TeSys™ T LTM R Modbus/TCP

Motor Management Controller

Quick Start Guide

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www.se.com

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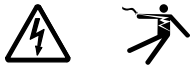
Table of Contents

Safety Information

Read these instructions carefully and examine the equipment to become familiar with the device before attempting to install, operate, service, or maintain it. The following special messages may appear throughout this user guide or on the equipment to warn of hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

NOTE: Provides additional information to clarify or simplify a procedure.

Please Note

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A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Electrical equipment should be transported, stored, installed, and operated only in the environment for which it is designed.

Proposition 65 Notice

WARNING: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

About the Book

Document Scope

The Quick Start Guide uses an application example to describe the different steps to quickly install, configure and use TeSys™ T.

This document is not intended to replace the following documents:

- TeSys T LTM R Modbus/TCP Motor Management Controller User Manual
- TeSys T LTM R Instruction Sheet
- TeSys T LTM E Instruction Sheet

Related Documents

Title of Documentation	Reference Number
TeSys T LTM R Modbus/TCP Motor Management Controller User Manual	1639505
TeSys T LTM R•• Instruction Sheet	AAV7709901
TeSys T LTM E•• Instruction Sheet	AAV7950501
TeSys T LTM CU Control Operator Unit User Manual	1639581
TeSys T LTM CU Instruction Sheet	1639582

You can download these technical publications and other technical information from our website at www.se.com/ww/en/download/.

Quick Start Guide

Overview of the Application Example

Introduction

The Quick Start Guide uses an application example to illustrate each step in the process of installing, configuring and using TeSys T.

The application example uses the LTM R controller to protect and control a motor and its driven load, in this case, a pump.

This application example is intended to:

- show you how to configure the LTM R controller in a few steps,
- provide an example you can modify to develop your own configuration,
- serve as a starting point for the development of more complex configurations, incorporating such additional features as HMI or network control.

Functions Performed

When the LTM R controller has been configured in order to protect and control the motor and pump, it will perform the following functions:

- thermal overload protection
- motor temperature sensor protection
- voltage protection / undervoltage
- external ground current trip protection
- initial system configuration during commissioning using PC and PowerSuite software

Operating Conditions

The operating conditions used in the application example are:

- motor power: 4 kW
- line-to-line voltage: 400 Vac
- current: 9 A
- control circuit voltage: 230 Vac
- 3-wire control
- motor trip class 10
- start button
- stop button
- reset button on enclosure door
- trip light
- alarm light
- full voltage, non-reversing starter (direct over the line starter)
- 24 Vdc power supply in the motor control center or control station for future use with LTM E expansion module inputs

Network Conditions

The network conditions for the example are:

- protocol: Modbus/TCP
- address: 1

Components Used

The application example uses the following components:

Item	Component Description	Reference Number
1	LTM R 100-240 Vac Modbus/TCP motor management controller (1.35...27 A FLC)	LTMR27EFM
2	LTM E 24 Vdc expansion module	LTMEV40BD
3	LTM R to LTM E RJ45 connection cable	LTMCC004
4	PowerSuite cable kit	VW3A8106
5	PowerSuite software on CD-ROM, version ≥ 2.5	PowerSuite
6	External ground current sensor	TA30
7	External PTC binary motor temperature sensor	User supplied

Presentation of the TeSys T Motor Management System

System Overview

The TeSys T Motor Management System offers protection, control, and monitoring capabilities for single-phase and 3-phase AC induction motors.

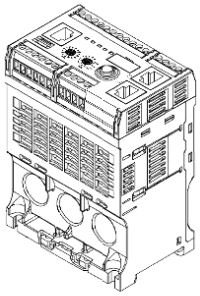
The system offers diagnostic and statistics functions and configurable alarms and trips, allowing better prediction of component maintenance, and provides data to continuously improve the entire system.

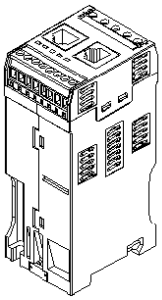
The 2 main hardware components of the system are:

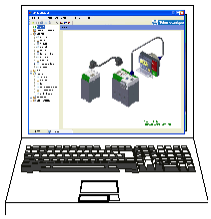
- the LTM R controller, and
- the LTM E expansion module.

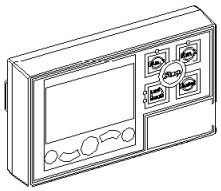
System Presentation

The following tables describe the main components of the TeSys T Motor Management System.

LTM R Controller	Functional Description	Reference Number
	• current sensing 0.4...100 A • single-phase or 3-phase current inputs • 6 discrete logic inputs • 4 relay outputs: 3 SPST, 1 DPST • connections for a ground current sensor • connection for a motor temperature sensor • connection for network • connection for HMI device or expansion module • current protection, metering and monitoring functions • motor control functions • power indicator • trip and alarm LED indicators • network communication and alarm indicators • HMI communication LED indicator • test and reset function	LTMR08EBD (24 Vdc, 0.4...8 A FLC) LTMR27EBD (24 Vdc, 1.35...27 A FLC) LTMR100EBD (24 Vdc, 5...100 A FLC) LTMR08EFM (100...240 Vac, 0.4...8 A FLC) LTMR27EFM (100...240 Vac, 1.35...27 A FLC) LTMR100EFM (100...240 Vac, 5...100 A FLC)

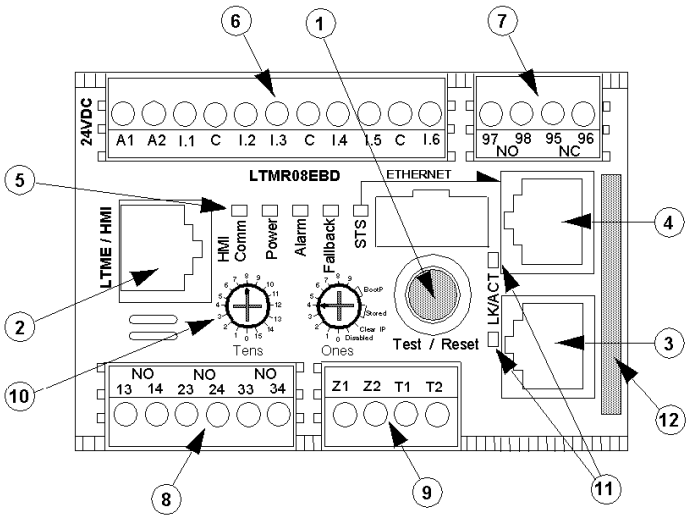
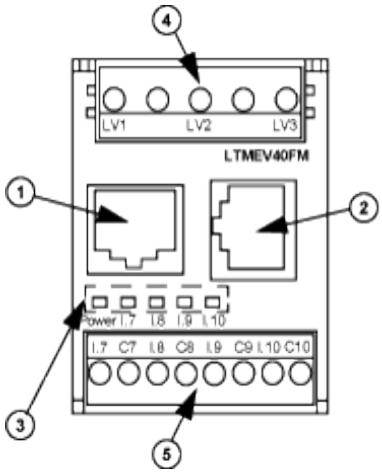
LTM E Expansion Module	Functional Description	Reference Number
	• voltage sensing 110...690 Vac • 3-phase voltage inputs • 4 additional discrete logic inputs • additional voltage protection, metering and monitoring functions • power LED indicator • logic input status LED indicators Additional components required for an optional expansion module: • LTM R controller to LTM E connection cable	LTMEV40BD (24 Vdc logic inputs) LTMEV40FM (100...240 Vac logic inputs)

