OPERATING MANUAL OF µ-MPD-SPLIT-DXC (4 TO 61A)

4 DIGIT DISPLAY	MEANING OF DISPLAY IN RUN MODE
	Healthy Condition Current in R Ph : 26.8 A
	Healthy Condition Current in Y Ph : 26.0 A
	Healthy Condition Current in B Ph : 25.8 A
	Earth Current : 0.3A
	During Zero current (STOP) condition only test function is executed by pressing TEST key.

4 DIGIT DISPLAY	MEANING OF DISPLAY IN PARA MODE
	SET CURRENT : 28.0 A (4.0A TO 61.0A)
	Set Underload Current : 21.0 A (0.0 to 55.0A)
	Set Earth Fault Current : 1.3 A (0.1 to 25.0A)
	Set Overload curve : 5 sec. Curve (0/5/10/15/20/2 sec. Curve)
	Set SPP Trip Time : 3 sec. (3 to 20 sec.)
	Set Underload Trip Time : 8 sec. (6 to 30 sec.)
	Calibration OFFSET of R ph : 0.0 A (+ / - 1.0A)
	Calibration OFFSET of Y ph : 0.0 A (+ / - 1.0A)
	Calibration OFFSET of B ph : 0.0 A (+ / - 1.0A)
	SCROLL TIME : - 2 Sec (0 TO 10 Sec) 0 :- Only one ph current indication & select phase by " ▲" key 1 to 10 : - One by one all 3 ph current indication (time for 1 ph indication is 2 Sec)
	Phr : - Enable (Enable / Disable) If ph-r fault is present & if Phase Reversal is Enable (E) then MPD Trip on ph-r automatically. If it is Disable (d) then MPD will not trip on ph-r.
	Auto Reset : - Enable (Enable / Disable) If Auto Reset is 'Enable' then MPD Reset automatically after 10 mins. If it is 'Disable' then MPD Reset manually by pressing Reset Key.
	Set Lock Rotor : 007 (3 to 20) 3 to 20 times of set Current. (i.e. 300% to 2000%)
	Set Definite Trip Time for Overload : 2 sec. (2 to 900 sec.) Overload tripping according to settable DEFINITE time (d), if Set O/L CURVE (c) should be 000. Otherwise overload tripping according to settable O/L CURVE (c).

KEY FUNCTIONS

For Password :

By pressing "SETTINGS" key, display shows P ⬚⬚(P100)
then press " VALUE ▲" key to P106, then press " PARA" key

SETTINGS

Parameter can be selected by pressing PARA key
There are 14 parameters in µ-MPD-SPLIT-DXC (4 TO 61A)

1) Set Current (4.0A TO 61.0A)
2) Set Underload Current (0.0A TO 55.0A)
3) Earth Fault Current (0.1 TO 25.0A)
4) Set Overload curve (0/5/10/15/20/2 sec. Curve)
5) Set SPP Trip Time (3 TO 20 sec.)
6) Set Underload Trip Time (6 TO 30 sec.)
7) Offset of R-ph (-1.0 TO + 1.0A)
8) Offset of Y-ph (-1.0 TO + 1.0A)
9) Offset of B-ph (-1.0 TO + 1.0A)
10) Scroll Time (0 TO 10 Sec)
11) Auto Reset (Enable / Disable)
12) Phase Reversal (Enable / Disable)
13) Set Lock Rotor (3 TO 20)
14) Definite Time (2 TO 900sec.)

VALUE▼ TEST

a) TEST : RUN MODE Display & Current is 00.0 (i.e.Starter OFF) :- Then this key is pressed, TEST FUCTION is executed.

b) VALUE▼ : If in PARA MODE, then value of the selected parameter will be decremented by pressing this key.

VALUE▲

a) Selection of phase current display :
In RUN MODE & Scroll time = 0 Sec then select any phase current which is displayed continuously.

b) VALUE▲ : If in PARA MODE, then value of the selected parameter will be incremented by pressing this key.

