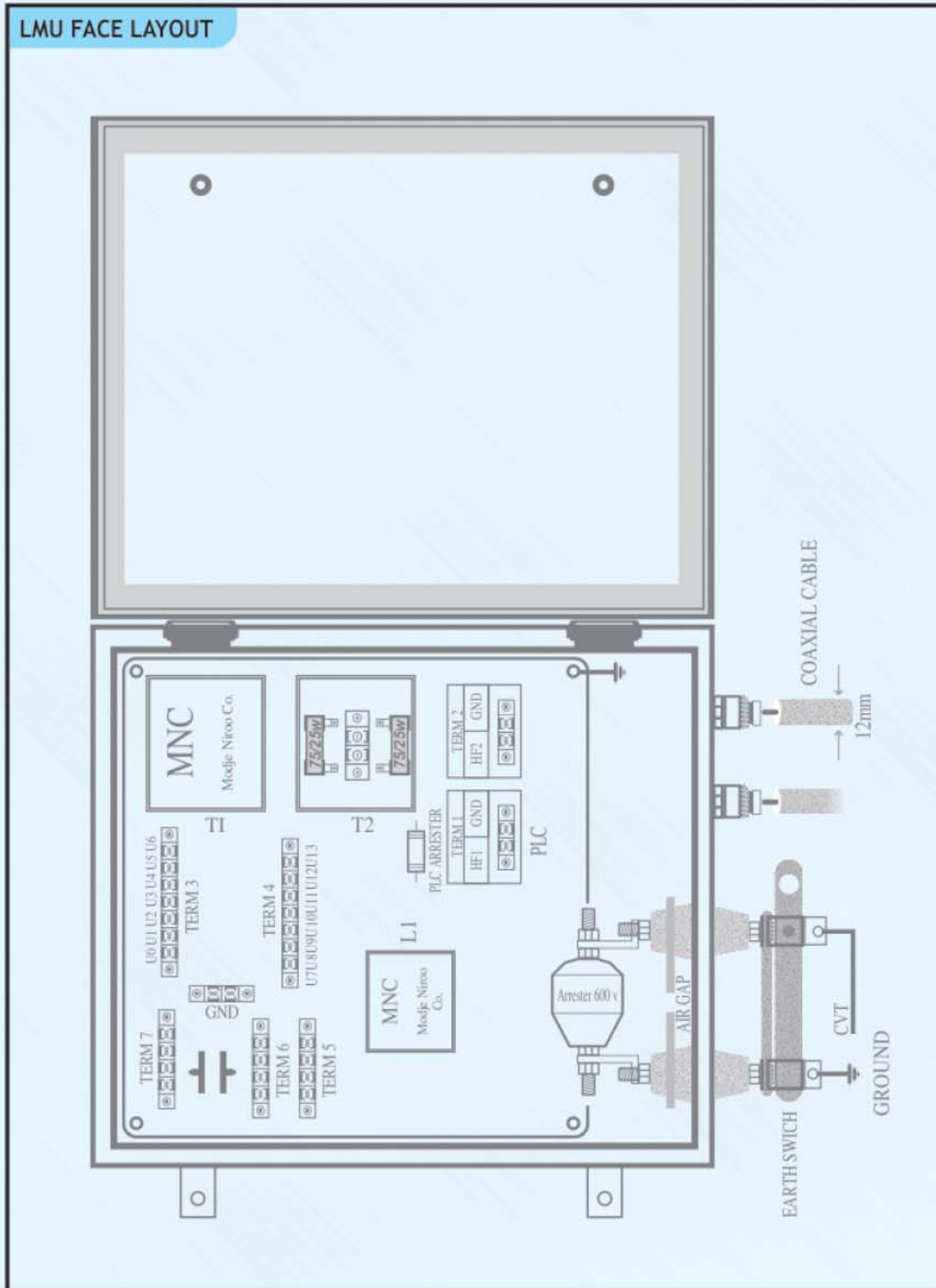
The MPL- S can beused in case of phase to ground coupling (Fig 1) and MPL-D for phase to phase coupling (Fig2)or in case through coupling(Fig3)