PowerSuite Software	Functional Description	Reference Number
	• configure the system through menu entries • display parameters, alarms, and trips • control the motor Additional components required for PowerSuite software: • a PC • separate power source • LTM R/LTM E to PC communication cable	PowerSuite ≥ v 2.5 VW3A8106 (PowerSuite cable kit)

LTM CU Control Operator Unit	Functional Description	Reference Number
	• configure the system through menu entries • display parameters, alarms, and trips • control the motor Additional components required for an optional HMI device: • LTM R/LTM E to HMI communication cable • HMI to PC communication cable	LTM CU VW3A1104R.0 (HMI communication cable) VW3A8106 (PowerSuite cable kit) LTM9KCU Kit for portable LTM CU

LTM R and LTM E Description

The following diagrams show the features of the LTM R controller and LTM E expansion module:

LTM R Controller	LTM E Expansion Module
	
1 Test / Reset button **2** LTM E / HMI port with RJ45 connector connecting the LTM R controller to an HMI, PC, or LTM E expansion module **3** Ethernet port number 1 with RJ45 connector connecting the LTM R controller to a Modbus/ TCP network **4** Ethernet port number 2 with RJ45 connector connecting the LTM R controller to a Modbus/ TCP network **5** LTM R status-indicating LEDs **6** Plug-in terminal: control power, logic inputs and commons **7** Plug-in terminal: double pole/single throw (DPST) output relay **8** Plug-in terminal: output relay **9** Plug-in terminal: ground current trip input and temperature sensor input **10** Rotary switches (Tens and Ones) for IP addressing **11** Ethernet port link and activity LEDs **12** MAC address	**1** Port with RJ45 connector to HMI or PC **2** Port with RJ45 connector to LTM R controller **3** Status-indicating LEDs **4** Plug-in terminal: voltage inputs **5** Plug-in terminal: logic inputs and common

Installation

Overview

The following procedure describes how to install and physically configure the TeSys T system, according to the operating conditions used in the application example. The same procedure is used for other configurations.

The full installation procedure is shown on the Instruction sheets provided with the LTM R controller and the LTM E expansion module. It is also described in detail in the Installation chapter of the User Manual.

⚠DANGER

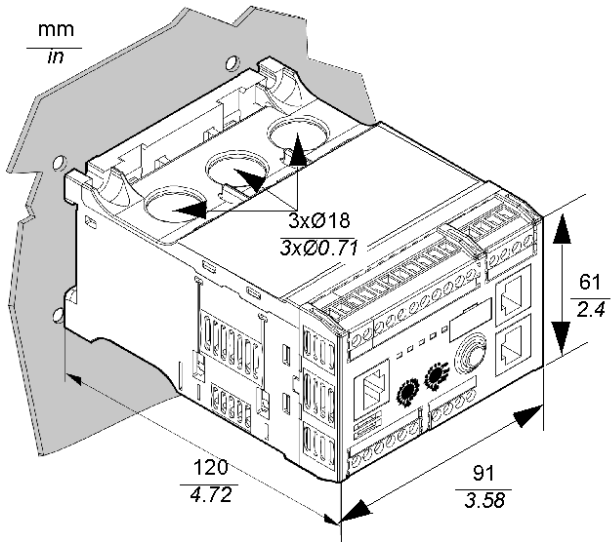
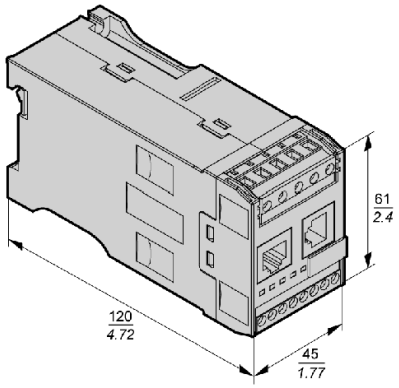
HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

Turn off all power supplying this equipment before working on it.

Apply appropriate personal protective equipment (PPE) and follow safe electrical work practises.

Failure to follow these instructions will result in death or serious injury.

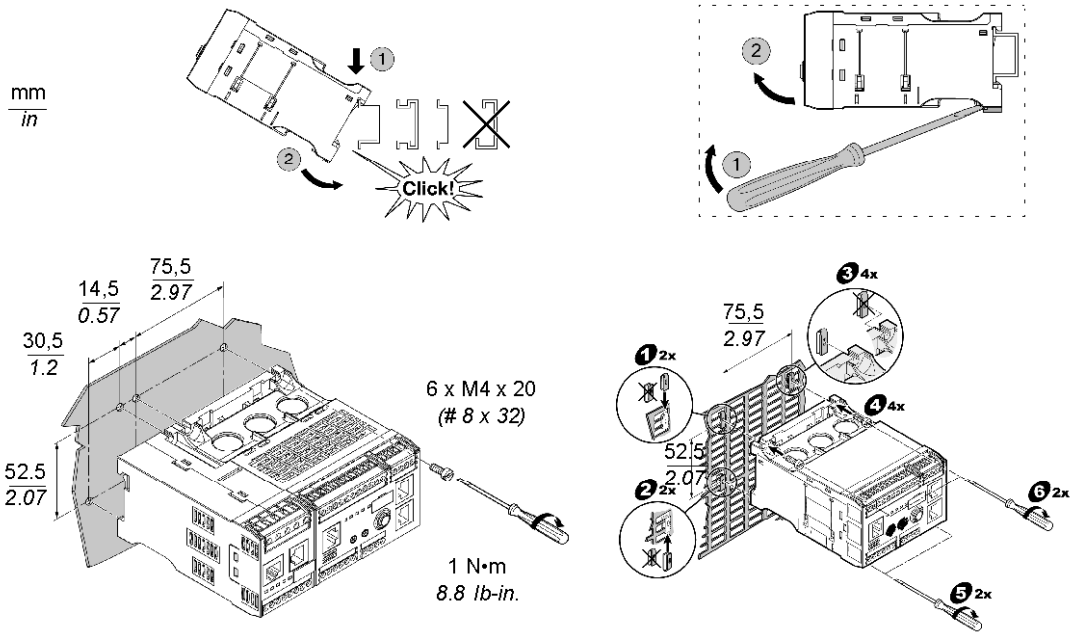
The following diagrams show the physical dimensions of the LTM R controller and the LTM E expansion module:

