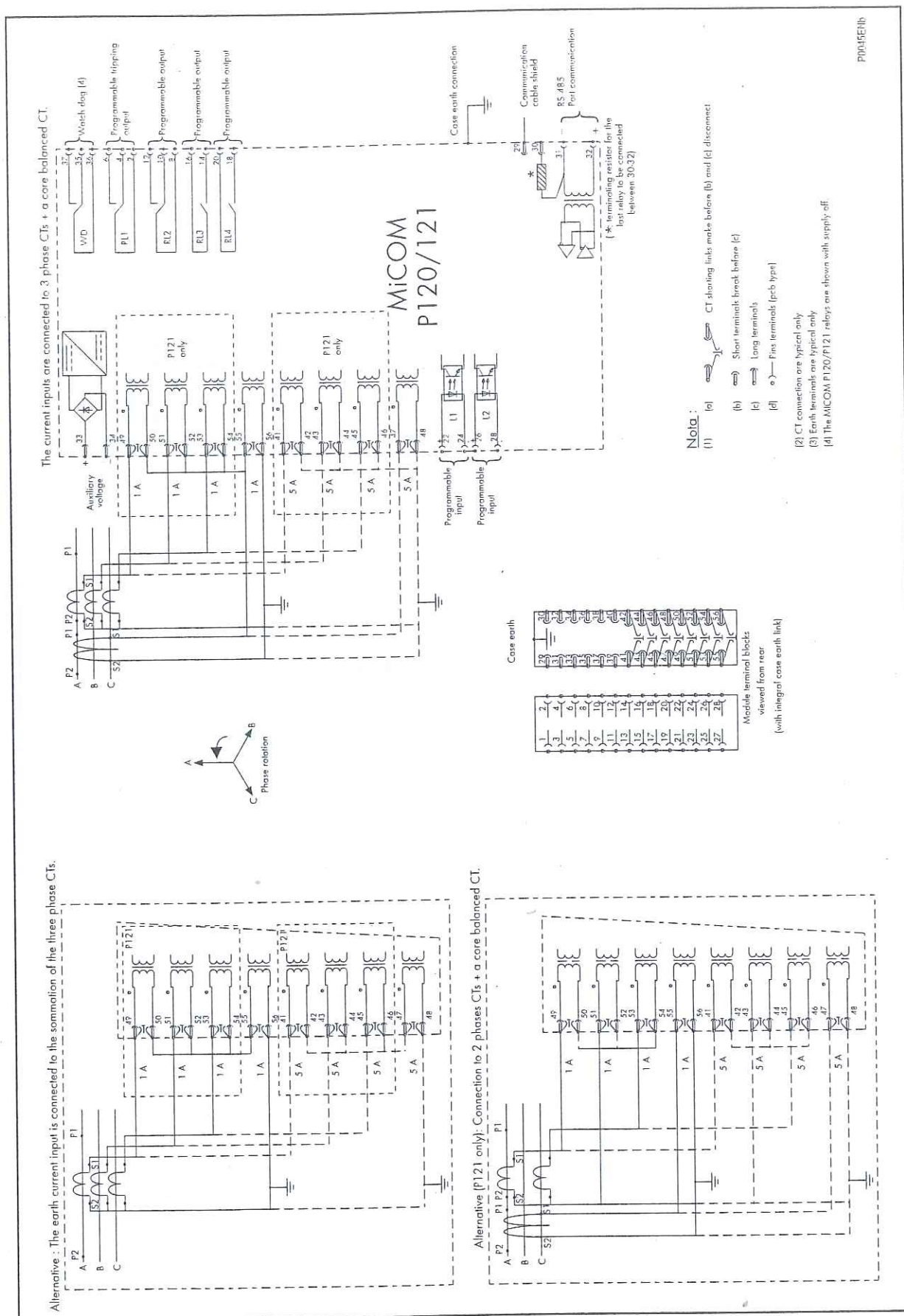
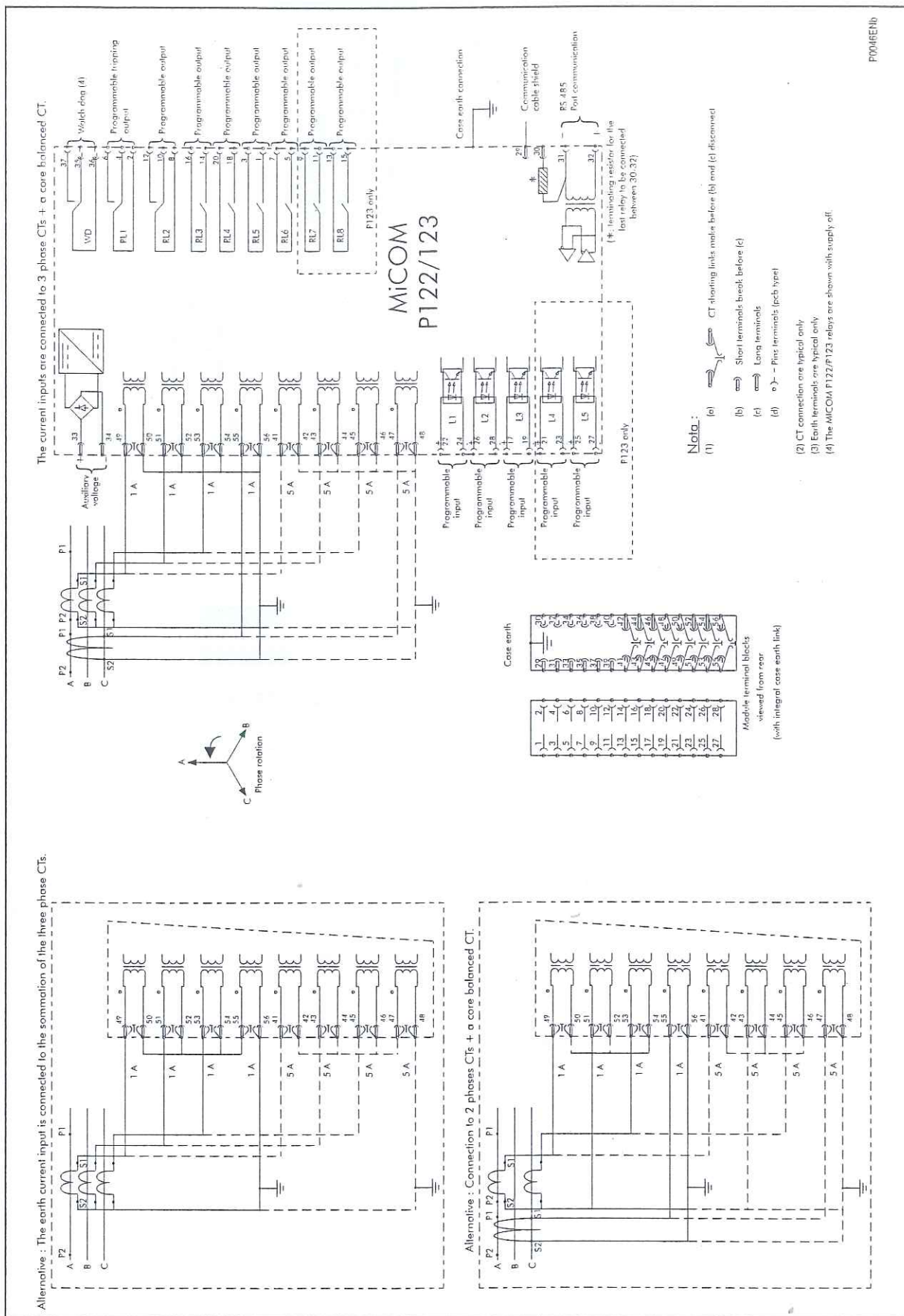


