COMMISSIONING AND MAINTENANCE GUIDE

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1. REQUIREMENTS PRIOR TO COMMISSIONING

The MiCOM P12x relays are fully numerical in their design, implementing all protection and non-protection functions in software. The MiCOM relays use a high degree of self-checking and, in the unlikely event of a failure, will give an alarm. As a result of this, the commissioning test do not need to be as extensive as with non-numerical relays (static or electromechanical).

To commission MiCOM relays, it is only necessary to verify that the hardware is functioning correctly and the application-specific software setting have been applied to the MiCOM relay. It is considered unnecessary to test every function of the relay if the settings have been verified by one of the following method :

- Extracting the settings applied to the relay using the appropriate setting software MiCOM S1 (preferred method)
- Via the front panel user interface.

REMINDER : It is not possible to download a new setting software as long as the programming mode is active.

To confirm that the product is operating correctly once the application-specific settings have been applied, a test should be performed on a single protection element.

Unless previously agreed to the contrary, the customer will be responsible for determining the application-specific settings to be applied to the MiCOM relays and for testing of any scheme logic applied by external wiring.

Blank commissioning test sheets and setting records are provided at the APPENDIX 2 of the Technical Guide for completion as required.

WARNING : BEFORE COMMISSIONING THE RELAY, THE SAFETY SECTION OF THE MANUAL MUST BE READ.

2. COMMISSIONING TEST ENVIRONMENT

2.1 Important notes

All commissioning tests of **MiCOM P120, P121, P122** and **P123** relays are carried out by injecting currents to the secondary of the earth and/or phases CTs using appropriate injection test sets provided for this purpose.

2.1.1 Injection test sets

For reasons of convenience (weight, spatial requirement, transportation), a single-phased injection test set is more suitable for commissioning and is able to perform all commissioning tests regarding **MiCOM P120, P121, P122** and **P123** relays.

Thus, the following descriptions indicate how to conduct the commissioning tests with a single-phase injection test set.

However, for certain commissioning tests, the three-phase wiring diagrams are easier to understand and in this case the description is also given in three-phase format.

Single-phase injection test set

1 current (0 to 50 A), timer (precision 1 ms).

Three-phase injection test set

3 currents (0 to 50 A), timer (precision 1 ms).

2.1.2 Additional commissioning test equipment

- 1 multimeter (precision 1%),
- 1 connecting terminal to measure the currents exceeding 10 A (precision 2%),
- Test plugs and wires to carry out injections to the CT's secondary (dimension according to the currents injected).

2.1.3 Communication

For all commissioning tests, the records can be made by using the RS 485 communication on the rear connector of the **MiCOM P120, P121, P122** and **P123** relays or for **MiCOM P122** and **P123** using the RS232 front port.

According to each RS 485 communication protocol (MODBUS, Courier, IEC 60870-5-103, DNP3).

2.2 Commissioning test sheets

Commissioning test sheets are available in the APPENDIX 2 of the Technical Guide.

The presentation of the Commissioning test sheets follows the description of the tests of this chapter.

The contents of these Commissioning test sheets enable you to log :

The name of the relay, station and circuit

The characteristics of the **MiCOM P120, P121, P122** and **P123** relays

The various settings

The results of the protection and automation checks

The result of the test records after commissioning.

3. PRODUCT VERIFICATION TESTS

3.1 Allocation of terminals

It is necessary to consult the appropriate wiring diagram provided in the APPENDIX 1 of the Technical Guide whilst observing the various polarities and ground/earth connection.

3.2 Electrostatic discharge (ESD)

Before any handling of the module (active part of the relay), please refer to the recommendations in User guide of this Technical Guide.

3.3 Visual inspection

Carefully examine the relay to see if there has been any possible deterioration following installation.

Check if the external wiring corresponds to the appropriate relay diagram or the assembly diagram. The reference number of the relay diagram is indicated on a label situated under the upper flap of the front panel.

When the relay is withdraw from its case, use a continuity tester to check if the current short-circuits (phases and earth CT's) between the terminals indicated on the wiring diagram are closed.

3.4 Earthing

Check if the earth connection of the case situated above the rear terminal block is used to connect the relay to a local earth bar. With several relays present, make sure that the copper earth bar is properly installed for solidly connecting the earthing terminals of each case.