LTM R	LTM E
	

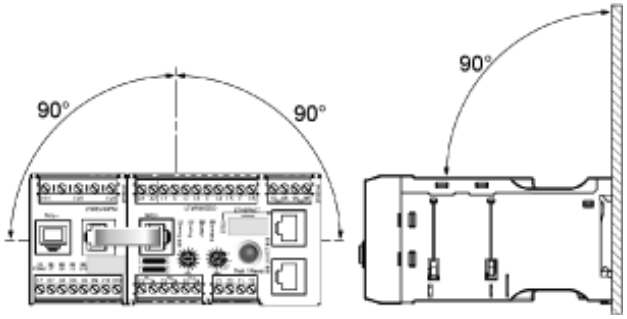
Mount LTM R and LTM E

Mount the LTM R controller and the LTM E expansion module, respecting clearance zones and operating position.

The diagrams below show how to mount the LTM R and LTM E on a DIN rail, solid mounting plate, or Telequick plate:



This diagram shows the operating positions possible:

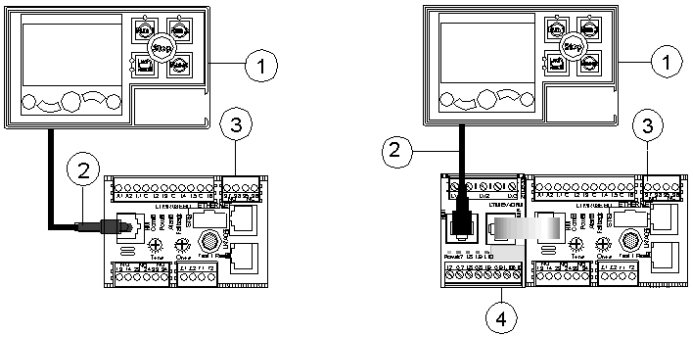


Connect LTM R to LTM E

Connect the LTM R controller and the LTM E expansion module using the RJ45 cable.

Connecting to a TeSys T LTM CU HMI Device (Optional)

The diagrams below show the TeSys T LTM CU HMI device connected to the LTM R controller, with and without the LTM E expansion module:



1 LTM CU Control Operator Unit

2 RJ45 cable (VW3 A1 104R30, in this example)

3 LTM R controller

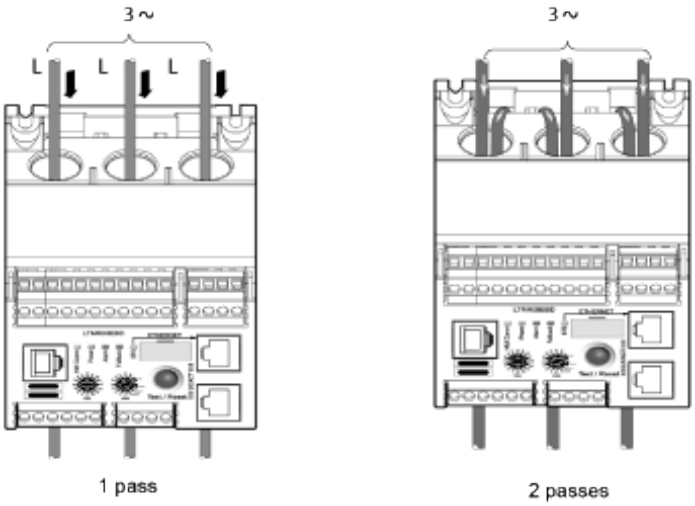
4 LTM E expansion module

Wire Current Transformers

Wire the current transformers according to the operating conditions:

- Product range → 1.35...27 A
- Nominal motor current → 9 A

1 pass through the CT windows is sufficient in this case, although 2 passes are possible:

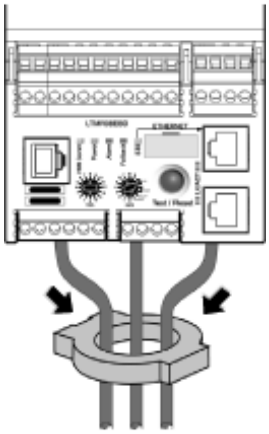


1 pass

2 passes

Wire Ground Current Sensor

Wire the ground current sensor:



Wire LTM R

- Wire the power supply and the I/O.
- Wire the temperature sensors.

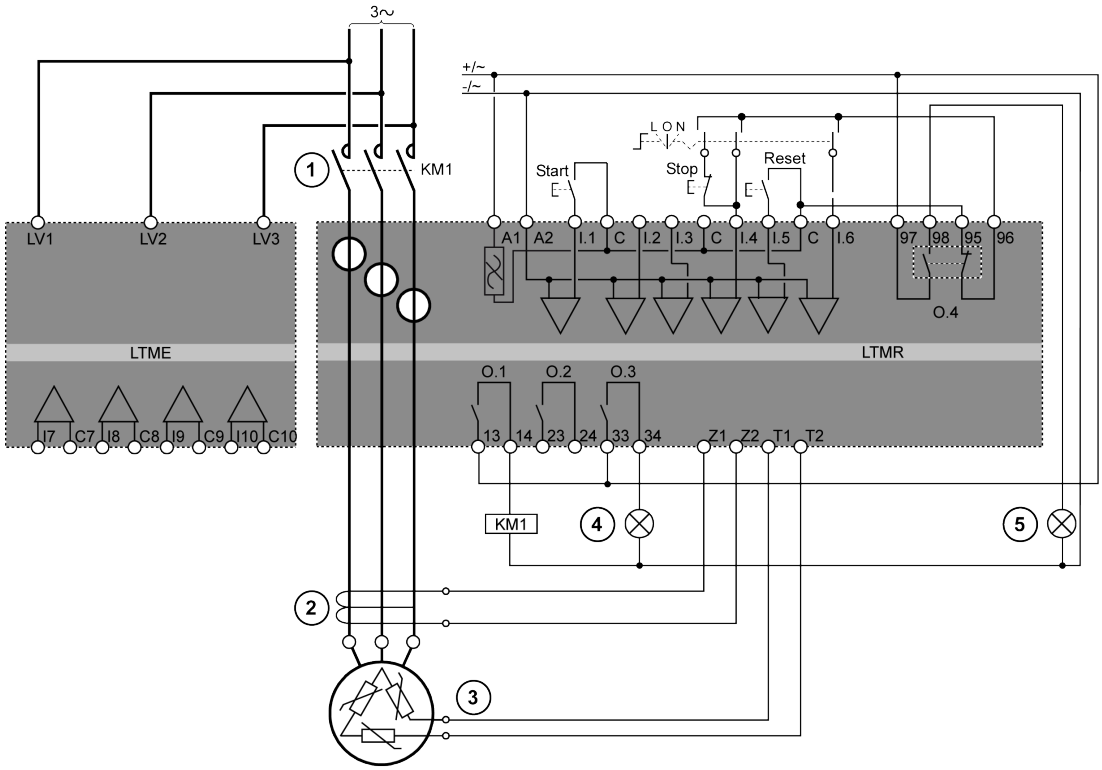
NOTICE
RISK OF DESTROYING THE INPUTS Connect the LTM R controller's inputs using the 3 Common (C) terminals connected to the A1 control voltage via an internal filter. **Failure to follow these instructions can result in equipment damage.**

Wire LTM E

Wire the voltage transformers and the I/O on the LTM E expansion module.