# **Connection Diagrams**

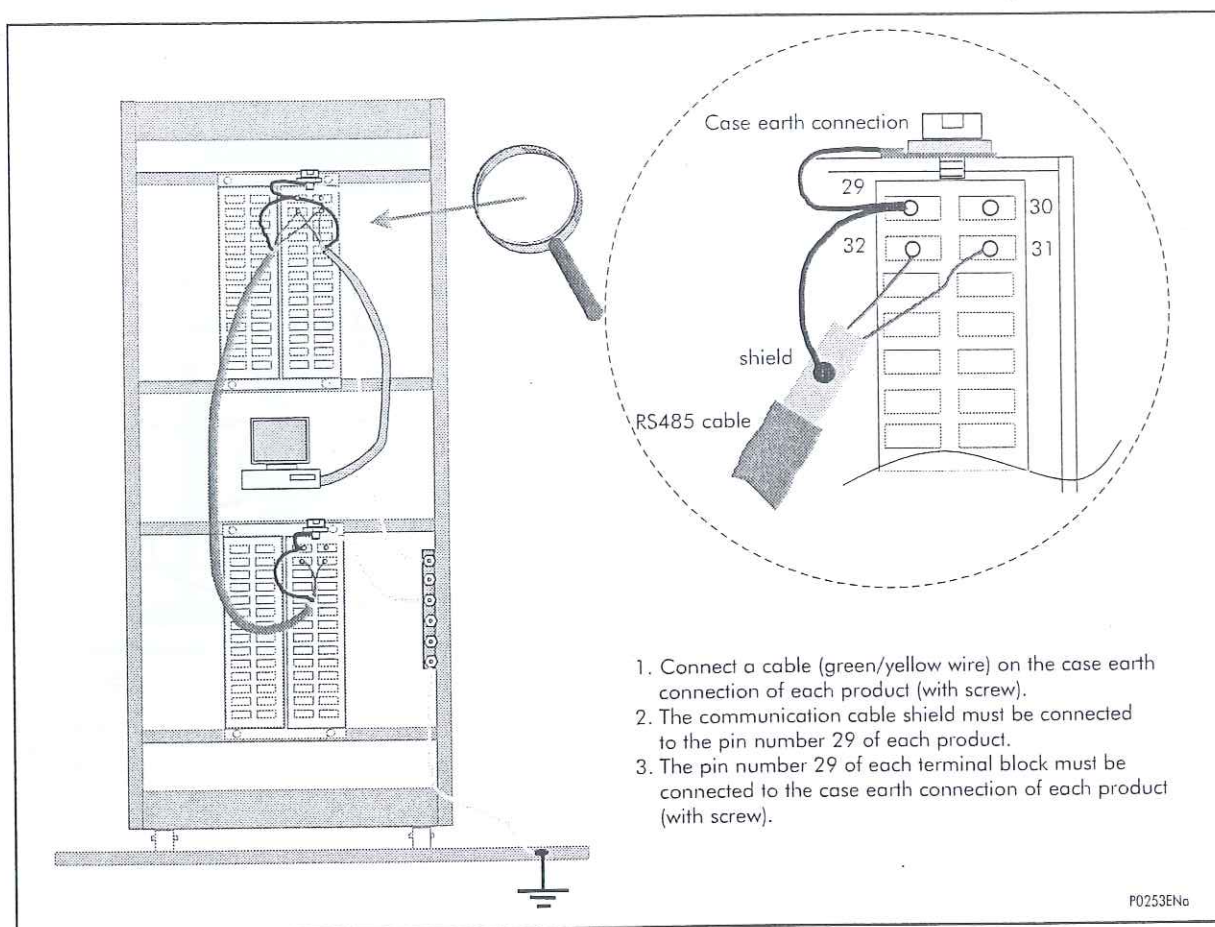




SCHEME REPRESENTING MiCOM RELAY OFF

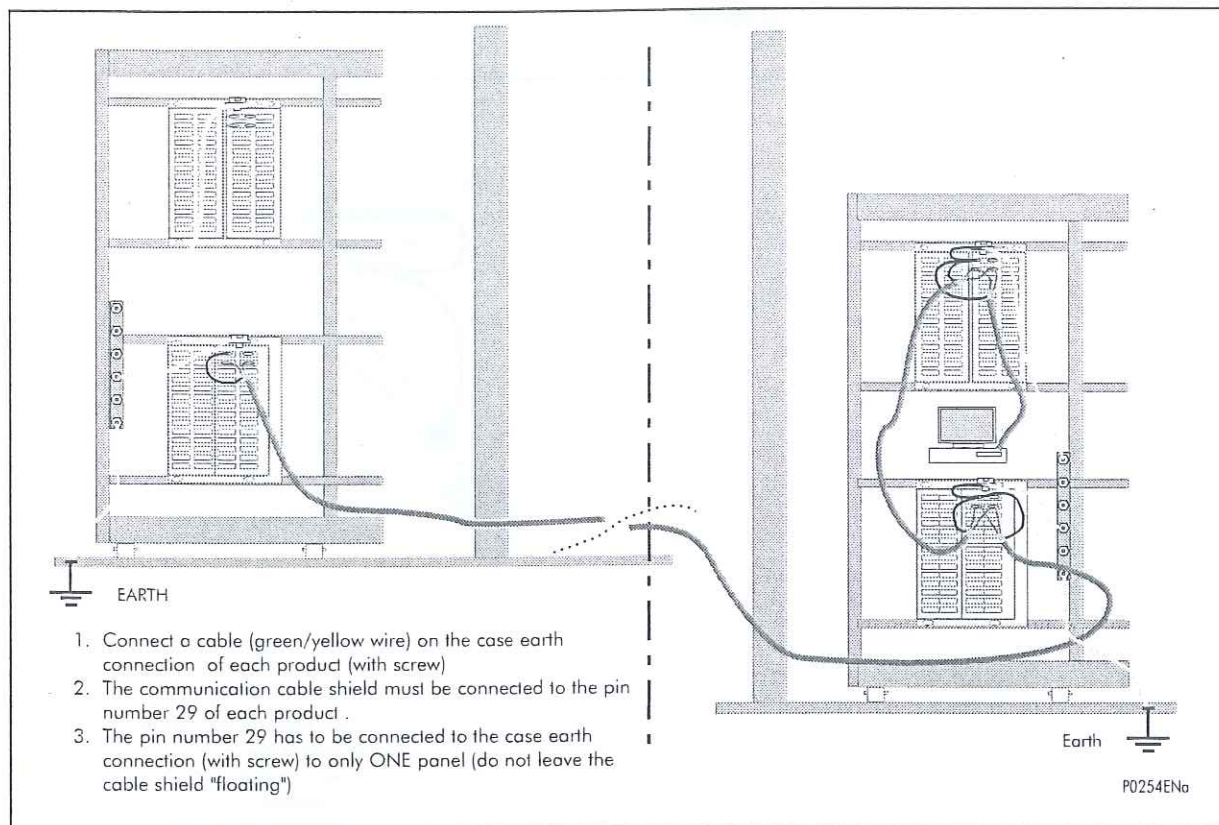
## 1. COMMUNICATION CABLE CONNECTION

### 1.1 Products plugged in the same panel





## 1.2 Communication between distant products



MiCOM P120/P121/P122/P123

# **COMMISSIONING TEST & RECORD SHEETS**

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**1. COMMISSIONING TEST SHEETS****1.1 Relay identification**

Commissioning date : \_\_\_\_\_

Engineer : \_\_\_\_\_

Substation : \_\_\_\_\_

Circuit : \_\_\_\_\_

Network nominal frequency: \_\_\_\_\_

MiCOM Overcurrent relay model : ☐ P120 ☐ P121 ☐ P122 ☐ P123

Serial number : \_\_\_\_\_

Rated current In : \_\_\_\_\_

Auxiliary voltage Uaux : \_\_\_\_\_

Communication protocol : \_\_\_\_\_

Language : \_\_\_\_\_

**1.2 Commissioning test record**

(put a cross after each checked stage)

Serial number check ? ☐All current transformer shorting switches closed ? ☐Wiring checked against diagram (if available) ? ☐Case earth installed ? ☐Test block connections checked (if installed) ? ☐Insulation tested ? ☐**Auxiliary supply control**Auxiliary voltage to relay ☐

Auxiliary voltage value \_\_\_\_\_ Vdc/Va

Watchdog contacts

With auxiliary supply off ☐ Terminals 35 and 36With auxiliary supply on ☐ Terminals 35 and 36

**Measurements**

|                 | Applied value | Relay value |
|-----------------|---------------|-------------|
| PHASE CT INPUT  |               |             |
| Phase A current | _____ A       | _____ A     |
| Phase B current | _____ A       | _____ A     |
| Phase C current | _____ A       | _____ A     |
| EARTH CT INPUT  |               |             |
| Earth current   | _____ A       | _____ A     |

**Phase protection test**

|                                  | Theoretical value | Relay value |
|----------------------------------|-------------------|-------------|
| $I_{>}$ threshold                | _____ A           |             |
| $I_{>}$ threshold                |                   | _____ A     |
| $I_{>}$ drop threshold           |                   | _____ A     |
| Time delay                       |                   |             |
| Time delay at $2 \times I_{>}$   | _____ ms          | _____ A     |
| Time delay at $10 \times I_{>}$  | _____ ms          | _____ A     |
| $I_{>>}$ threshold               | _____ A           |             |
| $I_{>>}$ threshold               |                   | _____ A     |
| $I_{>>}$ drop threshold          |                   | _____ A     |
| Time delay                       |                   |             |
| Time delay at $2 \times I_{>>}$  | _____ A           | _____ A     |
| Time delay at $10 \times I_{>>}$ | _____ A           | _____ A     |

**Earth protection test**

|                                  | Theoretical value | Relay value |
|----------------------------------|-------------------|-------------|
| $I_e >$ threshold                | _____ A           |             |
| $I_e >$ threshold                |                   | _____ A     |
| $I_e >$ drop threshold           |                   | _____ A     |
| Time delay                       |                   |             |
| Time delay at $2 \times I_e >$   | _____ ms          | _____ ms    |
| Time delay at $10 \times I_e >$  | _____ ms          | _____ ms    |
| $I_e >>$ threshold               | _____ A           |             |
| $I_e >>$ threshold               |                   | _____ A     |
| $I_e >>$ drop threshold          |                   | _____ A     |
| Time delay                       |                   |             |
| Time delay at $2 \times I_e >>$  | _____ ms          | _____ ms    |
| Time delay at $10 \times I_e >>$ | _____ ms          | _____ ms    |

Commissioning Engineer

Date

\_\_\_\_\_

\_\_\_\_\_

## 2. COMMISSIONING SETTING RECORD SHEETS

### 2.1 MiCOM P120 commissioning setting record sheets

#### 2.1.1 OP PARAMETERS Menu

Password : \_\_\_\_\_

Reference : \_\_\_\_\_

Frequency : ☐ 50 Hz ☐ 60 Hz

#### 2.1.2 CONFIGURATION Menu

##### 2.1.2.1 Display

|            |                            |                            |                            |
|------------|----------------------------|----------------------------|----------------------------|
| E/Gnd text | <input type="checkbox"/> N | <input type="checkbox"/> E | <input type="checkbox"/> G |
|------------|----------------------------|----------------------------|----------------------------|

##### 2.1.2.2 CT Ratio

|                    |                    |   |
|--------------------|--------------------|---|
| E/Gnd CT Primary   | Primary CT ratio   |   |
| E/Gnd CT Secondary | Secondary CT ratio | <input type="checkbox"/> 1 A <input type="checkbox"/> 5 A |

##### 2.1.2.3 LEDs 5 to 8 configuration

| Functions       | LED 5                        |                             | LED 6                        |                             | LED 7                        |                             | LED 8                        |                             |
|-----------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| $I_e>/I>$       | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e>/tl>$     | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e>>/I>>$     | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e>>/tl>>$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e>>>/I>>>$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e>>>/tl>>>$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

#### 2.1.3 COMMUNICATION Menu

##### 2.1.3.1 COMMUNICATION Menu (MODBUS)

|                 |                                     |   |
|-----------------|-------------------------------------|---|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO                                 |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds                            |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds                          |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds                          |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds                         |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even <input type="checkbox"/> None |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8                                  |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2                                  |
| Relay Address   |                                     |   |

## 2.1.3.2 COMMUNICATION Menu (Courier)

|                 |                              |                             |
|-----------------|------------------------------|-----------------------------|
| Communication ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Relay Address   |                              |                             |

## 2.1.3.3 COMMUNICATION Menu (IEC 60870-5-103)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Relay Address   |                                     |                                     |