RESET

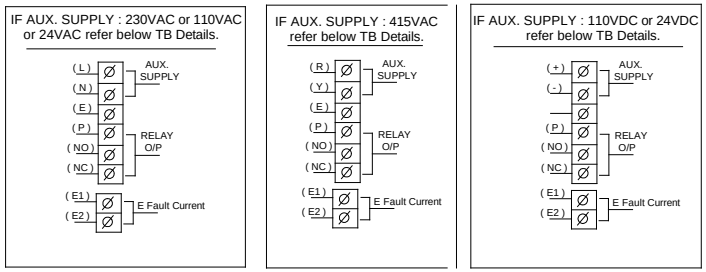
This key is used to accept & reset the fault occured in µ-MPD such as SPP, Ph-r, b04.8, o28.5, tESt, U14.4, E00.8, L54.2, S60.1.

FAULT ANNUNCIATIONS

There are 8 Annunciations in µ - MPD - SPLIT - DXC

	Meaning of Fault Annunciation		Meaning of Fault Annunciation
	Single Phasing Protection Single Phasing of R-ph		Current Underload : 20.0A Current Underload of R-ph
	Single Phasing Protection Single Phasing of Y-ph		Current Underload : 19.3A Current Underload of Y-ph
	Single Phasing Protection Single Phasing of B-ph		Current Underload : 19.1A Current Underload of B-ph
	Phase-reversal		Earth Fault Current : 0.8A
	Unbalance Current : 7.4A Unbalance Current between R-ph & Y-ph		Lock Rotor Trip : 78.5A Lock Rotor Trip of R-ph
	Unbalance Current : 7.6A Unbalance Current between Y-ph & B-ph		Lock Rotor Trip : 79.9A Lock Rotor Trip of Y-ph
	Unbalance Current : 7.0A Unbalance Current between B-ph & R-ph		Lock Rotor Trip : 80.1A Lock Rotor Trip of B-ph
	Current overload : 28.8A Current Overload of R-ph		Short Circuit Trip : 82.5A Short Circuit Trip of R-ph
	Current overload : 29.1A Current Overload of Y-ph		Short Circuit Trip : 83.4A Short Circuit Trip of Y-ph
	Current overload : 30.2A Current Overload of B-ph		Short Circuit Trip : 83.7A Short Circuit Trip of B-ph

TERMINAL DETAILS



NOTE : -

a) Wait for 10 sec for parameter saving. After 10 sec it will automatically change from PARA to RUN Mode

b) Setting of various parameters are shown as a example. All values should set according to Motor ratings.

c) Normally value of all C (offset) should be 0.

d) Short ckt :- (Lock Rotor (r) +1) times of Set current.