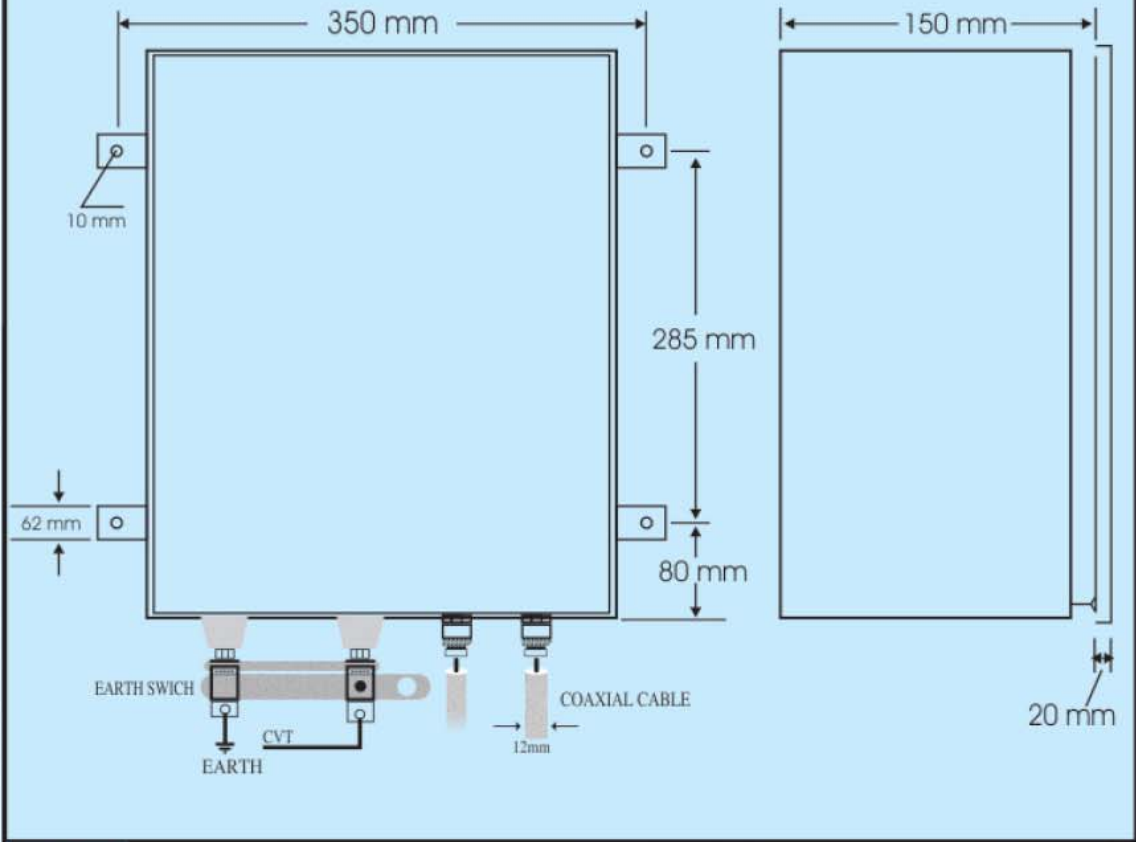
▶▶▶▶▶▶▶▶ PHASE TO GROUND COUPLING



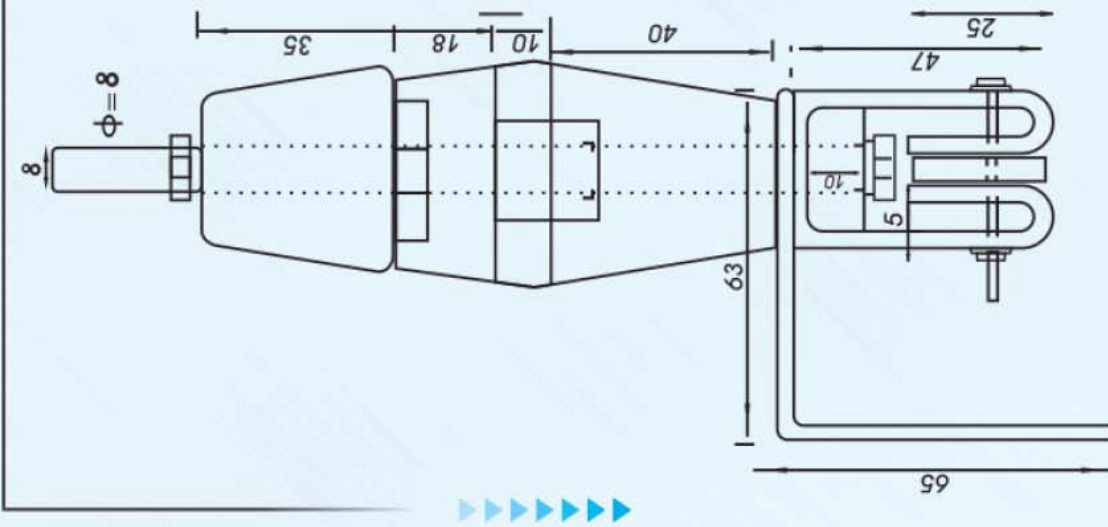
LMU FACE LAYOUT



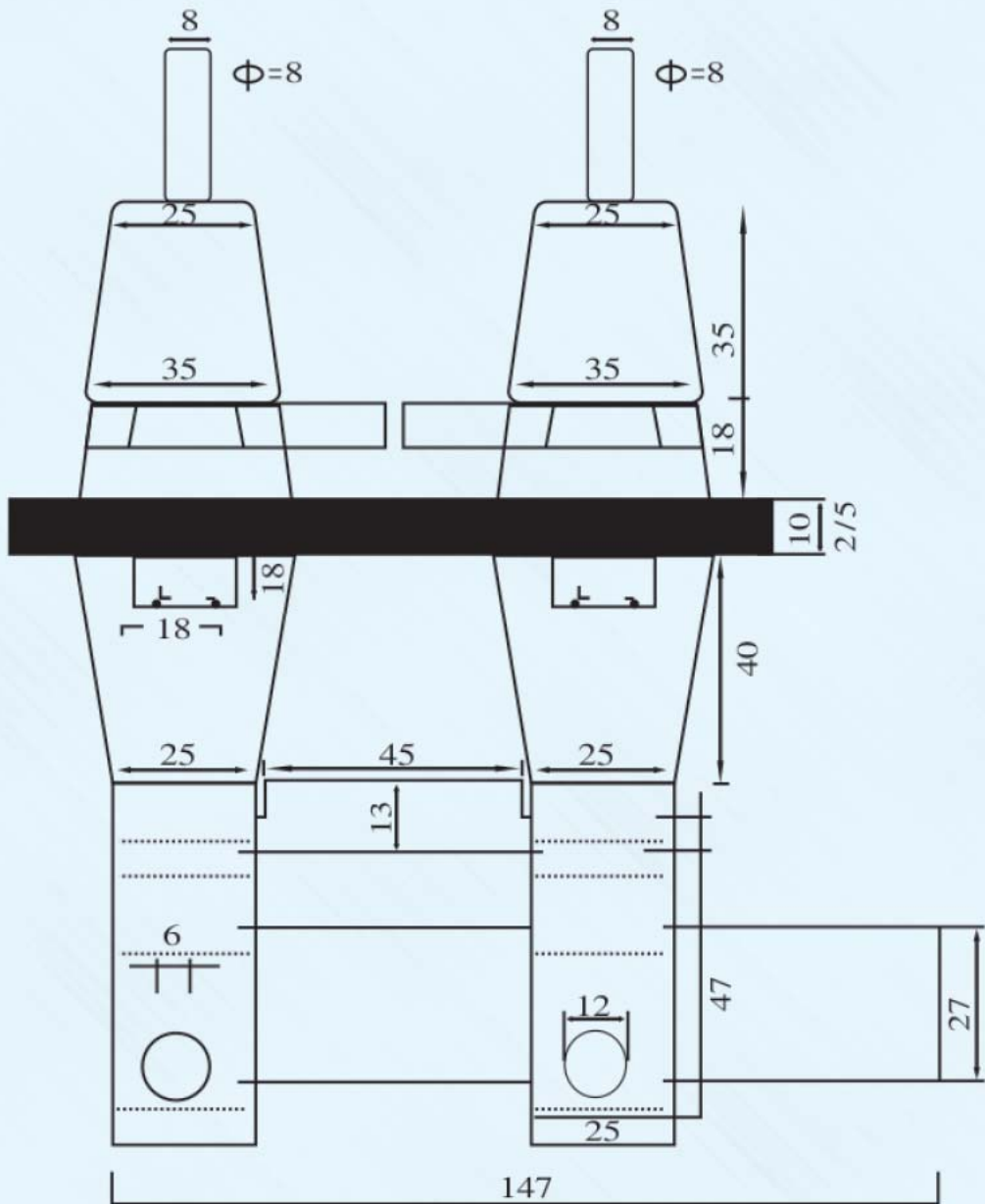
LMU FACE LAYOUT



AIR GAP



LMU FACE LAYOUT



List of material

List of Material	Code No.	S/D Quantity	Remarks
1- Box	402999100	1	Modje Niroo
2- Earthing Switch	131999800	1	Modje Niroo
3- Air Gap	600999230	1	Modje Niroo
4- Insulators	350999400	4	Modje Niroo
5- Protective Device	600999600	1	Pars Arrester
6- Surge Arrester	145999401	1	EPCOS
7- Main Transformer(TI)	105999003	1	Modje Niroo
8- Draining Coil(LI)	105999001	1	Modje Niroo
9- Hybrid transformer	105999002	-/1	Modje Niroo
10- 7Pin Terminal(Term.3/Term.4)	131999007	2	Crouse
11- 4Pin Terminal(Term.5/Term.6/Term.7)	131999004	3	Crouse
12- 2Pin Terminal(Term.1/Term.2)	131999002	4	Crouse
13- Main Board	926999801	1	Modje Niroo(Nogam)
14- Capacitors	181999120	1	Matsushita(Japan)
15- Resistors	186999960	-/2	Russia
16- Nuts	296999120	4	Steal(A2 Italy)
17- Screw	293999100	4	Steal(A2 Italy)
18- Gland	139999402	½	Ortac-P.G13.5
19- Jumper Prograning Instruction	146999100	1	Modje Niroo
20- Lead Jumpers	146999120	8/11	Modje Niroo
21- Ferrite Core	185999100	½	EE-5555APL-3



Modje Niroo Co



Office: No10, Abbas Pour Buil., Brezil, Ave. Vanak Sq., Tehran-IRAN P.O.Box: 143
Tel.: (+9821) 84773810 - 88879381 - 88879383 Fax:(+9821) 88878776