## 2.1.3.4 COMMUNICATION Menu (DNP3)

|                 |                                     |                                     |                               |
|-----------------|-------------------------------------|-------------------------------------|-------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |                               |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |                               |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |                               |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |                               |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |                               |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       | <input type="checkbox"/> None |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |                               |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |                               |
| Relay Address   |                                     |                                     |                               |

## 2.1.4 PROTECTION Menu

## 2.1.4.1 [50N/51N] E/Gnd

|            |                               |                              |                             |
|------------|-------------------------------|------------------------------|-----------------------------|
| $I_e > ?$  | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |                             |
| $I_e >$    | len                           |                              |                             |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT | <input type="checkbox"/> RI |

2.1.4.1.1 [51N]  $I_e >$  DMT

|             |    |
|-------------|----|
| $t_{I_e} >$ | ms |
|-------------|----|

2.1.4.1.2 [51N]  $I_e >$  IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
| Tms  |                                  |                                  |



2.1.4.1.3 [51N]  $I_e > Rl$ 

|   |  |
|---|--|
| K |  |
|---|--|

2.1.4.2 [51N]  $I_e >>$ 

|           |                              |                             |
|-----------|------------------------------|-----------------------------|
| $I_e >>$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>$  | len                          |                             |
| $tl_e >>$ | ms                           |                             |

2.1.4.3 [51N]  $I_e >>>$ 

|             |                              |                             |
|-------------|------------------------------|-----------------------------|
| $I_e >>> ?$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>>$   | len                          |                             |
| $tl_e >>>$  | ms                           |                             |

## 2.1.5 AUTOMAT.CTRL Menu

## 2.1.5.1 Trip Command allocation

|                 |                              |                             |
|-----------------|------------------------------|-----------------------------|
| Trip $tl_e >$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip $tl_e >>$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip $tl_e >>>$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.1.5.2 Latch Function allocation

|                  |                              |                             |
|------------------|------------------------------|-----------------------------|
| Latch $tl_e >$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Latch $tl_e >>$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Latch $tl_e >>>$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.1.5.3 Blocking logic allocation

|                    |                              |                             |
|--------------------|------------------------------|-----------------------------|
| Block $tl_e > =$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Block $tl_e >> =$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Block $tl_e >>> =$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.1.5.4 Output Relays allocation (RL2 to RL4)

| Functions  | RL 2                         |                             | RL 3                         |                             | RL 4                         |                             |
|------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| trip       | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >$    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e >$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>$   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e >>$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>>$  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $tl_e >>>$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.1.5.5 Inputs allocation

|         |                               |                                  |                                |
|---------|-------------------------------|----------------------------------|--------------------------------|
| Input 1 | <input type="checkbox"/> None | <input type="checkbox"/> Unlatch | <input type="checkbox"/> 52a   |
|         | <input type="checkbox"/> 52b  | <input type="checkbox"/> CB FLT  | <input type="checkbox"/> Aux 1 |
|         | <input type="checkbox"/> Aux2 | <input type="checkbox"/> Blk log |                                |
| Input 2 | <input type="checkbox"/> None | <input type="checkbox"/> Unlatch | <input type="checkbox"/> 52a   |
|         | <input type="checkbox"/> 52b  | <input type="checkbox"/> CB FLT  | <input type="checkbox"/> Aux 1 |
|         | <input type="checkbox"/> Aux2 | <input type="checkbox"/> Blk log |                                |

## 2.2 MiCOM P121 commissioning setting record sheets

## 2.2.1 OP PARAMETERS Menu

Password : \_\_\_\_\_

Reference : \_\_\_\_\_

Software version : \_\_\_\_\_

Frequency : ☐ 50 Hz ☐ 60 Hz

## 2.2.2 CONFIGURATION Menu

## 2.2.2.1 Display

|              |                          |   |                          |    |                          |   |
|--------------|--------------------------|---|--------------------------|----|--------------------------|---|
| Phase A Text | <input type="checkbox"/> | A | <input type="checkbox"/> | L1 | <input type="checkbox"/> | R |
| Phase B Text | <input type="checkbox"/> | B | <input type="checkbox"/> | L2 | <input type="checkbox"/> | S |
| Phase C Text | <input type="checkbox"/> | C | <input type="checkbox"/> | L3 | <input type="checkbox"/> | T |
| E/Gnd Text   | <input type="checkbox"/> | N | <input type="checkbox"/> | E  | <input type="checkbox"/> | G |

## 2.2.2.2 CT Ratio

|                    |                          |   |
|--------------------|--------------------------|---|
| Line CT Primary    | Primary phase CT ratio   |   |
| Line CT Secondary  | Secondary phase CT ratio | <input type="checkbox"/> 1 A <input type="checkbox"/> 5 A |
| E/Gnd CT Primary   | Primary earth CT ratio   |   |
| E/Gnd CT Secondary | Secondary earth CT ratio | <input type="checkbox"/> 1 A <input type="checkbox"/> 5 A |

## 2.2.2.3 LEDs 5 to 8 configuration

| Functions           | LED 5                        |                             | LED 6                        |                             | LED 7                        |                             | LED 8                        |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.2.3 COMMUNICATION Menu

## 2.2.3.1 COMMUNICATION Menu (MODBUS)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       |
|                 | <input type="checkbox"/> None       |                                     |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |
| Relay Address   |                                     |                                     |

## 2.2.3.2 COMMUNICATION Menu (Courier)

|                 |                              |                             |
|-----------------|------------------------------|-----------------------------|
| Communication ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Relay Address   |                              |                             |

## 2.2.3.3 COMMUNICATION Menu (IEC 60870-5-103)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Relay Address   |                                     |                                     |

## 2.2.3.4 COMMUNICATION Menu (DNP3)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       |
|                 | <input type="checkbox"/> None       |                                     |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |
| Relay Address   |                                     |                                     |



MiCOM P120/P121/P122/P123

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## 2.2.4 PROTECTION Menu

## 2.2.4.1 Phase Overcurrent [50/51]

## 2.2.4.1.1 [50/51] I&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I>?        | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I>         | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.2.4.1.1.1 [51] I&gt; DMT

|     |    |
|-----|----|
| tl> | ms |
|-----|----|

## 2.2.4.1.1.2 [51] I&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
| Tms  |                                  |                                  |

## 2.2.4.1.1.3 [51] I&gt; RI

|   |  |
|---|--|
| K |  |
|---|--|

## 2.2.4.1.2 [51] I&gt;&gt;

|      |                              |                             |
|------|------------------------------|-----------------------------|
| I>>? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>  | In                           |                             |
| tl>> | ms                           |                             |

## 2.2.4.1.3 [51] I&gt;&gt;&gt;

|       |                              |                             |
|-------|------------------------------|-----------------------------|
| I>>>? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>  | In                           |                             |
| tl>>> | ms                           |                             |

## 2.2.4.2 Earth Overcurrent [50N/51N]

## 2.2.4.2.1 [50N/51N] E/Gnd

|                   |                               |  |
|-------------------|-------------------------------|--|
| I <sub>e</sub> >? | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I <sub>e</sub> >  | I <sub>en</sub>               |  |
| Delay Type        | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

2.2.4.2.1.1 [51N] I<sub>e</sub>> DMT

|                   |    |
|-------------------|----|
| tl <sub>e</sub> > | ms |
|-------------------|----|

2.2.4.2.1.2 [51N]  $I_e > IDMT$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
| Tms  |                          |         |                          |         |

2.2.4.2.1.3 [51N]  $I_e > RI$ 

|   |  |
|---|--|
| K |  |
|---|--|

2.2.4.2.2 [51N]  $I_e >>$ 

|            |                          |     |                          |    |
|------------|--------------------------|-----|--------------------------|----|
| $I_e >> ?$ | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| $I_e >>$   |                          |     | len                      |    |
| $tl_e >>$  |                          |     | ms                       |    |

2.2.4.2.3 [51N]  $I_e >>>$ 

|             |                          |     |                          |    |
|-------------|--------------------------|-----|--------------------------|----|
| $I_e >>> ?$ | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| $I_e >>>$   |                          |     | len                      |    |
| $tl_e >>>$  |                          |     | ms                       |    |

## 2.2.5 AUTOMAT.CTRL Menu

## 2.2.5.1 Trip Command allocation

|                 |                          |     |                          |    |
|-----------------|--------------------------|-----|--------------------------|----|
| Trip $tl >$     | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $tl >>$    | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $tl >>>$   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $tl_e >$   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $tl_e >>$  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $tl_e >>>$ | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.2.5.2 Latch function allocation

|                  |                          |     |                          |    |
|------------------|--------------------------|-----|--------------------------|----|
| Latch $tl >$     | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch $tl >>$    | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch $tl >>>$   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch $tl_e >$   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch $tl_e >>$  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch $tl_e >>>$ | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.2.5.3 Blocking Logic function allocation

|                           |                          |     |                          |    |
|---------------------------|--------------------------|-----|--------------------------|----|
| Block tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.2.5.4 OUTPUT RELAYS allocation (RL2 to RL4)

| Functions           | RL 2                         |                             | RL 3                         |                             | RL 4                         |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Trip                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.2.5.5 Inputs allocation

|         |                               |                                  |                                |
|---------|-------------------------------|----------------------------------|--------------------------------|
| Input 1 | <input type="checkbox"/> None | <input type="checkbox"/> Unlatch | <input type="checkbox"/> 52a   |
|         | <input type="checkbox"/> 52b  | <input type="checkbox"/> CB FLT  | <input type="checkbox"/> Aux 1 |
|         | <input type="checkbox"/> Aux2 | <input type="checkbox"/> Blk log |                                |
| Input 2 | <input type="checkbox"/> None | <input type="checkbox"/> Unlatch | <input type="checkbox"/> 52a   |
|         | <input type="checkbox"/> 52b  | <input type="checkbox"/> CB FLT  | <input type="checkbox"/> Aux 1 |
|         | <input type="checkbox"/> Aux2 | <input type="checkbox"/> Blk log |                                |

## 2.3 MiCOM P122 commissioning setting record sheets

## 2.3.1 OP PARAMETERS Menu

Password : \_\_\_\_\_

Reference : \_\_\_\_\_

Software version : \_\_\_\_\_

Frequency :