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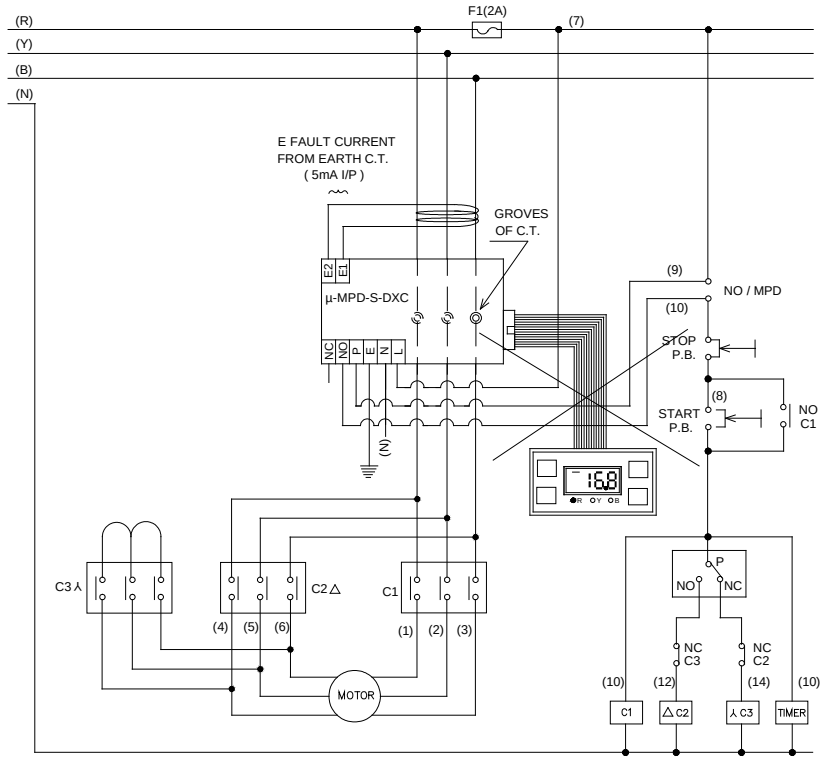
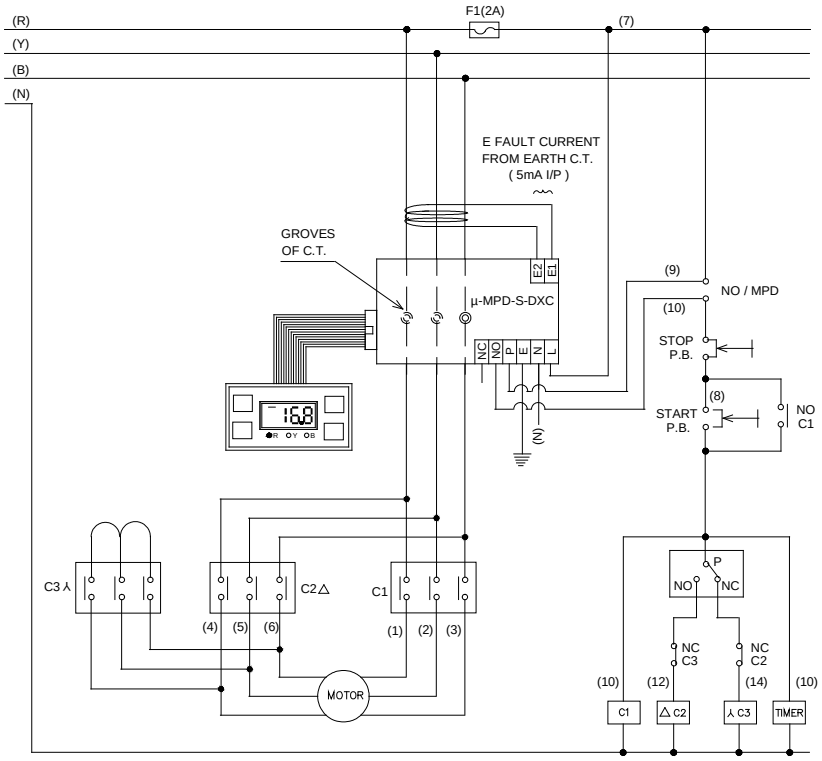
OPERATING MANUAL OF µ-MPD-SPLIT-DXC (4 TO 61A)

WIRING DIAGRAM OF µ-MPD-SPLIT-DXC (4 TO 61A)
WITH STAR - DELTA STARTER





IMP. NOTE :-

i) PL. DO NOT MIX FRC CABLE OF DISPLAY IN POWER CABLE.
KEEP 500 mm MIN. DISTANCE BETWEEN FRC & POWER CABLE.

ii) ALL R, Y, B CONDUCTORS SHOULD PASS THROUGH EARTH C.T.
EXCEPT NEUTRAL.

iii) EARTH C.T. SHOULD BE 25A / 5mA

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PARAMETER LIST OF µ - MPD DX-C / SDX-C 4 -61A