3.5 Current transformers (CT's)

DANGER :
NEVER OPEN CIRCUIT THE SECONDARY CIRCUIT OF A CURRENT TRANSFORMER SINCE THE HIGH VOLTAGE PRODUCED MAY BE LETHAL AND COULD DAMAGE INSULATION.

3.5.1 Use of a Core CT for earth faults.

If a core CT is used to detect earth faults, prior to any test, the user must check the following points:

MV or HV cable screens and core CT,

No current flow through the MV or HV cables,

Orientation of the core CT (P1-S1, P2-S2)

3.5.1.1 Cable shields and core CT

When mounting a core CT around electric cables, check the connection to the earth of the cable shields. It is vital that the earth cable of the shield moves in the opposite direction through the core CT. This cancel the currents carried by the cable shields through the core CT.

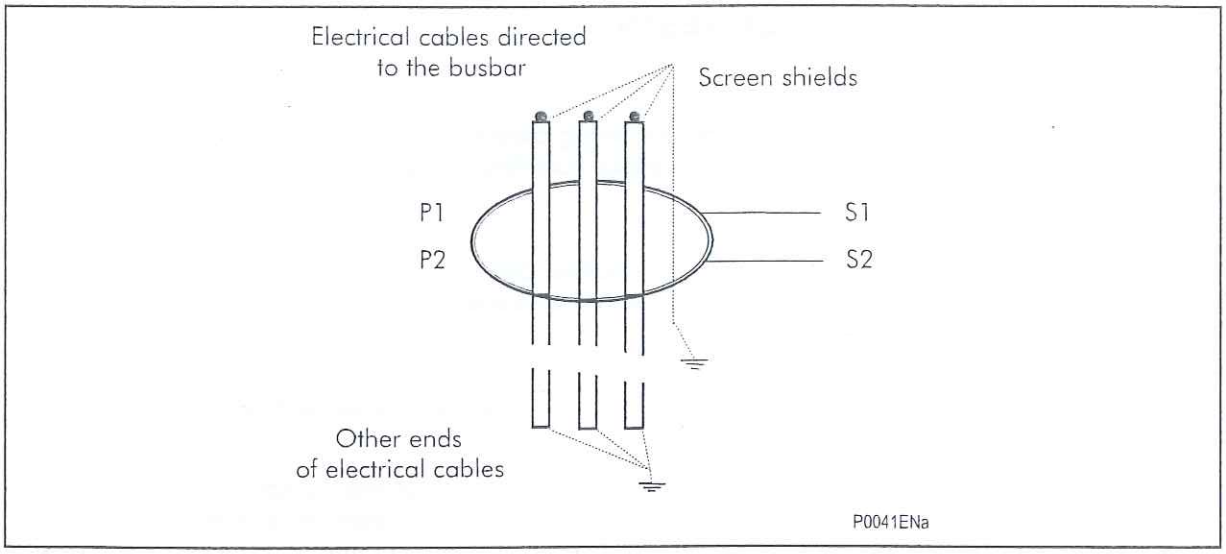

FIGURE 1 : SCREEN SHIELDS AND CT CORE

3.5.1.2 Induced current flow through electric cables

When an electric line is earthed at its two ends for logging purposes, induced current may circulate if a second line is in parallel. This current can be read on the **MiCOM P120, P121, P122** and **P123** and produce false readings.

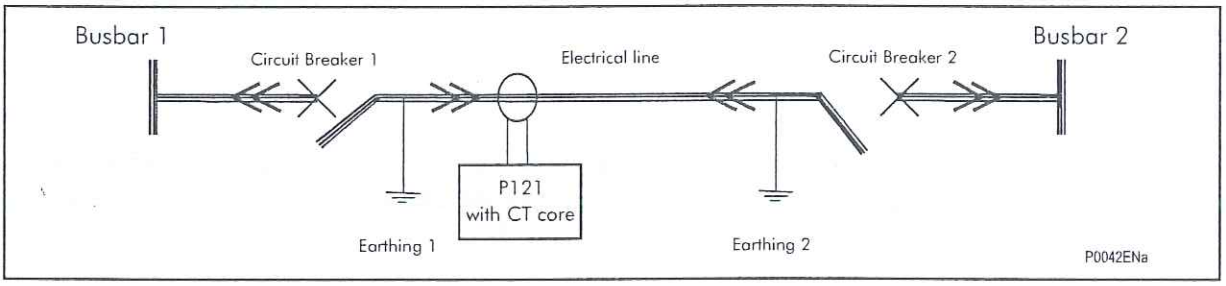

FIGURE 2 : LOGGING OF AN ELECTRICAL LINE

3.5.1.3 Core CT polarity

It is necessary to check the polarity of the core CT by following the figure below :

Momentarily connect the battery + to P1 and – to P2. The centre zero ammeter connected with + to S1 and – to S2 will deflect in the positive direction if the wiring is correct.