☐

50 Hz

☐

60 Hz

## 2.3.2 CONFIGURATION Menu

## 2.3.2.1 Display

|              |                          |   |                          |    |                          |   |
|--------------|--------------------------|---|--------------------------|----|--------------------------|---|
| Phase A Text | <input type="checkbox"/> | A | <input type="checkbox"/> | L1 | <input type="checkbox"/> | R |
| Phase B Text | <input type="checkbox"/> | B | <input type="checkbox"/> | L2 | <input type="checkbox"/> | S |
| Phase C Text | <input type="checkbox"/> | C | <input type="checkbox"/> | L3 | <input type="checkbox"/> | T |
| E/Gnd Text   | <input type="checkbox"/> | N | <input type="checkbox"/> | E  | <input type="checkbox"/> | G |

## 2.3.2.2 CT Ratio

|                    |                          |                              |                              |
|--------------------|--------------------------|------------------------------|------------------------------|
| Line CT Primary    | Primary phase CT ratio   |                              |                              |
| Line CT Secondary  | Secondary phase CT ratio | <input type="checkbox"/> 1 A | <input type="checkbox"/> 5 A |
| E/Gnd CT Primary   | Primary earth CT ratio   |                              |                              |
| E/Gnd CT Secondary | Secondary earth CT ratio | <input type="checkbox"/> 1 A | <input type="checkbox"/> 5 A |



## 2.3.2.3 LEDs 5 to 8 configuration

| Functions           | LED 5                        |                             | LED 6                        |                             | LED 7                        |                             | LED 8                        |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Thermal Trip        | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn. Cond          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 1             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 2             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 3             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t Aux1              | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t Aux2              | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.3.2.4 Group select configuration

|                    |                               |                                |
|--------------------|-------------------------------|--------------------------------|
| Change group input | <input type="checkbox"/> Edge | <input type="checkbox"/> Level |
| Setting group      | <input type="checkbox"/> 1    | <input type="checkbox"/> 2     |

## 2.3.2.5 Alarms configuration

|                    |                              |                             |
|--------------------|------------------------------|-----------------------------|
| Inst. Self Reset   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Reset Led on fault | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Alarm battery      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.3.2.6 Inputs configuration

|                  |                               |                               |                               |
|------------------|-------------------------------|-------------------------------|-------------------------------|
| Inputs           | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| Voltage input DC | <input type="checkbox"/> DC   | <input type="checkbox"/> AC   |                               |

## 2.3.2.7 Relays maintenance

|                  |                               |                               |                               |                               |                               |                               |                               |
|------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Maintenance Mode | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |                               |                               |                               |                               |
| Relays CMD       | 6<br><input type="checkbox"/> | 5<br><input type="checkbox"/> | W<br><input type="checkbox"/> | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |

## 2.3.2.8 Phase rotation configuration

|                |                                |                                |
|----------------|--------------------------------|--------------------------------|
| Phase rotation | <input type="checkbox"/> A-B-C | <input type="checkbox"/> A-C-B |
|----------------|--------------------------------|--------------------------------|

## 2.3.3 COMMUNICATION Menu

## 2.3.3.1 COMMUNICATION Menu (MODBUS)

|                 |                                     |                                     |                               |
|-----------------|-------------------------------------|-------------------------------------|-------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |                               |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |                               |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |                               |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |                               |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |                               |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       | <input type="checkbox"/> None |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |                               |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |                               |
| Relay Address   |                                     |                                     |                               |

## 2.3.3.2 COMMUNICATION Menu (Courier)

|                 |                              |                             |
|-----------------|------------------------------|-----------------------------|
| Communication ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Relay Address   |                              |                             |

## 2.3.3.3 COMMUNICATION Menu (IEC 60870-5-103)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Relay Address   |                                     |                                     |

## 2.3.3.4 COMMUNICATION Menu (DNP3)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       |
|                 |                                     | <input type="checkbox"/> None       |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |
| Relay Address   |                                     |                                     |

## 2.3.4 PROTECTION G1 Menu

## 2.3.4.1 Phase Overcurrent [50/51]

## 2.3.4.1.1 [50/51] I&gt;

|            |                               |                              |
|------------|-------------------------------|------------------------------|
| I> ?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |
| I>         | In                            |                              |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT |
|            |                               | <input type="checkbox"/> RI  |

## 2.3.4.1.1.1 [51] I&gt; DMT

|         |    |
|---------|----|
| tl>     | ms |
| t Reset | ms |

## 2.3.4.1.1.2 [51] I&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |

## 2.3.4.1.1.3 [51] I&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.4.1.1.4 [51] I&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.4.1.1.5 [51] I&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |



## 2.3.4.1.2 [51] l&gt;&gt;

|            |                               |  |
|------------|-------------------------------|--|
| l>> ?      | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| l>>        | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.3.4.1.2.1 [51] l&gt;&gt; DMT

|         |    |
|---------|----|
| tl>>    | ms |
| t Reset | ms |

## 2.3.4.1.2.2 [51] l&gt;&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |

## 2.3.4.1.2.3 [51] l&gt;&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.4.1.2.4 [51] l&gt;&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.4.1.2.5 [51] l&gt;&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.3.4.1.3 [51] l&gt;&gt;&gt;

|             |                              |                             |
|-------------|------------------------------|-----------------------------|
| l>>>?       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| l>>> Sample | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| l>>>        | In                           |                             |
| tl>>>       | ms                           |                             |

## 2.3.4.2 Earth Overcurrent [50N/51N]

## 2.3.4.2.1 [50N/51N] E/Gnd

|            |                               |  |
|------------|-------------------------------|--|
| $I_e > ?$  | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |
| $I_e >$    | len                           |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI <input type="checkbox"/> LABOR. |

2.3.4.2.1.1 [51N]  $I_e >$  DMT

|          |    |
|----------|----|
| $tl_e >$ | ms |
| t Reset  | ms |

2.3.4.2.1.2 [51N]  $I_e >$  IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |

2.3.4.2.1.3 [51N]  $I_e >$  DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.3.4.2.1.4 [51N]  $I_e >$  IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.3.4.2.1.5 [51N]  $I_e >$  RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.3.4.2.1.6 [51N]  $I_e >$  LABORELEC

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.3.4.2.2 [51N]  $I_e >>$ 

|            |                               |  |
|------------|-------------------------------|--|
| $I_e >> ?$ | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |
| $I_e >>$   | len                           |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI <input type="checkbox"/> LABOR. |

2.3.4.2.2.1 [51N]  $I_e >>$  DMT

|           |    |
|-----------|----|
| $tl_e >>$ | ms |
| t Reset   | ms |



2.3.4.2.2.2 [51N]  $I_e >>$  IDMT

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

2.3.4.2.2.3 [51N]  $I_e >>$  DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.3.4.2.2.4 [51N]  $I_e >>$  IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.3.4.2.2.5 [51N]  $I_e >>$  RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.3.4.2.2.6 [51N]  $I_e >>$  LABORELEC

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.3.4.2.3 [51N]  $I_e >>>$ 

|                  |                              |                             |
|------------------|------------------------------|-----------------------------|
| $I_e >>> ?$      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>>$ Sample | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>>$        | len                          |                             |
| $tI_e >>>$       | ms                           |                             |

## 2.3.4.3 [49] THERMAL OVERLOAD

|                  |                              |                             |
|------------------|------------------------------|-----------------------------|
| Therm OL ?       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{\theta >}$   | $I_n$                        |                             |
| Te               | mn                           |                             |
| k                |                              |                             |
| $\theta$ Trip    | %                            |                             |
| $\theta$ Alarm ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $\theta$ Alarm   | %                            |                             |

2.3.4.4 [37] UNDERCURRENT  $I_{<}$ 

|           |                              |                             |
|-----------|------------------------------|-----------------------------|
| $I_{<} ?$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{<}$   | %                            |                             |
| $tI_{<}$  | ms                           |                             |

## 2.3.4.5 [46] Negative phase sequence overcurrent I2&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I2> ?      | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I2>        | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.3.4.5.1 [46] I2&gt; DMT

|     |    |
|-----|----|
| tl> | ms |
|-----|----|

## 2.3.4.5.2 [46] I2&gt; DMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
| Tms  |                                  |                                  |

## 2.3.4.5.3 [46] I2&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.4.5.4 [46] I2&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.4.5.5 [46] I2&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.3.4.6 [46] Negative phase sequence overcurrent I2&gt;&gt;

|        |                              |                             |
|--------|------------------------------|-----------------------------|
| I2>> ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I2>>   | In                           |                             |
| tl2>>  | ms                           |                             |

## 2.3.5 PROTECTION G2 Menu

## 2.3.5.1 Phase Overcurrent [50/51]

## 2.3.5.1.1 [50/51] I&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I> ?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I>         | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.3.5.1.1.1 [51] I&gt; DMT

|         |    |
|---------|----|
| tl>     | ms |
| t Reset | ms |

## 2.3.5.1.1.2 [51] I&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |

## 2.3.5.1.1.3 [51] I&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.5.1.1.4 [51] I&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.5.1.1.5 [51] I&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.3.5.1.2 [51] I&gt;&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I>> ?      | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I>>        | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.3.5.1.2.1 [51] I&gt;&gt; DMT

|         |    |
|---------|----|
| tl>>    | ms |
| t Reset | ms |

## 2.3.5.1.2.2 [51] I&gt;&gt; IDMT

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

## 2.3.5.1.2.3 [51] I&gt;&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.5.1.2.4 [51] I&gt;&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.5.1.2.5 [51] I&gt;&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.3.5.1.3 [51] I&gt;&gt;&gt;

|             |                          |     |                          |    |
|-------------|--------------------------|-----|--------------------------|----|
| I>>>?       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| I>>> Sample | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| I>>>        | In                       |     |                          |    |
| tl>>>       | ms                       |     |                          |    |

## 2.3.5.2 Earth Overcurrent [50N/51N]

## 2.3.5.2.1 [50N/51N] E/Gnd

|                   |                          |      |                          |     |                          |    |                          |        |
|-------------------|--------------------------|------|--------------------------|-----|--------------------------|----|--------------------------|--------|
| I <sub>e</sub> >? | <input type="checkbox"/> | YES  | <input type="checkbox"/> | NO  |                          |    |                          |        |
| I <sub>e</sub> >  | len                      |      |                          |     |                          |    |                          |        |
| Delay Type        | <input type="checkbox"/> | IDMT | <input type="checkbox"/> | DMT | <input type="checkbox"/> | RI | <input type="checkbox"/> | LABOR. |