SR.NO.	PARAMETER	RANGE	PASSWORD
1	SET O/L CUR.	4 TO 61A	Factory / Engg
2	SET UNDELOAD (U)	00 TO 55A	Factory / Engg
3	SET EARTH (E)	0.1 TO 25.0A	Factory / Engg
4	O/L CURVE (c)	0/5/10/15/20/2 sec. curve	Engg
5	SPP TIME (P)	3 TO 20 SEC.	Engg
6	UL TIME (L)	6 TO 30 SEC.	Engg
7	Offset R (C)	+/- 2A	Factory / Engg
8	Offset Y (C)	+/- 2A	Factory / Engg
9	Offset B (C)	+/- 2A	Factory / Engg
10	SCROLL TIME (t)	0 TO 10	Factory / Engg
11	PHASE REV (Ph)	ENABLE / DISABLE	Factory / Engg
12	AUTO RESET (Ar)	ENABLE / DISABLE	Factory / Engg
13	LOCK ROTOR (r)	3 TO 20	Engg
14	DEFINITE TIME (d)	2 TO 900 SEC.	Engg

PASSWORD:

There are two PASSWORDS to protect parameters from unauthorized changes.

1) Factory Password – Set **P106** & then Press **PARA** key
2) Engg. Password – Set **P147** & then Press **PARA** key

SETTINGS:

1) OVERLOAD TRIP TIME:

Overload tripping as per settable DEFINITE time (d) only if Set O/L CURVE (c) should be 000. Otherwise overload tripping according to settable O/L CURVE (c).

2) LOCK ROTOR:

Lock rotor settable range is 3 to 20 times of set Current. (i.e. 300% to 2000%)

No settable parameter for Short ckt, but it is depends upon lock rotor setting.

That is short ckt is Set lock rotor + 1.

TRIPPING & FAULT MESSAGE

OVERLOAD:

If any phase current (R, Y, B) > SET O/L CUR then MPD will trip on Over Load according to settable O/L Curve (see page- **IT CHARECTERISTICS**) or settable definite time. Display will blink for **'o'** & shows maximum current & maximum phase current also indicate with the help of 'LED indication'.

UNBALANCE:

If difference between any two phase current > (SET OL CUR/ 3) then MPD will trip on Unbalance & display will blink for **'b'** & shows current difference.
Current difference between two phases also indicates with the help of 'LED indications'.

SINGLE PHASE PROTECTION:

If any one phase, out of R, Y, B is absent or OFF then MPD will trip on Single Phase with Settable SPP trip time (P) & display will shows **'SPP'** & their respective phase (Which is absent /less or equal to 10 A) also indicate with the help of 'LED indication'.

PHASE REVERSE:

If any two phases (R, Y & B) are interchanged then MPD will trip on phase reversal and display will shows
'Ph-r'

UNDERLOAD:

If all 3 phases (R, Y, B) < SET UNDELOAD then MPD will trip on under load with
Settable UL trip time (L). Display will blink for **'U'** & shows maximum current out of three phases also indicate with the help of 'LED indication'.

LOCK ROTOR:

If any one phase current (R, Y, B) > SET O/L CUR x Set Lock Rotor (r), then MPD will trip on Lock Rotor . Display will blink for **'L'** & shows maximum current and the phase in which maximum current flows also indicate with the help of 'LED indication'.