CT phase may be tested using the same method.

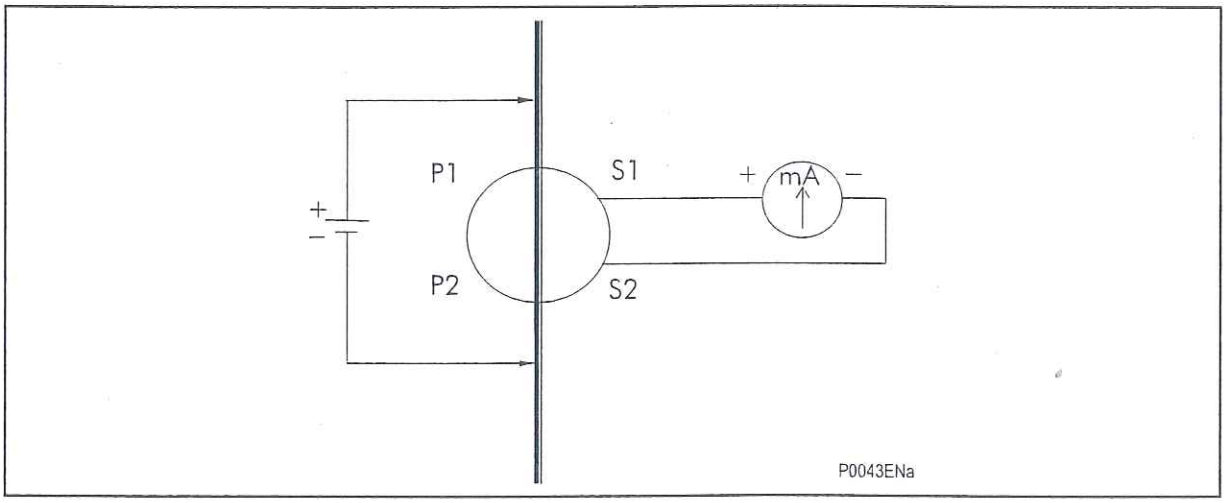

FIGURE 3 : CORE CT ORIENTATION TEST

NOTE : De-magnetise the CT after polarity test. Inject an ac current starting from zero and increase to slowly exceed the CT nominal value and then decrease slowly to zero.

3.6 Auxiliary supply

Check the value of the auxiliary supply voltage (terminals 33 and 34). The value measured shall be between 0.8 and 1.2 time the dc nominal auxiliary supply voltage, or 0.8 and 1.1 time the ac nominal auxiliary supply voltage indicated on **MiCOM P120, P121, P122** and **P123**.

Uaux range (Volts)	Uaux nominal zone (Volts)	Maximum peak value (Volts)
24 - 60 Vdc	19 - 72 Vdc	80
48 - 150 Vdc	38 -180 Vdc	201
130 - 250 Vdc/100 - 250 Vac	100 - 300 Vdc/80 - 275 Vac	336

3.7 Logic inputs

This test checks that all the opto-isolated inputs are functioning correctly. The P123 have 5 opto-isolated inputs while P122 relays have 3 opto-isolated inputs and P120/P121 have 2 logic opto-isolated inputs.

The opto inputs should be energised on at a time. The status of the input can be viewed using menu OP. PARAMETERS/Input Status, an 1 indicating an energised input and a 0 indicating a de-energised input. When each logic input is energised one of the characters on the bottom line of the menu display will change to the value show in the following table to indicate the new state of the inputs.

Input	MiCOM P12x models	OP. PARAMETERS/Inputs Status cell value
Opto input 1 22-24 Terminals	P120,P121, P122, P123	00001
Opto input 2 26-28 Terminals	P120,P121, P122, P123	00010
Opto input 3 17-19 Terminals	P122, P123	00100
Opto input 4 21-23 Terminals	P123	01000
Opto input 5 25-27 Terminals	P123	10000

3.8 Logic outputs

This test checks that all outputs are functioning correctly. The P123 have 9 outputs while P122 relays have 7 outputs and P120/P121 have 5 outputs.