2.3.5.2.1.1 [51N] I<sub>e</sub> > DMT

|                   |    |
|-------------------|----|
| tl <sub>e</sub> > | ms |
| t Reset           | ms |

2.3.5.2.1.2 [51N]  $I_e > \text{IDMT}$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

2.3.5.2.1.3 [51N]  $I_e > \text{DMT}$  reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.3.5.2.1.4 [51N]  $I_e > \text{IDMT}$  reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.3.5.2.1.5 [51N]  $I_e > \text{RI}$ 

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.3.5.2.1.6 [51N]  $I_e > \text{LABORELEC}$ 

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.3.5.2.2 [51N]  $I_e >>$ 

|            |                               |                              |                             |                                 |
|------------|-------------------------------|------------------------------|-----------------------------|---------------------------------|
| $I_e >> ?$ | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |                             |                                 |
| $I_e >>$   | len                           |                              |                             |                                 |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT | <input type="checkbox"/> RI | <input type="checkbox"/> LABOR. |

2.3.5.2.2.1 [51N]  $I_e >> \text{DMT}$ 

|           |    |
|-----------|----|
| $tI_e >>$ | ms |
| t Reset   | ms |

2.3.5.2.2.2 [51N]  $I_e >> \text{IDMT}$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

2.3.5.2.2.3 [51N]  $I_e >> \text{DMT}$  reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|



2.3.5.2.2.4 [51N]  $I_{e>>}$  IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.3.5.2.2.5 [51N]  $I_{e>>}$  RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.3.5.2.2.6 [51N]  $I_{e>>}$  LABORELEC

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.3.5.2.3 [51N]  $I_{e>>>}$ 

|                   |                              |                             |
|-------------------|------------------------------|-----------------------------|
| $I_{e>>>}$ ?      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{e>>>}$ Sample | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{e>>>}$        | len                          |                             |
| tl $_{e>>>}$      | ms                           |                             |

## 2.3.5.3 [49] THERMAL OVERLOAD

|                  |                              |                             |
|------------------|------------------------------|-----------------------------|
| Therm OL ?       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{\theta>}$    | In                           |                             |
| Te               | mn                           |                             |
| k                |                              |                             |
| $\theta$ Trip    | %                            |                             |
| $\theta$ Alarm ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $\theta$ Alarm   | %                            |                             |

2.3.5.4 [37] UNDERCURRENT  $I_{<}$ 

|           |                              |                             |
|-----------|------------------------------|-----------------------------|
| $I_{<}$ ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{<}$   | %                            |                             |
| tl $_{<}$ | ms                           |                             |

2.3.5.5 [46] Negative phase sequence overcurrent  $I_{2>}$ 

|            |                               |  |
|------------|-------------------------------|--|
| $I_{2>}$ ? | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| $I_{2>}$   | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

2.3.5.5.1 [46]  $I_{2>}$  DMT

|           |    |
|-----------|----|
| tl $_{>}$ | ms |
|-----------|----|

## 2.3.5.5.2 [46] I2&gt; DMT

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
| Tms  |                          |         |                          |         |

## 2.3.5.5.3 [46] I2&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.3.5.5.4 [46] I2&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.3.5.5.5 [46] I2&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.3.5.6 [46] Negative phase sequence overcurrent I2&gt;&gt;

|        |                              |                             |
|--------|------------------------------|-----------------------------|
| I2>> ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I2>>   | In                           |                             |
| tl2>>  | ms                           |                             |

## 2.3.6 AUTOMAT. CTRL Menu

## 2.3.6.1 TRIP Command allocation

|                          |                              |                             |
|--------------------------|------------------------------|-----------------------------|
| Trip tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl<                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip Thermal θ           | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip Brkn. Cond          | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tAux1               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tAux2               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Trip tAux3               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.3.6.2 Latch function allocation

|                           |                          |     |                          |    |
|---------------------------|--------------------------|-----|--------------------------|----|
| Latch tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch Thermal θ           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch Brkn .Cond          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.3.6.3 Blocking Logic 1 function allocation

|                             |                          |     |                          |    |
|-----------------------------|--------------------------|-----|--------------------------|----|
| Block 1 tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 Thermal θ           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 Brkn .Cond          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.3.6.4 Blocking Logic 2 function allocation

|                             |                          |     |                          |    |
|-----------------------------|--------------------------|-----|--------------------------|----|
| Block 2 tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 Thermal θ           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 Brkn .Cond          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.3.6.5 SELECTIVE SCHEME LOGIC1 function allocation

|                          |                          |     |                          |    |
|--------------------------|--------------------------|-----|--------------------------|----|
| Logic Select 1           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| t Sel1                   | ms                       |     |                          |    |

## 2.3.6.6 SELECTIVE SCHEME LOGIC2 function allocation

|                          |                          |     |                          |    |
|--------------------------|--------------------------|-----|--------------------------|----|
| Logic Select 2           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| t Sel2                   | ms                       |     |                          |    |



## 2.3.6.7 OUTPUT RELAYS allocation

## 2.3.6.7.1 OUTPUT RELAYS allocation (RL2 to RL4)

| Functions           | RL 2                         |                             | RL 3                         |                             | RL 4                         |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Trip                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl<                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Alarm         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Trip          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Alarm            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 52 Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn cond           | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux1               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux2               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux3               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 1         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 2         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 3         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 4         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Active Group        | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |



## 2.3.6.7.2 OUTPUT RELAYS allocation (RL5 to RL8)

| Functions           | RL 5                         |                             | RL 6                         |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Trip                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl<                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Alarm         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Trip          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Alarm            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 52 Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn cond           | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux1               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux2               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux3               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 1         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 2         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 3         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 4         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Active Group        | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.3.6.8 LOGIC INPUT allocation

## 2.3.6.8.1 Inputs

|         |                                     |                                     |   |
|---------|-------------------------------------|-------------------------------------|---|
| Input 1 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux1           |
|         | <input type="checkbox"/> Aux2       | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Trip Circ. | <input type="checkbox"/> Rst Led    | <input type="checkbox"/> Maint. M.      |
|         | <input type="checkbox"/> Aux3       | <input type="checkbox"/> Strt tBF   | <input type="checkbox"/>                |
| Input 2 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux1           |
|         | <input type="checkbox"/> Aux2       | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Trip Circ. | <input type="checkbox"/> Rst Led    | <input type="checkbox"/> Maint. M.      |
|         | <input type="checkbox"/> Aux3       | <input type="checkbox"/> Strt tBF   | <input type="checkbox"/>                |
| Input 3 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux1           |
|         | <input type="checkbox"/> Aux2       | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Trip Circ. | <input type="checkbox"/> Rst Led    | <input type="checkbox"/> Maint. M.      |
|         | <input type="checkbox"/> Aux3       | <input type="checkbox"/> Strt tBF   | <input type="checkbox"/>                |

## 2.3.6.8.2 t Aux

|                      |    |
|----------------------|----|
| Aux 1 time : t Aux 1 | ms |
| Aux 2 time : t Aux 2 | ms |
| Aux 3 time : t Aux 3 | ms |

## 2.3.6.9 BROKEN CONDUCTOR

|              |                              |                             |
|--------------|------------------------------|-----------------------------|
| Brkn. Cond ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tBC          | ms                           |                             |
| Ratio I2/I1  | %                            |                             |

## 2.3.6.10 Cold Load Pick-up

|                |                              |                             |
|----------------|------------------------------|-----------------------------|
| Cold Load PU ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l>}$ ?     | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l>>}$ ?    | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l>>>}$ ?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l_e>}$ ?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l_e>>}$ ?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l_e>>>}$ ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l2>}$ ?    | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $t_{l2>>}$ ?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t Therm ?      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Level          | %                            |                             |
| tCL            | ms                           |                             |

## 2.3.6.11 CIRCUIT BREAKER FAILURE

|                  |                              |                             |
|------------------|------------------------------|-----------------------------|
| CB Fail ?        | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{<}$          | $I_n$                        |                             |
| tBF              | ms                           |                             |
| Block $I_{>}$ ?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Block $I_{e>}$ ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.3.6.12 CIRCUIT BREAKER SUPERVISION

|                     |                              |                             |
|---------------------|------------------------------|-----------------------------|
| TC Supervision ?    | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t SUP               | s                            |                             |
| CB Open S'vision    | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Open Time        | ms                           |                             |
| CB Close S'vision   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close Time       | ms                           |                             |
| CB Open Alarm ?     | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Open NB          |                              |                             |
| $\Sigma$ Amps (n) ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $\Sigma$ Amps (n)   |                              |                             |
| n                   |                              |                             |
| t Open Pulse        | ms                           |                             |
| t Close Pulse       | ms                           |                             |

MiCOM P120/P121/P122/P123

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## 2.3.7 RECORDS Menu

## 2.3.7.1 DISTURBANCE RECORD

|                  |                                   |                                  |
|------------------|-----------------------------------|----------------------------------|
| Pre-Time         | ms                                |                                  |
| Post-Time        | ms                                |                                  |
| Disturb Rec Trig | <input type="checkbox"/> ON INST. | <input type="checkbox"/> ON TRIP |

## 2.3.7.2 TIME PEAK VALUE

|             |    |
|-------------|----|
| Time Window | mn |
|-------------|----|

## 2.3.7.3 ROLLING DEMAND

|                 |    |
|-----------------|----|
| Sub Period      | mn |
| Num of Sub Per. |    |



## 2.4 MiCOM P123 commissioning setting record sheets

## 2.4.1 OP PARAMETERS Menu

Password : \_\_\_\_\_

Reference : \_\_\_\_\_

Software version : \_\_\_\_\_

Frequency : ☐ 50 Hz ☐ 60 Hz

## 2.4.2 CONFIGURATION Menu

## 2.4.2.1 Display

|              |                            |                             |                            |
|--------------|----------------------------|-----------------------------|----------------------------|
| Phase A Text | <input type="checkbox"/> A | <input type="checkbox"/> L1 | <input type="checkbox"/> R |
| Phase B Text | <input type="checkbox"/> B | <input type="checkbox"/> L2 | <input type="checkbox"/> S |
| Phase C Text | <input type="checkbox"/> C | <input type="checkbox"/> L3 | <input type="checkbox"/> T |
| E/Gnd Text   | <input type="checkbox"/> N | <input type="checkbox"/> E  | <input type="checkbox"/> G |