LTM R Controller Wiring

The diagram below illustrates the main power circuit and the 3-wire (impulse) local control with network control selectable, corresponding to the application example.



1 Contactor

2 Ground current sensor

3 PTC binary thermistor

4 Alarm indication

5 Trip indication

L Local control

O Off

N Network control

Configuration

Overview

After the wiring connections are made, the next step is to configure parameters using PowerSuite software (see the PowerSuite chapter of the User Manual).

⚠WARNING

UNINTENDED EQUIPMENT OPERATION

The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program and apply this product.

Follow all local and national safety codes and standards.

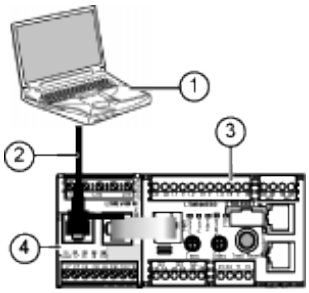
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Install Software

Step	Description
1	Place the installation disk into your PC's CD/DVD drive.
2	Navigate to and click on the setup.exe file. The setup wizard begins.
3	Follow the instructions in the setup wizard.

Connect to PowerSuite™ Software

In the application example:



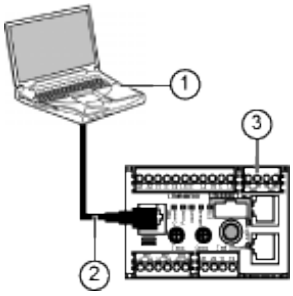
1 PC running PowerSuite software

2 PowerSuite cable kit VW3 A8 106

3 LTM R controller

4 LTM E expansion module

If you are not using the expansion module, the HMI connects directly to the controller:



1 PC running PowerSuite software

2 PowerSuite cable kit VW3 A8 106

3 LTM R controller

Set Parameters

Step	Description
1	Start up the PowerSuite software.
2	In the Load Configuration screen, select and open a configuration file with factory default settings.
3	Open the Device Information branch of the tree control and set the Operating parameter settings.
4	Open the Settings branch of the tree control.
5	Locate and set the Operating parameter settings in the Motor and Control sub-branch.
6	Repeat step 5 for all other setting item sub-branches.
7	Save a copy of the completed configuration settings to a new configuration file.

Parameter settings for the application example:

Device Information Branch	**Sub-branch**	**Parameter**	**Setting**
Device information	–	Current range	1.35-27 A
		Network	Modbus/TCP
		Control voltage	100-240 Vac
Settings Branch	**Sub-branch**	**Parameter**	**Setting**
Motor and Control Settings	Motor operating mode	Nominal voltage	400 V
		Nominal power	4 kW
		Operating mode	3 wire independent
		Contactor rating	9 A
		Phase	3 phase
	Motor temperature sensor	Sensor type	PTC binary
		Trip enable	Enable
		Trip level	According to motor
		Alarm level	According to motor
	Load CT	Load CT ratio	Internal
		Load CT passes	**1**(1)
	Ground current sensor	Ground current sensor ratio	1000:1
	Control mode	Local control	Terminal trip
Thermal Settings	Thermal overload	Trip type	Inverse thermal
		Trip class	10
		FLC1 (1)	**50 %**[1] **(equivalent to 9 A)**
		Trip enable	Enable
		Alarm enable	Enable

1. See FLC (Full Load Current) Settings, page 21.

Settings Branch	Sub-branch	Parameter	Setting
Current Settings	Ground Current Mode	Trip enable	Enable
		Trip level	1 A
		Trip timeout	0.5 s
		Alarm enable	Enable
		Alarm level	200 mA
Voltage Settings	Undervoltage	Trip enable	Enable
		Trip level	85 %
		Trip timeout	3 s
		Alarm enable	Enable
		Alarm level	90 %

Transfer the Configuration File

Step	Description
1	Open the configuration file to be transferred. • Be sure the file is in the Main window
2	Connect your PC to the LTM R controller. • Check the task bar to see whether your PC is connected to the LTM R controller.
3	Transfer the configuration file: • Select PC to Device, in either the **Link > File Transfer** sub-menu or the icon bar. • In the Upload Configuration dialog, click Continue. A progress bar briefly appears. • To confirm the success of the transfer, check the results in the Output window, which opens automatically at the bottom of the Main window. **Result:** The product is now ready to use.

FLC (Full Load Current) Settings

FLC Basics

NOTE: Before setting the FLC, you must first set the Contactor rating and Load CT ratio.

Load CT ratio = Load CT primary / (Load CT secondary * Passes)

Current sensor max = Current range max * Load CT ratio

Current range max is determined by the LTM R controller commercial reference. It is stored in units of 0.1 A and has one of the following values: 8.0, 27.0, or 100.0 A.

Contactor rating is stored in units of 0.1 A and is set by the user between 1.0 and 1000.0 A.

FLCmax is defined as the lower of the Current sensor max and the Contactor rating values.

FLCmin = Current sensor max / 20 (rounded to the nearest 0.01 A.). FLCmin is stored internally in units of 0.01 A.

NOTE: Do not set the FLC below the FLCmin.

Conversion of Amperes to FLC Settings

FLC values are stored as a percentage of FLCmax

FLC (in %) = FLC (in A) / FLCmax

NOTE: FLC values must be expressed as a percentage of FLCmax (resolution of 1 %). If you enter an unauthorized value, the LTM R will round it up to the nearest authorized value. For example, on a 0.4-8 A unit, the step between FLCs is 0.08 A. If you try to set an FLC of 0.43 A, the LTM R will round it up to 0.4 A.