For all MiCOM relays, the WATCHDOG output is a normally close relays and is designed as WD (35-36), (normally open pin terminals 35-37).

For all MiCOM relays, the RL1 and RL2 are change-over relays (2-4-6, 8-10-12).

For all MiCOM relays, the RL3 and RL4 are normally open relays (14-16, 18-20).

For MiCOM P122 and P123 relays, the RL5 and RL6 are normally open relays (1-3, 5-7).

For MiCOM P123 relay, the RL7 and RL8 are normally open relays (9-11, 13-15).

Each output contact may have its own and independent power supply (refer to wiring schemes).

The status of the outputs can be viewed using menu OP. PARAMETERS/ Relay Status, an indicating an close output relay and a 0 indicating a open output relay. When each output relay is closed one of the characters on the bottom line of the menu display will change to the value show in the following table to indicate the new state of the inputs.

OUTPUT	MiCOM P12x models	OP. PARAMETERS/Relay Status cell value
RL 1	P120,P121, P122, P123	00000001
RL 2	P120,P121, P122, P123	00000010
RL 3	P120,P121, P122, P123	00000100
RL 4	P120,P121, P122, P123	00001000
RL 5	P122, P123	00010000
RL 6	P122, P123	00100000
RL 7	P123	01000000
RL 8	P123	10000000

3.9 RS 485 rear communication

This test should only be performed where the relay is to be accessed from a remote location and will vary depending on the communication protocol being adopted (refer to label under the upper flap).

It is not the intention of the test to verify the operation of the complete system from the relay to the remote location, just the relay's rear communication port and any protocol converter necessary.

Connect a laptop PC to the RS485 rear port (via a KITZ for Courier communication) and check the communication with the appropriate command.

4. SETTING CHECK

The setting checks ensure that all of the application-specific relay setting for the particular installation have been correctly applied to the relay.

Transfer the setting file to the relay using a laptop PC running the appropriate software via the RS232 front port (MiCOM P122 and P123) or the RS485 rear port (all MiCOM models). This method is preferred transfer function settings because it is much faster and there is less margin for error.

If the setting software is not used then enter manually via the relay front panel interface.

The commissioning is following the points below:

- Consignation of the settings
- Validation of the measurements
- Validation of the thresholds and associated timers.

4.1 Settings

Carry forward the settings on the commissioning test sheets.

4.2 Measurements

The **MiCOM P120, P121, P122** and **P123** relays measure phase and earth currents (P120 only one phase or earth) as a True RMS value up to the 10th harmonics. The value(s) indicated take account of the phase and/or earth CT ratio.

WARNING : MiCOM P120, P121, P122 AND P123 RELAYS HAVE 1 AND 5 AMP CURRENT INPUTS.
CHECK THAT THE INJECTED CURRENT IS COMPATIBLE WITH THE SELECTED RANGE.

4.2.1 MiCOM P120

- Note the select CT ratio.
- Energise the **MiCOM P120** relay.
- Apply current to input terminals 55-56 or 47-48 and verify the value on the LCD display.
- Carry forward the results to the Commissioning test sheets (Applied value and relay value displayed)

4.2.2 MiCOM P121, P122 and P123

- Note the select phase and earth CTs ratio.
- Energise the **MiCOM P121, P122** or **P123** relay.
- Apply current to input (as per wiring diagram) and verify the values on the LCD display.
- Carry forward the results to the Commissioning test sheets (Applied values and relay values displayed).

4.3 Phase overcurrent (I> and I>>)

Set the various thresholds on the trip output (refer to User Guide). For **MiCOM P120**, the same test can be performed for the phase/or earth threshold.

4.3.1 Test wiring diagram

This test wiring diagram makes it possible to conduct tests relating to the I> and I>> thresholds.

The diagram describes current injection onto the 5 Amp phase current inputs (terminals 41-42, 43-44, 45-46). To carry out injection for the 1 Amp phase inputs, perform the same test on the 1 Amp inputs (terminals 49-50, 51-52, 53-54).