## 2.4.2.2 CT Ratio

|                    |                          |                              |                              |
|--------------------|--------------------------|------------------------------|------------------------------|
| Line CT Primary    | Primary phase CT ratio   |                              |                              |
| Line CT Secondary  | Secondary phase CT ratio | <input type="checkbox"/> 1 A | <input type="checkbox"/> 5 A |
| E/Gnd CT Primary   | Primary earth CT ratio   |                              |                              |
| E/Gnd CT Secondary | Secondary earth CT ratio | <input type="checkbox"/> 1 A | <input type="checkbox"/> 5 A |



## 2.4.2.3 LEDs 5 to 8 configuration

| Functions           | LED 5                        |                             | LED 6                        |                             | LED 7                        |                             | LED 8                        |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Trip          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn. Cond          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 1             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 2             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 3             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 4             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Input 5             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Recloser Run        | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Recloser Blocked    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| T Aux 1             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| T Aux 2             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CONF SOTF           | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.4.2.4 Group select configuration

|                    |                               |                                |
|--------------------|-------------------------------|--------------------------------|
| Change group input | <input type="checkbox"/> Edge | <input type="checkbox"/> Level |
| Setting group      | <input type="checkbox"/> 1    | <input type="checkbox"/> 2     |

## 2.4.2.5 Alarms configuration

|                    |                              |                             |
|--------------------|------------------------------|-----------------------------|
| Inst. Self Reset   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Reset Led on fault | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Alarm battery      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.4.2.6 Inputs configuration

|                  |                               |                               |                               |
|------------------|-------------------------------|-------------------------------|-------------------------------|
| Inputs           | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| Voltage input DC | <input type="checkbox"/> DC   | <input type="checkbox"/> AC   |                               |

## 2.4.2.7 Relays maintenance

|                  |                              |                          |                          |                          |                          |                             |                          |                          |                          |
|------------------|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|
| Maintenance Mode | <input type="checkbox"/> YES |                          |                          |                          |                          | <input type="checkbox"/> NO |                          |                          |                          |
| Relays CMD       | 8                            | 7                        | 6                        | 5                        | W                        | 4                           | 3                        | 2                        | 1                        |
|                  | <input type="checkbox"/>     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 2.4.2.8 Phase rotation configuration

|                |                                |                                |
|----------------|--------------------------------|--------------------------------|
| Phase rotation | <input type="checkbox"/> A-B-C | <input type="checkbox"/> A-C-B |
|----------------|--------------------------------|--------------------------------|

## 2.4.3 COMMUNICATION Menu

## 2.4.3.1 COMMUNICATION Menu (MODBUS)

|                 |                                     |                                     |                               |
|-----------------|-------------------------------------|-------------------------------------|-------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |                               |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |                               |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |                               |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |                               |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |                               |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       | <input type="checkbox"/> None |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |                               |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |                               |
| Relay Address   |                                     |                                     |                               |

## 2.4.3.2 COMMUNICATION Menu (Courier)

|                 |                              |                             |
|-----------------|------------------------------|-----------------------------|
| Communication ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Relay Address   |                              |                             |

## 2.4.3.3 COMMUNICATION Menu (IEC 60870-5-103)

|                 |                                     |                                     |
|-----------------|-------------------------------------|-------------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |
| Relay Address   |                                     |                                     |

## 2.4.3.4 COMMUNICATION Menu (DNP3)

|                 |                                     |                                     |                               |
|-----------------|-------------------------------------|-------------------------------------|-------------------------------|
| Communication ? | <input type="checkbox"/> YES        | <input type="checkbox"/> NO         |                               |
| Baud Rate       | <input type="checkbox"/> 300 bds    | <input type="checkbox"/> 600 bds    |                               |
|                 | <input type="checkbox"/> 1.200 bds  | <input type="checkbox"/> 2.400 bds  |                               |
|                 | <input type="checkbox"/> 4.800 bds  | <input type="checkbox"/> 9.600 bds  |                               |
|                 | <input type="checkbox"/> 19.200 bds | <input type="checkbox"/> 38 400 bds |                               |
| Parity          | <input type="checkbox"/> Odd        | <input type="checkbox"/> Even       | <input type="checkbox"/> None |
| Data bits       | <input type="checkbox"/> 7          | <input type="checkbox"/> 8          |                               |
| Stop bits       | <input type="checkbox"/> 1          | <input type="checkbox"/> 2          |                               |
| Relay Address   |                                     |                                     |                               |

## 2.4.4 PROTECTION G1 Menu

## 2.4.4.1 Phase Overcurrent [50/51]

## 2.4.4.1.1 [50/51] I&gt;

|            |                               |                              |                             |
|------------|-------------------------------|------------------------------|-----------------------------|
| I> ?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |                             |
| I>         | In                            |                              |                             |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT | <input type="checkbox"/> RI |

## 2.4.4.1.1.1 [51] I&gt; DMT

|         |    |
|---------|----|
| tl>     | ms |
| t Reset | ms |

## 2.4.4.1.1.2 [51] I&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |



## 2.4.4.1.1.3 [51] l&gt; DMT reset time

|                |    |
|----------------|----|
| <b>t Reset</b> | ms |
|----------------|----|

## 2.4.4.1.1.4 [51] l&gt; IDMT reset time

|             |  |
|-------------|--|
| <b>Rtms</b> |  |
|-------------|--|

## 2.4.4.1.1.5 [51] l&gt; RI

|                |    |
|----------------|----|
| <b>K</b>       |    |
| <b>t Reset</b> | ms |

## 2.4.4.1.2 [51] l&gt;&gt;

|                    |                               |  |
|--------------------|-------------------------------|--|
| <b>l&gt;&gt; ?</b> | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| <b>l&gt;&gt;</b>   | In                            |  |
| <b>Delay Type</b>  | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.4.4.1.2.1 [51] l&gt;&gt; DMT

|                   |    |
|-------------------|----|
| <b>tl&gt;&gt;</b> | ms |
| <b>t Reset</b>    | ms |

## 2.4.4.1.2.2 [51] l&gt;&gt; IDMT

|             |                                  |                                  |
|-------------|----------------------------------|----------------------------------|
| <b>Idmt</b> | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|             | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|             | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|             | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|             | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|             | <input type="checkbox"/> IEEE RC |                                  |
| <b>Tms</b>  |                                  |                                  |

## 2.4.4.1.2.3 [51] l&gt;&gt; DMT reset time

|                |    |
|----------------|----|
| <b>t Reset</b> | ms |
|----------------|----|

## 2.4.4.1.2.4 [51] l&gt;&gt; IDMT reset time

|             |  |
|-------------|--|
| <b>Rtms</b> |  |
|-------------|--|

## 2.4.4.1.2.5 [51] l&gt;&gt; RI

|                |    |
|----------------|----|
| <b>K</b>       |    |
| <b>t Reset</b> | ms |

## 2.4.4.1.3 [51] l&gt;&gt;&gt;

|                             |                              |                             |
|-----------------------------|------------------------------|-----------------------------|
| <b>l&gt;&gt;&gt;?</b>       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| <b>l&gt;&gt;&gt; Sample</b> | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| <b>l&gt;&gt;&gt;</b>        | In                           |                             |
| <b>tl&gt;&gt;&gt;</b>       | ms                           |                             |



## 2.4.4.2 Earth Overcurrent [50N/51N]

## 2.4.4.2.1 [50N/51N] E/Gnd

|            |                               |  |
|------------|-------------------------------|--|
| $I_e > ?$  | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |
| $I_e >$    | len                           |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI <input type="checkbox"/> LABOR. |

2.4.4.2.1.1 [51N]  $I_e >$  DMT

|          |    |
|----------|----|
| $tl_e >$ | ms |
| t Reset  | ms |

2.4.4.2.1.2 [51N]  $I_e >$  IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
| Tms  |                                  |                                  |

2.4.4.2.1.3 [51N]  $I_e >$  DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.4.4.2.1.4 [51N]  $I_e >$  IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.4.4.2.1.5 [51N]  $I_e >$  RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.4.4.2.1.6 [51N]  $I_e >$  LABORELEC

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.4.4.2.2 [51N]  $I_e >>$ 

|            |                               |  |
|------------|-------------------------------|--|
| $I_e >> ?$ | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |
| $I_e >>$   | len                           |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI <input type="checkbox"/> LABOR. |

2.4.4.2.2.1 [51N]  $I_e >>$  DMT

|           |    |
|-----------|----|
| $tl_e >>$ | ms |
| t Reset   | ms |

2.4.4.2.2.2 [51N]  $I_e >> IDMT$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
| Tms  |                          |         |                          |         |

2.4.4.2.2.3 [51N]  $I_e >> DMT$  reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.4.4.2.2.4 [51N]  $I_e >> IDMT$  reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.4.4.2.2.5 [51N]  $I_e >> RI$ 

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.4.4.2.2.6 [51N]  $I_e >> LABORELEC$ 

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.4.4.2.3 [51N]  $I_e >>>$ 

|                         |                              |                             |
|-------------------------|------------------------------|-----------------------------|
| $I_e >>> ?$             | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>> \text{Sample}$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_e >>>$               | len                          |                             |
| $tl_e >>>$              | ms                           |                             |

## 2.4.4.3 [49] THERMAL OVERLOAD

|                               |                              |                             |
|-------------------------------|------------------------------|-----------------------------|
| [49] Therm OL ?               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{\theta >}$                | $I_n$                        |                             |
| $T_e$                         | mn                           |                             |
| k                             |                              |                             |
| $\theta \text{ Trip}$         | %                            |                             |
| [49] $\theta \text{ Alarm ?}$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $\theta \text{ Alarm}$        | %                            |                             |

2.4.4.4 [37] UNDERCURRENT  $I_{<}$ 

|           |                              |                             |
|-----------|------------------------------|-----------------------------|
| $I_{<} ?$ | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{<}$   | %                            |                             |
| $tl_{<}$  | ms                           |                             |

## 2.4.4.5 [46] Negative phase sequence overcurrent I2&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I2>?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I2>        | In                            |  |
| Delay Trip | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.4.4.5.1 [46] I2&gt; DMT

|      |    |
|------|----|
| tl2> | ms |
|------|----|

## 2.4.4.5.2 [46] I2&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
| Tms  |                                  |                                  |