Example (No External CTs)

Data:

- FLC (in A) = 9 A
- Current range max = 27.0 A
- Load CT primary = 1
- Load CT secondary = 1
- Passes = 1or 2
- Contactor rating = 18.0 A

Calculated parameters with 1 pass:

- Load CT ratio = Load CT primary / (Load CT secondary * passes) = 1 / (1 * 1) = 1.0
- Current sensor max = Current range max * Load CT ratio = 27.0 * 1.0 = 27.0 A
- FLCmax = min (Current sensor max, Contactor rating) = min (27.0, 18.0) = 18.0 A
- FLCmin = Current sensor max / 20 = 27.0 / 20 = 1.35 A
- FLC (in %) = FLC (in A) / FLCmax = 9.0 / 18.0 = 50 %

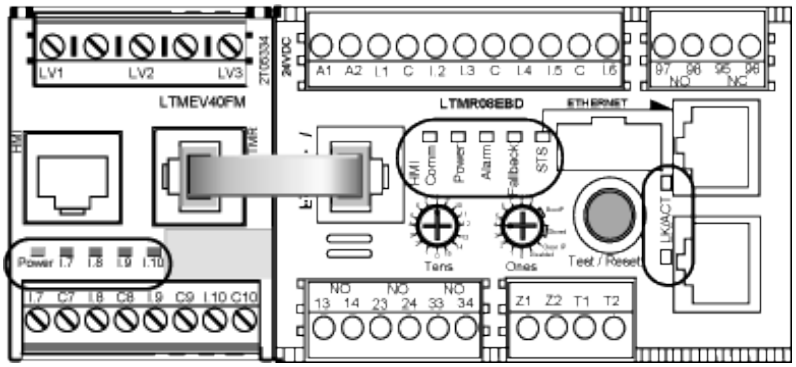
Calculated parameters with 2 passes:

- Load CT ratio = 1 / (1 * 2) = 0.5
- Current sensor max = 27.0 * 0.5 = 13.5 A
- FLCmax = min (13.5, 18.0) = 13.5 A
- FLCmin = Current sensor max / 20 = 13.5 / 20 = 0.67 A
- FLC (in %) = FLC (in A) / FLCmax = 9.0 / 13.5 = 66 %

Diagnostic

LTM R and LTM E LEDs

As the application example uses the LTM R and LTM E, you must check the LEDs on both components:



LEDs

Use the 7 LEDs on the face of the LTM R controller to monitor its state, as follows:

LTM R LED	Color	Describes	Indicates
HMI Comm	Yellow	Communication activity between LTM R controller and LTM E expansion module	• On = communication • Off = no communication
Power	Green	LTM R controller power or internal trip condition	• Solid green = power on, no internal trips, and motor off • Flashing green = power on, no internal trips, and motor on • Off = power off, or internal trips exist
Alarm	Red	Protection trip or alarm, or internal trip condition	• Solid red = internal or protection trip • Flashing red (2 x per second) = alarm • Flashing red (5 x per second) = load shed or rapid cycle condition • Off = no trips, alarms, load shed or rapid cycle (when power is On)
Fallback	Red	Communication connection between LTM R controller and network module	• Solid red = in fallback • Off = not in fallback (no power)
STS	Green	These LEDs together indicate network communication: connection, speed and activity	If the green STS LED and the green LK/ACT LED are solid ON: • Connection is established • Speed = 100 Mbits/s
LK/ACT	Green		If the green STS LED is solid ON and the green LK/ACT LED is solid OFF: • Connection is established • Speed = 10 Mbits/s
			If the green STS LED is solid ON and the green LK/ACT LED is blinking: there is an activity

Use the 5 LEDs on the face of the LTM E expansion module to monitor its state:

LTM E LED	Color	Describes	Indicates
Power	Green or red	Module power or internal trip condition	• Solid green = power on with no internal trips • Solid red = power on with internal trips • Off = power off
Digital Inputs I.7, I.8, I.9 and I.10	Yellow	State of input	• On = input activated • Off = input not activated

Use with TeSys T LTM CU Control Operator Unit

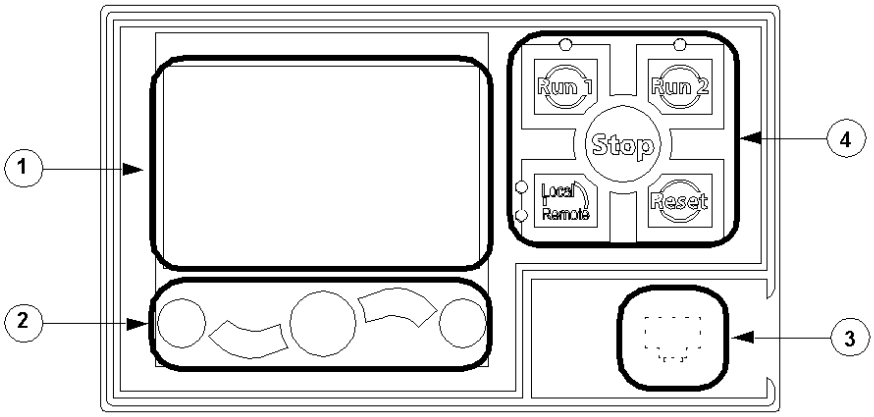
Available Functions

Once connected to the LTM R, the LTM CU can be used to:

- configure parameters for the LTM R controller,
- display information about the LTM R controller configuration and operation,
- monitor trips and alarms generated by the controller,
- control the motor locally using the local control interface.

LTM CU Front Face

The LTM CU front face is shown below:



1 LCD display

2 Contextual navigation keys

3 Front face RJ45 port for PC connection (covered)

4 Local control interface, including 5 control keys and 4 LEDs

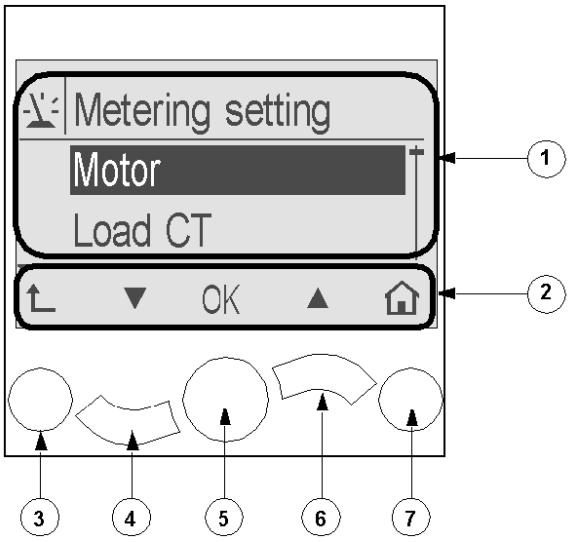
Navigation Keys

The LTM CU navigation keys are contextual, that is, their function depends on the associated icons shown on the LCD display. These icons change for different displays, so the navigation key functions also change.

The navigation keys can be used to:

- navigate menus and sub-menus,
- scroll within a value list,
- select a setting in a value list,
- exit a value list without making a selection,
- return to the main (first-level) menu,
- switch between manual and automatic presentation mode in Quick View display.