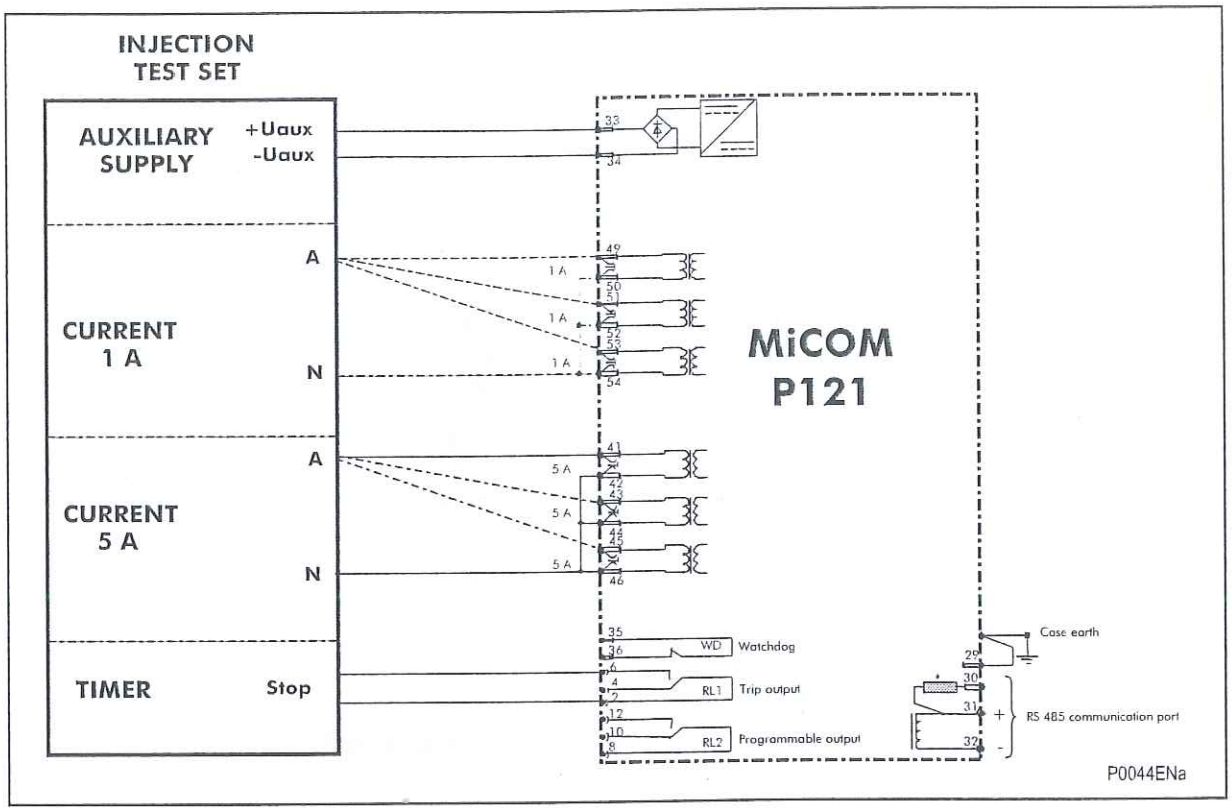

FIGURE 4 : I> AND I>> TESTS WIRING

4.3.2 MiCOM settings

4.3.2.1 MiCOM P120 Settings

Protection Menu

I_e>	YES
I_e>	1 In
tI_e>	DMT or IDMT or RI
tI_e> (if DMT)	20 s
Type of curve (if IDMT)	IEC VI or IEEE VI
TMS value (if IDMT)	1
K value (if RI)	1
I_e>>	YES
I_e>>	12 In
tI_e>>	10 s

AUTOMAT. CTRL/Trip commands Menu

TRIP tI_e>	YES
TRIP tI_e>>	YES

4.3.2.1.1 MiCOM P121, P122 and P123 settings

Protection Menu

I>	YES
I>	1 In
tI>	DMT or IDMT or RI
tI> (if DMT)	20 s
Type of curve (if IDMT)	IEC VI or IEEE VI
TMS value (if IDMT)	1
K value (if RI)	1
I>>	YES
I>>	12 In

AUTOMAT. CTRL/Trip commands Menu

TRIP tI>	YES
TRIP tI>>	YES

4.3.2.2 I> threshold with DMT tI>

Values to be recorded :

I> threshold for each phase

Time delay tI> for each phase.

I> threshold check:

If the time delay tI> is short, gradually increase the injection current up to the value of the I> threshold.

If the time delay tI> is long, inject 0.95 x I threshold and check that there is no tripping. Then inject 1,1 x I threshold and check the trip.

Gradually decreases the injected current and record the value of the drop out I> threshold.