## 2.4.4.5.3 [46] I2&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.4.4.5.4 [46] I2&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.4.4.5.5 [46] I2&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.4.4.6 [46] Negative phase sequence overcurrent I2&gt;&gt;

|       |                              |                             |
|-------|------------------------------|-----------------------------|
| I2>>? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I2>>  | In                           |                             |
| tl2>> | ms                           |                             |

## 2.4.4.7 [79] AUTORECLOSER

|                            |                               |   |
|----------------------------|-------------------------------|---|
| [79] Autoreclose ?         | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |
| Ext CB Fail ?              | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |
| Ext CB Fail Time           | ms                            |   |
| Ext Block ?                | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |
| Aux 1 ( $I_{>}$ )          | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |
| Aux 2 ( $I_{e>}$ )         | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |
| Dead Time tD1              | ms                            |   |
| Dead Time tD2              | ms                            |   |
| Dead Time tD3              | ms                            |   |
| Dead Time tD4              | ms                            |   |
| Reclaim Time tR            | ms                            |   |
| Inhib Time tI              | ms                            |   |
| Phase Cycles               |                               |   |
| E/Gnd Cycles               |                               |   |
| CYCLES tI>                 | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tI>>                | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tI>>>               | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tI <sub>e</sub> >   | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tI <sub>e</sub> >>  | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tI <sub>e</sub> >>> | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tAux 1              | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |
| CYCLES tAux 2              | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> 2<br><input type="checkbox"/> 1<br><input type="checkbox"/> |



## 2.4.5 PROTECTION G2 Menu

## 2.4.5.1 Phase Overcurrent [50/51]

## 2.4.5.1.1 [50/51] I&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I> ?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I>         | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.4.5.1.1.1 [51] I&gt; DMT

|         |    |
|---------|----|
| tl>     | ms |
| t Reset | ms |

## 2.4.5.1.1.2 [51] I&gt; IDMT

|      |                                  |                                  |
|------|----------------------------------|----------------------------------|
| Idmt | <input type="checkbox"/> IEC SI  | <input type="checkbox"/> IEC STI |
|      | <input type="checkbox"/> IEC VI  | <input type="checkbox"/> IEC EI  |
|      | <input type="checkbox"/> IEC LTI | <input type="checkbox"/> CO2     |
|      | <input type="checkbox"/> IEEE MI | <input type="checkbox"/> CO8     |
|      | <input type="checkbox"/> IEEE VI | <input type="checkbox"/> IEEE EI |
|      | <input type="checkbox"/> IEEE RC |                                  |
| Tms  |                                  |                                  |

## 2.4.5.1.1.3 [51] I&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.4.5.1.1.4 [51] I&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.4.5.1.1.5 [51] I&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.4.5.1.2 [51] I&gt;&gt;

|            |                               |  |
|------------|-------------------------------|--|
| I>> ?      | <input type="checkbox"/> YES  | <input type="checkbox"/> NO                              |
| I>>        | In                            |  |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT <input type="checkbox"/> RI |

## 2.4.5.1.2.1 [51] I&gt;&gt; DMT

|         |    |
|---------|----|
| tl>>    | ms |
| t Reset | ms |

## 2.4.5.1.2.2 [51] I&gt;&gt; IDMT

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

## 2.4.5.1.2.3 [51] I&gt;&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.4.5.1.2.4 [51] I&gt;&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.4.5.1.2.5 [51] I&gt;&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.4.5.1.3 [51] I&gt;&gt;&gt;

|             |                          |     |                          |    |
|-------------|--------------------------|-----|--------------------------|----|
| I>>>?       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| I>>> Sample | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| I>>>        | In                       |     |                          |    |
| tl>>>       | ms                       |     |                          |    |

## 2.4.5.2 Earth Overcurrent [50N/51N]

## 2.4.5.2.1 [50N/51N] E/Gnd

|                    |                          |      |                          |     |                          |    |                          |        |
|--------------------|--------------------------|------|--------------------------|-----|--------------------------|----|--------------------------|--------|
| I <sub>e</sub> > ? | <input type="checkbox"/> | YES  | <input type="checkbox"/> | NO  |                          |    |                          |        |
| I <sub>e</sub> >   | Ien                      |      |                          |     |                          |    |                          |        |
| Delay Type         | <input type="checkbox"/> | IDMT | <input type="checkbox"/> | DMT | <input type="checkbox"/> | RI | <input type="checkbox"/> | LABOR. |

2.4.5.2.1.1 [51N] I<sub>e</sub>> DMT

|                   |    |
|-------------------|----|
| tl <sub>e</sub> > | ms |
| t Reset           | ms |

2.4.5.2.1.2 [51N]  $I_e > \text{IDMT}$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

2.4.5.2.1.3 [51N]  $I_e > \text{DMT reset time}$ 

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.4.5.2.1.4 [51N]  $I_e > \text{IDMT reset time}$ 

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.4.5.2.1.5 [51N]  $I_e > \text{RI}$ 

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.4.5.2.1.6 [51N]  $I_e > \text{LABORELEC}$ 

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.4.5.2.2 [51N]  $I_e >>$ 

|            |                               |                              |                             |                                 |
|------------|-------------------------------|------------------------------|-----------------------------|---------------------------------|
| $I_e >> ?$ | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |                             |                                 |
| $I_e >>$   | len                           |                              |                             |                                 |
| Delay Type | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT | <input type="checkbox"/> RI | <input type="checkbox"/> LABOR. |

2.4.5.2.2.1 [51N]  $I_e >> \text{DMT}$ 

|           |    |
|-----------|----|
| $tI_e >>$ | ms |
| t Reset   | ms |

2.4.5.2.2.2 [51N]  $I_e >> \text{IDMT}$ 

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
|      | <input type="checkbox"/> | IEEE RC |                          |         |
| Tms  |                          |         |                          |         |

2.4.5.2.2.3 [51N]  $I_{e>>}$  DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

2.4.5.2.2.4 [51N]  $I_{e>>}$  IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

2.4.5.2.2.5 [51N]  $I_{e>>}$  RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

2.4.5.2.2.6 [51N]  $I_{e>>}$  LABORELEC

|      |                            |                            |                            |
|------|----------------------------|----------------------------|----------------------------|
| Idmt | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 |
|------|----------------------------|----------------------------|----------------------------|

2.4.5.2.3 [51N]  $I_{e>>>}$ 

|                   |                              |                             |
|-------------------|------------------------------|-----------------------------|
| $I_{e>>>}$ ?      | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{e>>>}$ Sample | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{e>>>}$        | len                          |                             |
| $tl_{e>>>}$       | ms                           |                             |

## 2.4.5.3 [49] THERMAL OVERLOAD

|                       |                              |                             |
|-----------------------|------------------------------|-----------------------------|
| [49] Therm OL ?       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{\theta>}$         | $I_n$                        |                             |
| Te                    | mn                           |                             |
| k                     |                              |                             |
| $\theta$ Trip         | %                            |                             |
| [49] $\theta$ Alarm ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $\theta$ Alarm        | %                            |                             |

2.4.5.4 [37] UNDERCURRENT  $I_{<}$ 

|           |                              |                             |
|-----------|------------------------------|-----------------------------|
| $I_{<}$ ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| $I_{<}$   | %                            |                             |
| $tl_{<}$  | ms                           |                             |

2.4.5.5 [46] Negative phase sequence overcurrent  $I_{2>}$ 

|            |                               |                              |                             |
|------------|-------------------------------|------------------------------|-----------------------------|
| I2>?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO  |                             |
| I2>        | In                            |                              |                             |
| Delay Trip | <input type="checkbox"/> IDMT | <input type="checkbox"/> DMT | <input type="checkbox"/> RI |

2.4.5.5.1 [46]  $I_{2>}$  DMT

|           |    |
|-----------|----|
| $tl_{2>}$ | ms |
|-----------|----|



## 2.4.5.5.2 [46] I2&gt; IDMT

|      |                          |         |                          |         |
|------|--------------------------|---------|--------------------------|---------|
| Idmt | <input type="checkbox"/> | IEC SI  | <input type="checkbox"/> | IEC STI |
|      | <input type="checkbox"/> | IEC VI  | <input type="checkbox"/> | IEC EI  |
|      | <input type="checkbox"/> | IEC LTI | <input type="checkbox"/> | CO2     |
|      | <input type="checkbox"/> | IEEE MI | <input type="checkbox"/> | CO8     |
|      | <input type="checkbox"/> | IEEE VI | <input type="checkbox"/> | IEEE EI |
| Tms  |                          |         |                          |         |

## 2.4.5.5.3 [46] I2&gt; DMT reset time

|         |    |
|---------|----|
| t Reset | ms |
|---------|----|

## 2.4.5.5.4 [46] I2&gt; IDMT reset time

|      |  |
|------|--|
| Rtms |  |
|------|--|

## 2.4.5.5.5 [46] I2&gt; RI

|         |    |
|---------|----|
| K       |    |
| t Reset | ms |

## 2.4.5.6 [46] Negative phase sequence overcurrent I2&gt;&gt;

|       |                              |                             |
|-------|------------------------------|-----------------------------|
| I2>>? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I2>>  | In                           |                             |
| tl2>> | ms                           |                             |

## 2.4.5.7 [79] AUTORECLOSER

|                          |                               |                               |                               |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|
| [79] Autoreclose ?       | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |
| Ext CB Fail ?            | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |
| Ext CB Fail Time         | ms                            |                               |                               |
| Ext Block ?              | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |
| Aux 1 (I>)               | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |
| Aux 2 (I <sub>e</sub> >) | <input type="checkbox"/> YES  | <input type="checkbox"/> NO   |                               |
| Dead Time tD1            | ms                            |                               |                               |
| Dead Time tD2            | ms                            |                               |                               |
| Dead Time tD3            | ms                            |                               |                               |
| Dead Time tD4            | ms                            |                               |                               |
| Reclaim Time tR          | ms                            |                               |                               |
| Inhib Time tI            | ms                            |                               |                               |
| Phase Cycles             |                               |                               |                               |
| E/Gnd Cycles             |                               |                               |                               |
| CYCLES tl>               | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> |
|                          |                               | 1<br><input type="checkbox"/> |                               |

|                     |                               |                               |                               |                               |
|---------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| CYCLES $t_{l>>}$    | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{l>>>}$   | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{l_e>}$   | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{l_e>>}$  | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{l_e>>>}$ | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{Aux 1}$  | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |
| CYCLES $t_{Aux 2}$  | 4<br><input type="checkbox"/> | 3<br><input type="checkbox"/> | 2<br><input type="checkbox"/> | 1<br><input type="checkbox"/> |