The diagram below shows an example of the different functions of each of the navigation keys associated with an icon on the LCD display:



1 Information area of the LCD display

2 Contextual navigation icons area of the LCD display

3 Move up to the next higher-level menu

4 Move down to the next item in the menu

5 Select an item

6 Move up to the previous item in the menu

7 Return to the main menu

LCD Displays

The LTM CU presents 3 different LCD displays:

LCD display	Functionality
Menu	• Displaying and editing the configuration settings required for configuring the LTM R (metering, protection, control and services settings) • Displaying diagnostic and history data
Quick View	• Displaying real-time metering of pre-selected parameters by automatic or manual scrolling
Trips and alarms	• Displaying the most recent detected trip or alarm

Contextual Navigation Icons

The following table describes the icons used with the contextual navigation buttons on the LTM CU:

Icon	Description	Icon	Description
	Enables access to the main menu from a sub-menu or from Quick View		Enables access to Quick View from the main menu or a sub-menu
	Scroll down		Enables access to manual scroll mode (when Quick View is in automatic scroll mode)
	Scroll up		Enables access to automatic scroll mode (when Quick View is in manual scroll mode)
	Validates a setting or value and enables access to a sub-menu when a menu is selected		Used to increment a setting in menu mode
	Move up to the next higher-level menu		Used to decrement a setting in menu mode
	When a menu item is password-protected, this icon enables access to the Enter Password screen		

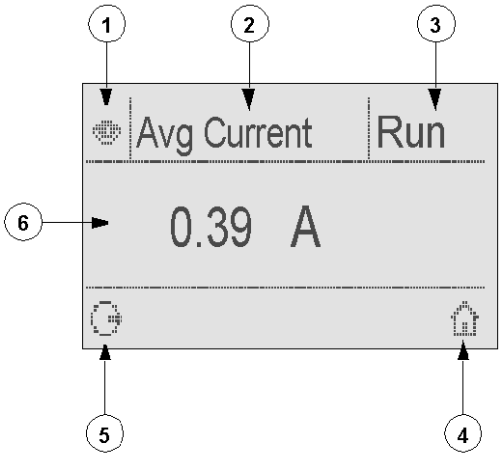
Information Icons

The following table describes the icons provided as information in the information area of the LCD display. They indicate, among others, the selected menu or parameter:

Icon	Description	Icon	Description
	Main menu		Indicates that the present display is Quick View
	Metering setting menu		Indicates that an alarm has occurred
	Protection setting menu		Indicates that a detected error has occurred
	Control setting menu		Information
	Services menu		Check box selected
	Language selection menu		Check box unselected
	Radio button selected		Item has been selected (for inclusion in Quick View display)
	Radio button unselected		LTM R in Configuration mode

Example of an HMI Display

Here is an example of HMI LCD displaying an average current of 0.39 A in local control, run mode:



1 Quick View display icon

2 Name of the setting currently displayed

3 Motor state

4 Short key to main menu

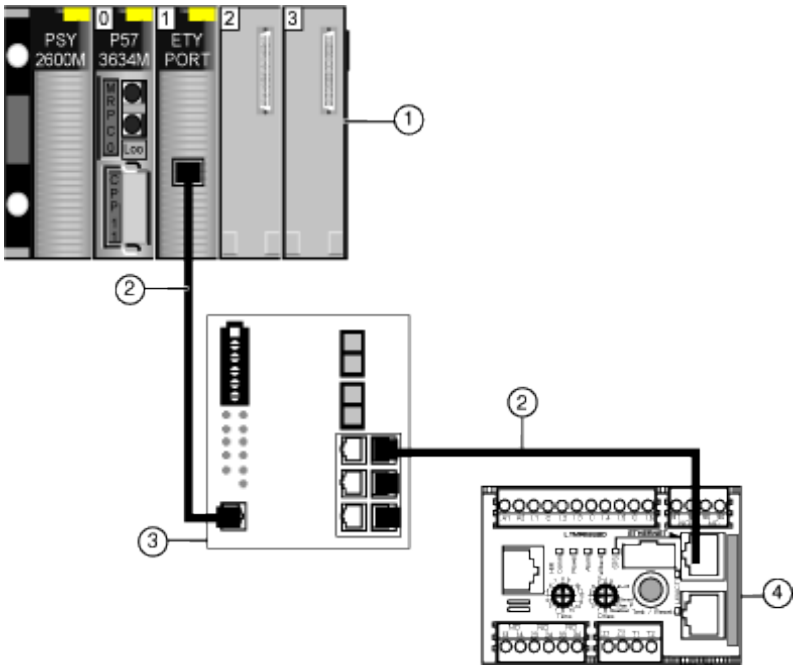
5 Manual scroll mode icon; pressing the associated contextual navigation key switches to manual scroll mode

6 Value of the setting currently displayed

Network Communication on Modbus/TCP

Wire the Communication Port

This procedure is shown on the Instruction sheets provided with the LTM R and the LTM E, and described in Installation chapter of the User Manual:



1 Premium PLC with an Ethernet coupler

2 Straight or crossed shielded twisted pair connection cable (490NT•000•••)

3 ConneXium switch

4 TeSys T LTM R Modbus/TCP controller

Parameters Used in the Application Example

For the application example, the following parameters are used:

LTM R Modbus/TCP Controller	
IP address	Served through DHCP
Device name	TeSysT001
Behavior on communication loss	Trip and motor stop after 5 seconds
Configuration mode	Via network
Fast device replacement	• Enabled • With auto backup enabled every 2 minutes
PLC Ethernet Coupler	
Primary IP address	192.168.2.3
Sub-network mask	255.255.255.0
Gateway address	192.168.2.200

PLC Ethernet Coupler	
Address server	Use of DHCP to associate: • Device name TeSysT001 • IP address 192.168.2.100
I/O scanning	• Inputs: Registers 2502 to 2505 (= 455 to 458) • Outputs: Register 2507 (= 704)

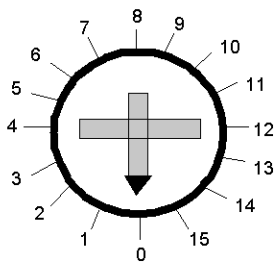
Set Up the LTM R Communication

Set up the LTM R communication with rotary switches and PowerSuite step by step:

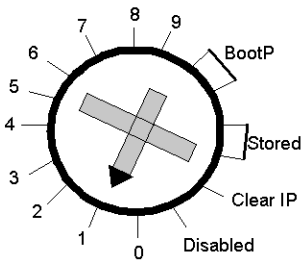
Step	Description	Tool
1	Configure Device Name	With rotary switches
2	Configure communication loss parameters	With PowerSuite
3	Select configuration mode and configure FDR function	
4	Download configuration from PC to LTM R controller	
5	Power cycle the LTM R controller to take into account the new communication parameters	

Device Name Configuration

To configure TeSysT001 device name, set the rotary switches on the LTM R front face as follows:



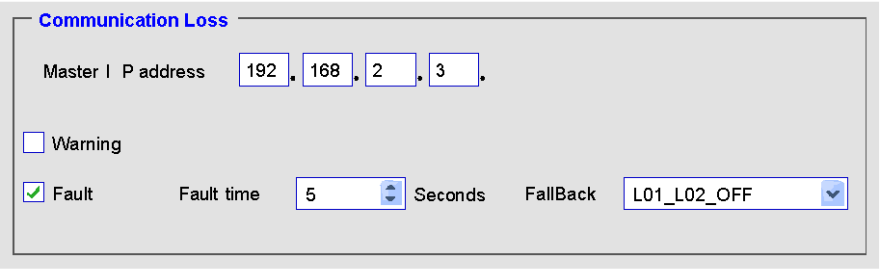
Tens



Ones

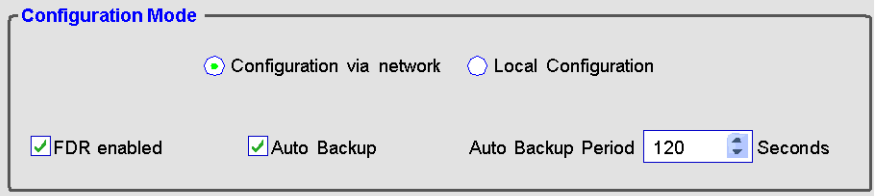
Communication Loss Configuration

In PowerSuite, configure the communication loss as follows:



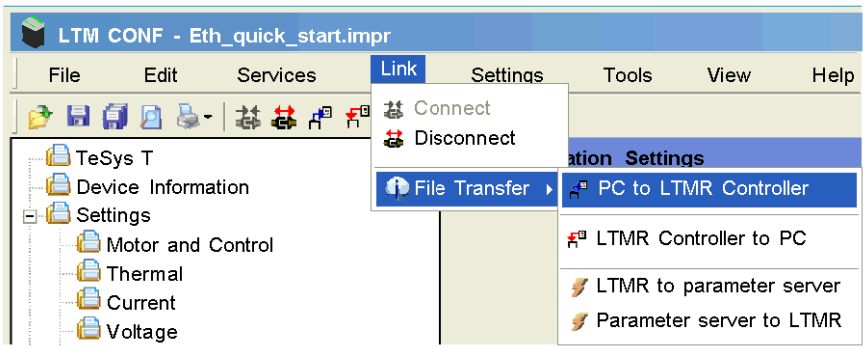
Select Configuration Mode and Configure FDR Function

Using PowerSuite, select the configuration mode and Fast Device Replacement (FDR) functions as follows:



Download Configuration from PC to LTM R

Transfer the configuration file from PC to LTM R controller as follows:



Power cycle the LTM R controller to take into account the new parameters.

Set up the PLC Communication

Set up the communication between a PLC and the LTM R controller:

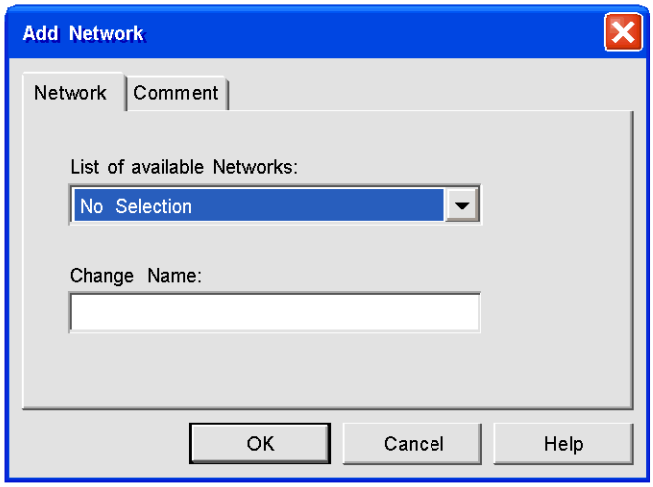
Step	Description
1	Declare the Ethernet network in the PLC.
2	Configure the IP address of the Ethernet coupler.
3	Configure the address server function of the Ethernet coupler.
4	Configure the I/O scanning function.
5	Validate the overall configuration.
6	Associate the Ethernet configuration with the Ethernet module.
7	Compile, save and transfer the project to the PLC.
8	Test the communication via the debug screen.
9	Via an animation table, check that the motor management controller is properly working.
10	Using PowerSuite, transfer the parameter file from LTM R controller to PLC parameter file server.

The example below describes how to configure the communication between a Premium PLC running Unity software and an LTM R controller.

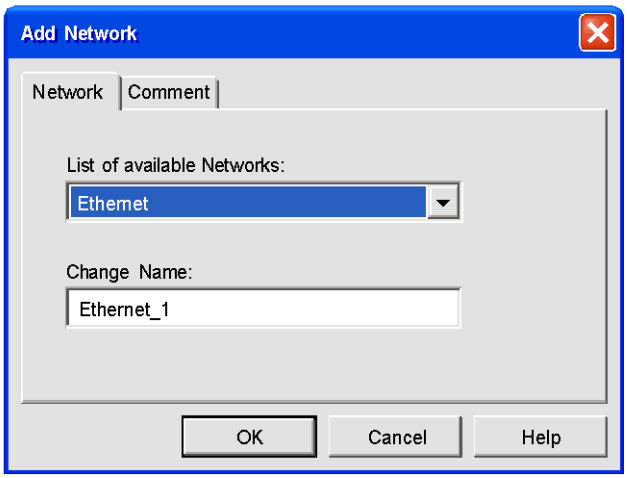
Step 1

Declare the Ethernet network in the PLC.

- In the Project Browser window, right-click **Communication > Network** sub-menu and select New Network. The following window appears:



- Select Ethernet among the list of available networks.
  Ethernet_1 is the default network name:



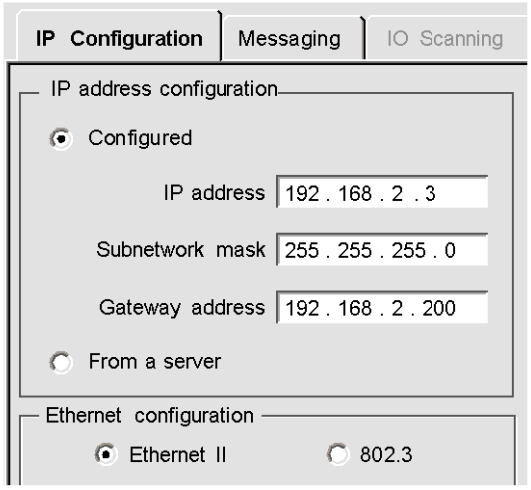
- Click OK to validate your choice.
  Ethernet_1 network appears in **Communication > Network** sub-menu.

Step 2

Configure the Ethernet_1 coupler IP address.