Checks :

Alarm message on the LCD display.

Alarm LED flashes.

Trip LED on

I> threshold LED on (if programmed).

Trip output closes.

I> threshold output closes (if programmed).

tI> time delay check :

Apply a current onto one of the phases and measure the time delay tI> by pre-setting the current above the I> threshold (I injected > 2 x I threshold).

Apply a current onto one of the phases and measure the time delay tI> by pre-setting the current above the I> threshold (I injected > 10 x I threshold).

4.3.2.3 I> threshold with IDMT tI>

Values to be recorded :

I> threshold for each phase

tI>time delay for each phase.

I> threshold check:

Inject a current equal to 2 x I threshold onto one of the phase current inputs. Repeat the operation for various current values (n x I threshold with n ranging from 4 to 10, for example). Check that the values measured correspond to those indicated in the table below (for TMS = 1).

IEC curves

Type of curve	Tripping time (in seconds) for TMS =1					
IEC	2 x I threshold			10 x I threshold		
	Nominal	Min	Max	Nominal	Min	Max
Accuracy	+/- 12.5 % for nominal tripping time greater than 40ms. +/- 50 ms for nominal tripping time less than 40ms.			+/- 5 % for nominal tripping time greater than 40ms. +/- 20 ms for nominal tripping time less than 40ms.		
STI (Alstom)	1.78	1.56	2.00	0.518	0.492	0.544
SI	10.03	8.78	11.28	2.971	2.822	3.119
VI	13.5	11.81	15.19	1.5	1.425	1.575
EI	26.67	23.33	30.00	0.808	0.7676	0.8484
LTI (Alstom)	120	105.0	135.0	13.33	12.667	14.00

IEEE/ANSI curves

Type of curve	Tripping time (in seconds) for TMS =1					
IEEE/ANSI	2 x I threshold			10 x I threshold		
	Nominal	Min	Max	Nominal	Min	Max
Accuracy	+/- 12.5 % for nominal tripping time greater than 40ms. +/- 50 ms for nominal tripping time less than 40ms.			+/- 5 % for nominal tripping time greater than 40ms. +/- 20 ms for nominal tripping time less than 40ms.		
STI (CO2)	1.7319	1.515	1.948	0.5249	0.4987	0.5512
MI	3.8032	3.328	4.279	1.2068	1.1464	1.2671
LTI (CO8)	2.1633	1.893	2.434	0.2401	0.2201	0.2601
VI	7.0277	6.149	7.906	0.6891	0.6546	0.7235
EI	9.5215	8.33	10.71	0.4063	0.3860	0.4267

RI electromechanical curve

Type of curve	Tripping time (in seconds) for K =1			
Electromechanical	2 x I threshold		10 x I threshold	
	Nominal	Min - Max	Nominal	Min - Max
RI	4.5	4 - 5	3.2	2.8 - 3.6

Rectifier curve

Type of curve	Tripping time (in seconds) for TMS =1			
Rectifier	2 x I threshold		10 x I threshold	
	Nominal	Min - Max	Nominal	Min - Max
RC	966	917 - 1014	0.402	0.382 - 0.422

Laborelec curve

Type of curve	Tripping time (in seconds)			
	Primary zero sequence 1A		Primary zero sequence 40A	
	Nominal	Min - Max	Nominal	Min - Max
Laborelec 1	4	3.80 - 4.20	0.5	0.48 - 0.52
Laborelec 2	4.5	4.22 - 4.73	1	0.96 - 1.04
Laborelec 3	5	4.75 - 5.25	1.5	1.44 - 1.56

For other injected current values, compare the values found with the theoretical values calculated according to the formulae of the curves.

NOTE : Equations of IEC, IEEE/ANSI, RI, RC and Laborelec curves are given in Chapter "Application Guide" of the present Technical Guide.

Checks :

Display of an alarm message on the front panel LCD.

Alarm LED flashes.

Trip LED on

I> threshold LED on (if programmed).

Trip output closes.

I> threshold output closes (if programmed).

4.3.2.4 I>> threshold

Values to be recorded

I>> threshold for each phase

tI>> time delay for each phase

I>> threshold check :

If tI>> time delay is short, gradually raise the injection current up to the value of I>> threshold.

If tI>> time delay is long, inject 0.95 x I threshold and check there is no trip. Then inject 1.1 x I threshold and check the trip output is close.

Gradually lower the injected current and note the value of the drop out I>> threshold.