## 2.4.6 AUTOMAT.CTRL Menu

## 2.4.6.1 TRIP Command allocation

|                       |                          |     |                          |    |
|-----------------------|--------------------------|-----|--------------------------|----|
| Trip $t_{l>}$         | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l>>}$        | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l>>>}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l_e>}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l_e>>}$      | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l_e>>>}$     | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l<}$         | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l2>}$        | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{l2>>}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip Thermal $\theta$ | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip Brkn Cond        | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{Aux1}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{Aux2}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{Aux3}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip $t_{Aux4}$       | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip SOTF             | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Ctrl Trip             | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Trip CB Fail          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.4.6.2 Latch function allocation

|                           |                          |     |                          |    |
|---------------------------|--------------------------|-----|--------------------------|----|
| Latch tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch Thermal θ           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch Brkn . Cond         | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch tAux4               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch SOTF                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Latch CB FAIL             | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.4.6.3 Blocking Logic 1 function allocation

|                             |                          |     |                          |    |
|-----------------------------|--------------------------|-----|--------------------------|----|
| Block 1 tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 Thermal θ           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 Brkn. Cond          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 1 tAux4               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |



## 2.4.6.4 Blocking Logic 2 function allocation

|                             |                          |     |                          |    |
|-----------------------------|--------------------------|-----|--------------------------|----|
| Block 2 tl>                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >   | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl<                 | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl2>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tl2>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 Thermal $\theta$    | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 Brkn. Cond          | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux1               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux2               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux3               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Block 2 tAux4               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |

## 2.4.6.5 Selective Scheme Logic1 function allocation

|                          |                          |     |                          |    |
|--------------------------|--------------------------|-----|--------------------------|----|
| Logic Select 1           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel1 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| t Sel1                   | ms                       |     |                          |    |

## 2.4.6.6 Selective Scheme Logic2 function allocation

|                          |                          |     |                          |    |
|--------------------------|--------------------------|-----|--------------------------|----|
| Logic Select 2           | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl>>                | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl>>>               | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl <sub>e</sub> >>  | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| Sel2 tl <sub>e</sub> >>> | <input type="checkbox"/> | YES | <input type="checkbox"/> | NO |
| tSel2 =                  | ms                       |     |                          |    |



## 2.4.6.7 OUTPUT RELAYS allocation

## 2.4.6.7.1 OUTPUT RELAYS allocation (RL2 to RL4)

| Functions           | RL 2                         |                             | RL 3                         |                             | RL 4                         |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Trip                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl<                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Alarm         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Trip          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn Cond           | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux1               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux2               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux3               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux4               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Alarm            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 52 Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 79 Run              | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 79 Trip             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

| Functions     | RL 2                         |                             | RL 3                         |                             | RL 4                         |                             |
|---------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Order COM 1   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 2   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 3   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 4   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Active Group  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| SOTF          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Control Trip  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Control Close | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.4.6.7.2 OUTPUT RELAYS allocation (RL5 to RL8)

| Functions           | RL 5                         |                             | RL 6                         |                             | RL 7                         |                             | RL8                          |                             |
|---------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Trip                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I>>>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >    | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>e</sub> >>>  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl<                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>                | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl2>>               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Alarm         | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Therm Trip          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Brkn Cond           | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux1               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux2               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux3               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tAux4               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Alarm            | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 52 Fail             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 79 Run              | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| 79 Trip             | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |



| Functions     | RL 5                         |                             | RL 6                         |                             | RL 7                         |                             | RL8                          |                             |
|---------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|-----------------------------|
| Order COM 1   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 2   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 3   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Order COM 4   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Active Group  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| SOTF          | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Control Trip  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Control Close | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> YES | <input type="checkbox"/> NO |



## 2.4.6.8 LOGIC INPUT allocation

## 2.4.6.8.1 Inputs

|         |                                     |                                     |   |
|---------|-------------------------------------|-------------------------------------|---|
| Input 1 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux 1          |
|         | <input type="checkbox"/> Aux 2      | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Block - 79 | <input type="checkbox"/> Trip Circ  | <input type="checkbox"/> Rst Led        |
|         | <input type="checkbox"/> Maint. M.  | <input type="checkbox"/> Aux 3      | <input type="checkbox"/> Aux 4          |
|         | <input type="checkbox"/> Strt tBF   | <input type="checkbox"/> Man. Close | <input type="checkbox"/> Local          |
| Input 2 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux 1          |
|         | <input type="checkbox"/> Aux 2      | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Block - 79 | <input type="checkbox"/> Trip Circ  | <input type="checkbox"/> Rst Led        |
|         | <input type="checkbox"/> Maint. M.  | <input type="checkbox"/> Aux 3      | <input type="checkbox"/> Aux 4          |
|         | <input type="checkbox"/> Strt tBF   |                                     |   |
| Input 3 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux 1          |
|         | <input type="checkbox"/> Aux 2      | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Block - 79 | <input type="checkbox"/> Trip Circ  | <input type="checkbox"/> Rst Led        |
|         | <input type="checkbox"/> Maint. M.  | <input type="checkbox"/> Aux 3      | <input type="checkbox"/> Aux 4          |
|         | <input type="checkbox"/> Strt tBF   |                                     |   |
| Input 4 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux 1          |
|         | <input type="checkbox"/> Aux 2      | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Block - 79 | <input type="checkbox"/> Trip Circ  | <input type="checkbox"/> Rst Led        |
|         | <input type="checkbox"/> Maint. M.  | <input type="checkbox"/> Aux 3      | <input type="checkbox"/> Aux 4          |
|         | <input type="checkbox"/> Strt tBF   |                                     |   |

|         |                                     |                                     |   |
|---------|-------------------------------------|-------------------------------------|---|
| Input 5 | <input type="checkbox"/> None       | <input type="checkbox"/> Unlatch    | <input type="checkbox"/> 52a            |
|         | <input type="checkbox"/> 52b        | <input type="checkbox"/> CB FLT     | <input type="checkbox"/> Aux 1          |
|         | <input type="checkbox"/> Aux 2      | <input type="checkbox"/> Blk Log 1  | <input type="checkbox"/> Blk Log 2      |
|         | <input type="checkbox"/> Strt Dist  | <input type="checkbox"/> Cold L PU  | <input type="checkbox"/> Log Sel 1      |
|         | <input type="checkbox"/> Log Sel 2  | <input type="checkbox"/> Change Set | <input type="checkbox"/> $\theta$ Reset |
|         | <input type="checkbox"/> Block - 79 | <input type="checkbox"/> Trip Circ  | <input type="checkbox"/> Rst Led        |
|         | <input type="checkbox"/> Maint. M.  | <input type="checkbox"/> Aux 3      | <input type="checkbox"/> Aux 4          |
|         | <input type="checkbox"/> Strt tBF   |                                     |   |

## 2.4.6.8.2 tAux

|                     |    |
|---------------------|----|
| Aux 1 : Time tAux 1 | ms |
| Aux 2 : Time tAux 2 | ms |
| Aux 3 : Time tAux 3 | ms |
| Aux 4 : Time tAux 4 | ms |

## 2.4.6.9 BROKEN CONDUCTOR

|             |                              |                             |
|-------------|------------------------------|-----------------------------|
| Brkn Cond   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tBC         | ms                           |                             |
| Ratio I2/I1 | %                            |                             |

## 2.4.6.10 Cold Load Pick up

|                       |                              |                             |
|-----------------------|------------------------------|-----------------------------|
| Cold Load PU ?        | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl> ?                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>> ?                | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl>>> ?               | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> > ?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >> ?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tl <sub>e</sub> >>> ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t2> ?                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t2>> ?                | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| T Therm ?             | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Level                 | %                            |                             |
| tCL                   | ms                           |                             |

## 2.4.6.11 CIRCUIT BREAKER FAILURE

|                            |                              |                             |
|----------------------------|------------------------------|-----------------------------|
| CB Fail ?                  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| tBF                        | ms                           |                             |
| I <sub>c</sub>             | I <sub>n</sub>               |                             |
| Block I <sub>&gt;</sub> ?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Block I <sub>c&gt;</sub> ? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.4.6.12 CIRCUIT BREAKER SUPERVISION

|                   |                              |                             |
|-------------------|------------------------------|-----------------------------|
| TC Supervision?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t SUP             | s                            |                             |
| CB Open S'vision  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Open Time      | ms                           |                             |
| CB Close S'vision | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Close Time     | ms                           |                             |
| CB Open Alarm?    | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| CB Open NB        |                              |                             |
| Σ Amps(n)?        | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Σ Amps(n)         |                              |                             |
| n                 |                              |                             |
| t Open Pulse      | ms                           |                             |
| t Close Pulse     | ms                           |                             |

## 2.4.6.13 SOTF

|                           |                              |                             |
|---------------------------|------------------------------|-----------------------------|
| SOTF?                     | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| t SOTF                    | ms                           |                             |
| I <sub>&gt;&gt;</sub>     | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| I <sub>&gt;&gt;&gt;</sub> | <input type="checkbox"/> YES | <input type="checkbox"/> NO |

## 2.4.7 RECORDING Menu

## 2.4.7.1 DISTURBANCE RECORD

|                  |                                   |                                  |
|------------------|-----------------------------------|----------------------------------|
| Pre-time         | ms                                |                                  |
| Post-time        | ms                                |                                  |
| Disturb Rec Trig | <input type="checkbox"/> ON INST. | <input type="checkbox"/> ON TRIP |

## 2.4.7.2 TIME PEAK VALUE

|             |    |
|-------------|----|
| Time Window | mn |
|-------------|----|

## 2.4.7.3 ROLLING DEMAND

|                 |    |
|-----------------|----|
| Sub Period      | mn |
| Num of Sub Per. |    |