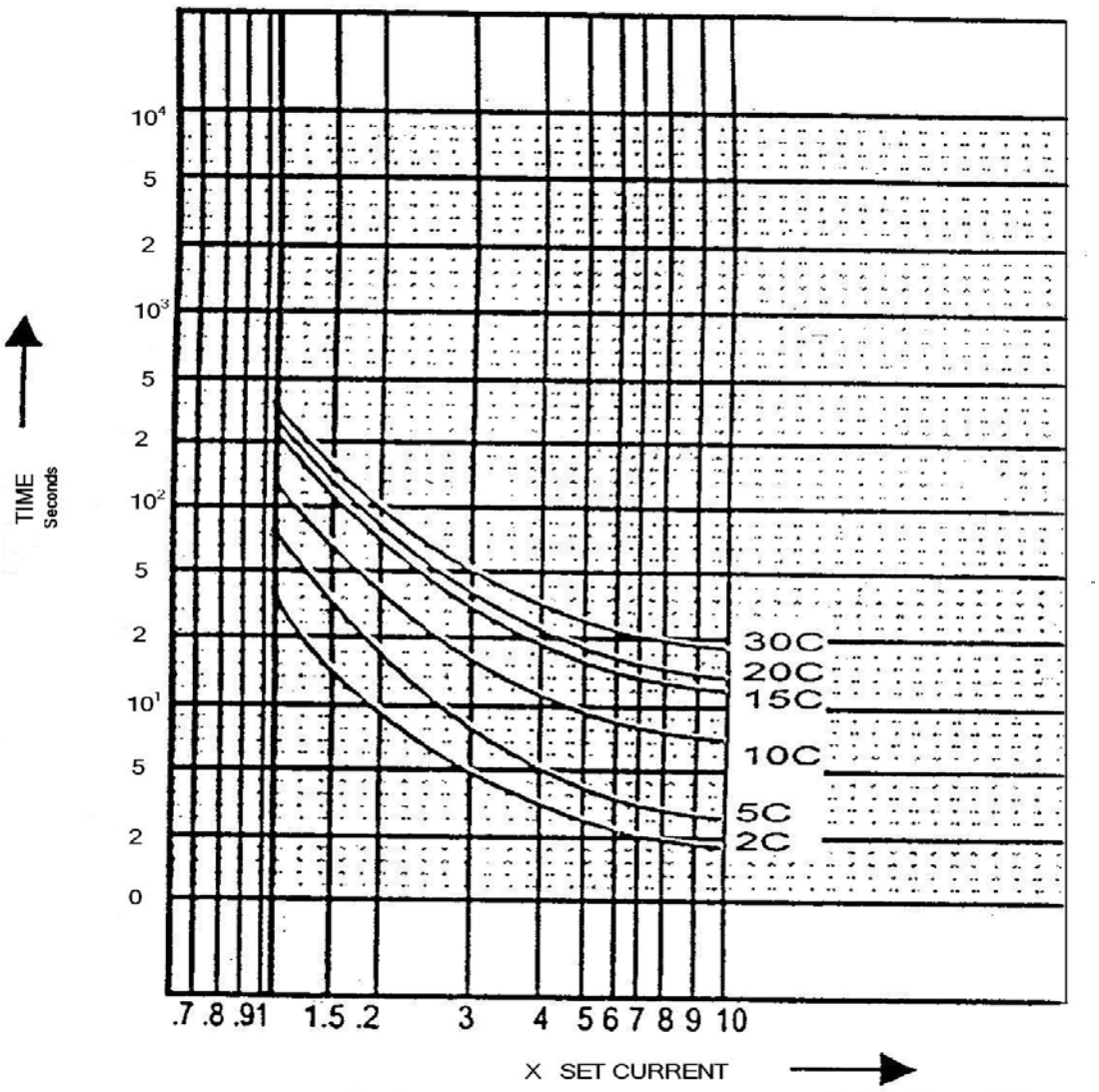
SHORT CKT:

If any one phase current (R, Y, B) > SET OL CUR x (Set Lock Rotor + 1) then MPD will trip on Short Ckt. & Display will blink for **'S'** & shows maximum current and the phase in which maximum current flows also indicate with the help of 'LED indication' .

EARTH FAULT:

If Earth current (e) > SET EARTH then MPD will trip on Earth Fault & display will blink for **'E'** & shows recent Earth current with the help of 'LED indication'.

IT CHARACTERISTICS



Definite Time Charateristics of µ MPD Model : DX-C / SDX-C / EX-C / S-EX-C