Checks :

Display of an alarm message on the front panel LCD.

Alarm LED flashes

Trip LED on

I>> threshold LED on (if programmed).

Trip output closes.

I>> threshold output closes (if programmed).

tI>> time delay check :

Apply a current onto one of the phases and measure the time delay tI>> by pre-setting the current above the I>> threshold (I injected > 2 x I threshold).

Apply a current onto one of the phases and measure the time delay tI>> by pre-setting the current above the I>> threshold (I injected > 10 x I threshold).

4.4 Final checks

The tests are now complete. Remove all test or temporary shorting leads, etc... If it is necessary to disconnect any of the external wiring from the relay in order to perform the wiring verification tests, it should be ensured that all connections are replace in accordance with the relevant external connection or scheme diagram.

If a MMLG test block is installed, remove the MMLB01 test plug and replace the MMLG cover so that the protection is put into service.

For **MiCOM P122** and **P123** models, ensure that all event, fault and disturbance records, alarm and LEDs have been reset before leaving the relay.

For **MiCOM P123**, if the relay is in a new installation or the circuit breaker has been just maintained, the circuit breaker maintenance and current counters should be zero. These counters can be reset using command in RECORD/CB Monitoring menu (refer to User Guide).

5. MAINTENANCE

5.1 Equipment failure

MiCOM P120, P121, P122 and **P123** relays are full digital and self-diagnosing. As soon as an internal fault is detected, depending on its type (minor or major), an alarm message is displayed as a priority on the front panel LCD before the fault LED is illuminated (fixed or flashing) and the watchdog relay is closed (if the fault is a major one).

An equipment failure (major or minor) cannot be acknowledged on the front panel (using the dedicated tactile button keypad). Only the disappearance of the cause will acknowledge the fault and hence reset the fault LED.

All tests are performed during relay boot and permanently in the background software task excepted EEPROM tests performed only when relay boots and on any setting change.

All tests are performed during relay boot and permanently in the background software task excepted EEPROM tests performed only when relay boots and on any setting change.

5.1.1 Minor fault

Regarded by the **MiCOM P120, P121, P122** and **P123** relays as a minor fault is a communication failure. If the communication is in fault, **MiCOM P120, P121, P122** and **P123** protection and automation modules are not affected. The MiCOM relay is fully operational. The watchdog relay is energised (35-36 contact open and 36-37 contact closed).

Message :

"COMM.ERROR" : Communication fault

Cause :

Hardware or software failure of the communication module

Action :

Withdraw the active part and return it to the factory for repair.

Alternative : If communication is not used, disable communication in the COMMUNICATION menu (Communication ? = No).

Message :

"RAM ERROR" : Ram supplied by battery in fault.

"Battery Fail" : Battery in fault.

Cause :

See Section 5.2.3 of this Commissioning and Maintenance Guide.
If the message still remain after restart, return the module to the factory for repair.

5.1.2 Major fault

Major fault for **MiCOM P120, P121, P122** and **P123** relays are all software and hardware failures except the communication faults. As soon as this type of failure is detected, the watchdog (WD) is de-energised (35-36 contact closed and 36-37 contact open) and all operations are stopped (protection, automation, communication).

5.1.2.1 Hardware and software faults

Messages :

"DEFAULT SETTING" : Indication that the relay has its default setting

"SETTING ERROR" : Failure to get access to EEPROM during setting change

"EEPROM ERROR CALIBR." : Calibration zone in fault

"CT ERROR" : Analogue channel in fault

Cause :

Hardware or software failure

Action :

Restart the protection software (refer § 5.3).
If the software fault still remain after restart, withdraw the active part and return the module to the factory for repair.

5.2 Method of repair

5.2.1 Replacing the active part

The case and the rear terminals blocks have been designed to facilitate removal of the MiCOM P12x relay should replacement or repair become necessary without disconnect the scheme wiring.

NOTE : The MiCOM range of relays have integral current transformer shorting switches which will close when the active part is removed from the case.

Remove the upper and lower flap without exerting excessive force. Remove the external screws. Under the upper flap, turn the extractor with a 3 mm screwdriver and extract the active part of the relay by pulling from the upper and lower notches on the front panel of the MiCOM relay.

The reinstall the repaired or replacement relay follow the above instruction in reverse, ensuring that no modification has been done on the scheme wiring.

5.2.2 Replacing the complete relay

To remove the complete relay (active part and case) the entire wiring must be removed from the rear connector.

Before working at the rear of the relay, isolate all current supplies to the MiCOM relay and ensure that the relay is no more powered.

DANGER :
NEVER OPEN THE SECONDARY CIRCUIT OF A CURRENT TRANSFORMER SINCE THE HIGH VOLTAGE PRODUCED MAY BE LETHAL AND COULD DAMAGE TO THE INSULATION.

Remove all wiring (communication, logic inputs, outputs, auxiliary voltage, current inputs). Disconnect the relay earth connection from the rear of the relay.

Remove the screws used to fasten the relay to the panel, rack, etc... .These are the screws with the larger diameter heads that are accessible when the upper and lower flaps are installed.

Withdraw the relay from the panel, rack, etc... carefully because it will be heavy due to the internal transformers.

To reinstall the repaired or replacement relay follow the above instructions reverse, ensuring that each terminal block is relocated in the correct position and case earth, communication are replaced.

Once reinstallation is complete the relay should be recommissioned using the instruction in sections 1 to 4 inclusive of this chapter.

5.2.3 Changing the battery (MiCOM P122 & P123 only)

Each **MiCOM P122** and **P123** relay has a battery to maintain recording data and the correct time when the auxiliary voltage fails. The data maintained include event, fault and disturbance records and the thermal state at the time failure.

The battery is designed for a life of 10 years in standard atmospheric conditions.

"RAM ERROR" message could be the result of a battery failure.

"Battery Fail" message is the result of a battery failure.

To replace the battery follow the following instructions :

- Open the lower flap on the front of the relay
- Gently extract the battery from its socket. If necessary, use a small screwdriver.
- Ensure that metal terminals in the battery socket are free from corrosion, grease and dust.
- The replacement battery should be removed from its packaging and placed into the battery holder, ensure that the polarity markings on the battery agree with those adjacent to the socket.

NOTE :

ONLY USE A TYPE 1/2AA LITHIUM BATTERY WITH A NOMINAL VOLTAGE OF 3.6 V.

- Ensure that the battery is securely held in its socket and that the battery terminals are making good contact with the metal terminals of the socket.
- Close the lower flap on the front of the relay.
- The battery that has been removed should be disposed of in accordance with the disposal procedure for Lithium batteries in the country in which the relay is installed.

5.3 Problem solving

5.3.1 Password lost or not accepted

Problem :

Password lost or not accepted

Cause :

MiCOM P120, P121, P122 and **P123** relays are supplied with the password set to ***AAAA.*** This password can be changed by the user (refer OP PARAMETERS menu).

Action :

There is an additional unique recovery password associated to the relay which can be supplied by the factory or service agent, if given details of its serial number (under the upper flap of the front panel). With this serial number, contact your AREVA T&D'S Automation & Information Systems Business local dealer or AREVA T&D'S Automation & Information Systems Business After Sales Dept.

5.3.2 Communication

5.3.2.1 Values measured locally and remotely

Problem :

The measurements noted remotely and locally (via RS485 communication) differ.

Cause :

The values accessible on the front face via the Measurement menu are refreshed every second. Those fed back via the communication and accessible by the AREVA T&D'S Automation & Information Systems Business Setting software generally have skeletal refreshing frequencies. If the refreshing frequency of the supervision software differs from that of **MiCOM P120, P121, P122** and **P123** relays (1s), there may be a difference between indicated values.

Action:

Adjust the frequency for refreshing the measurements of the supervision software or of the setting software to 1 second.

5.3.2.2 MiCOM relay no longer responds

Problem :

No response from **MiCOM P120, P121, P122** and **P123** relays when asked by the supervision software without any communication fault message.

Cause :

Mainly, this type of problem is linked to an error in the **MiCOM P120, P121, P122** and **P123** communication parameters.

Action :

Check **MiCOM P120, P121, P122** and **P123** communication parameters (data rate, parity, etc.) are in accordance with the supervision settings.

Check **MiCOM P120, P121, P122** and **P123** network address.

Check that this address is not used by another device connected on the same LAN.

Check that the other devices on the same LAN answer to supervision requests.

5.3.2.3 A remote command is not taken in account

Problem :

The communication between the relay and the PC is correct, but the relay does not accept any remote command or file downloading.

Cause :

Generally this is due to the fact that the relay is in programming situation. This means that the password is active.

Action :

Check that the password is not active in the relay since the last 5 minutes.