- In the Project Browser window, double-click Ethernet_1 network.
  The coupler configuration window appears.

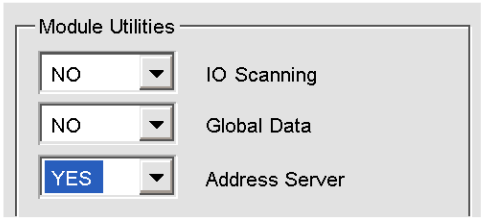
- Select IP Configuration tab and enter the coupler IP address as shown below:



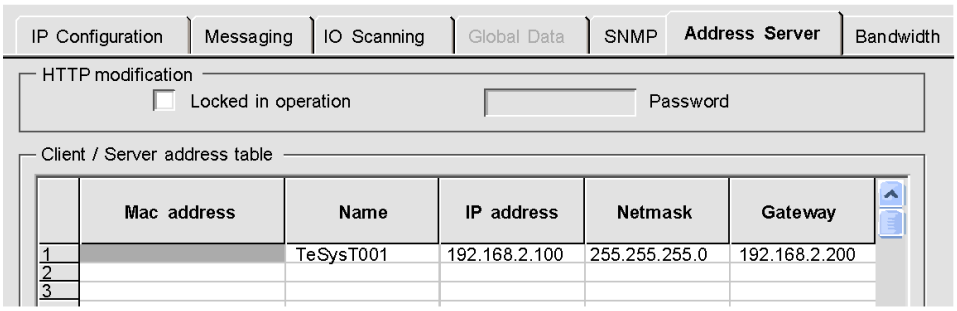
Step 3

Configure the address server function of the Ethernet coupler.

- Validate the address server function in the Module Utilities area on top of the configuration window:



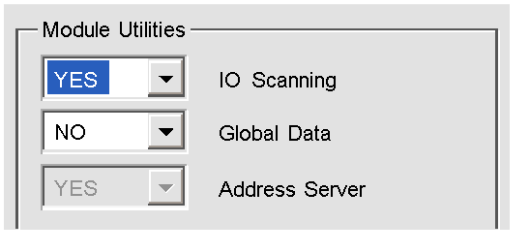
- Select Address Server tab and configure the address server table as shown below:



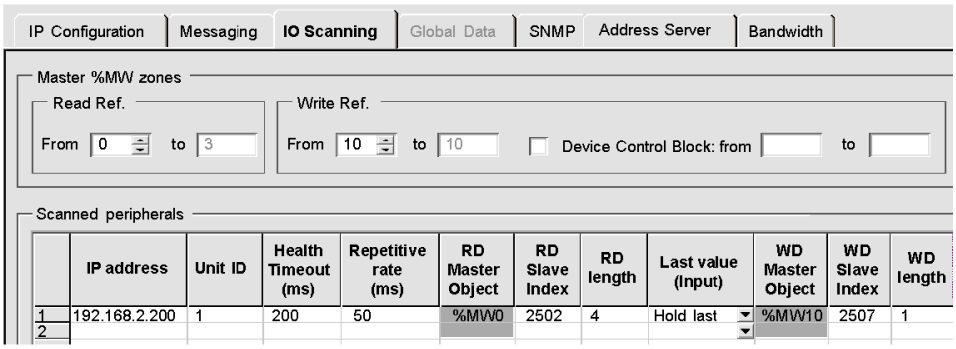
Step 4

Configure the IO Scanning function.

- Validate the IO Scanning function in the Module Utilities area on top of the configuration window:



- Select IO Scanning tab and configure the IO Scanning function as shown below:



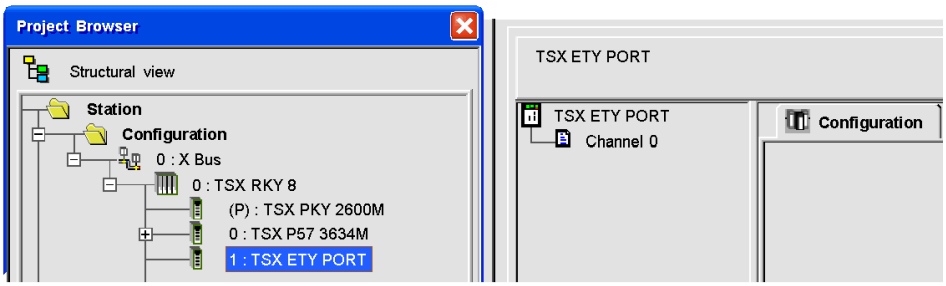
Step 5

- Validate the global Ethernet configuration through the Edit menu.
- When the Modification Authorization box pops up, click Yes to confirm the edit.

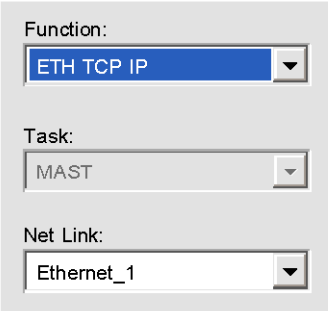
Step 6

Associate the Ethernet configuration with the Ethernet module.

- In the Project Browser window, Configuration menu, double-click the reference corresponding to the Ethernet port. The Configuration window appears:



- Associate Ethernet_1 configuration to the coupler via the Net Link scrolling list:



Step 7

- Compile, save and transfer the project to the PLC.
- Connect the PC to the PLC.

Step 8

Check that the communication is working via the setting screen:

- In the Project Browser window, Configuration menu, double-click the reference corresponding to the Ethernet port.
- Select the Debug tab. The Debug window opens, including the following areas:

Check that a green square appears in the IO Scanning area and that it corresponds to equipment number 1.

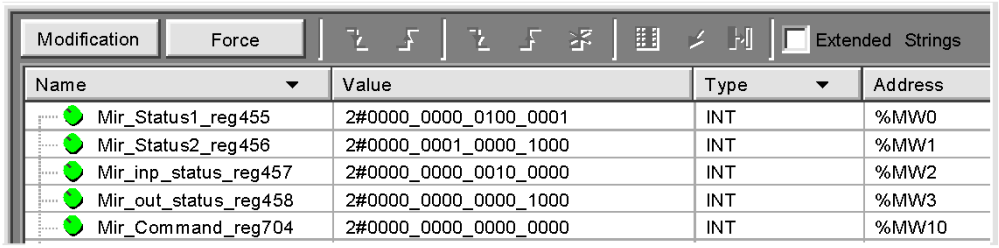
Step 9

Via an animation table, check that the motor management controller is properly working.

- In the Project Browser window, right-click Animation Tables sub-menu and select New Animation Table item.
- In the Properties window which opens, select a name and click OK.

- Select one by one the words corresponding to the IO Scanning table:
  - %MW0 to %MW3 for the input variables (LTM R status),
  - %MW10 for the output variable (LTM R control).

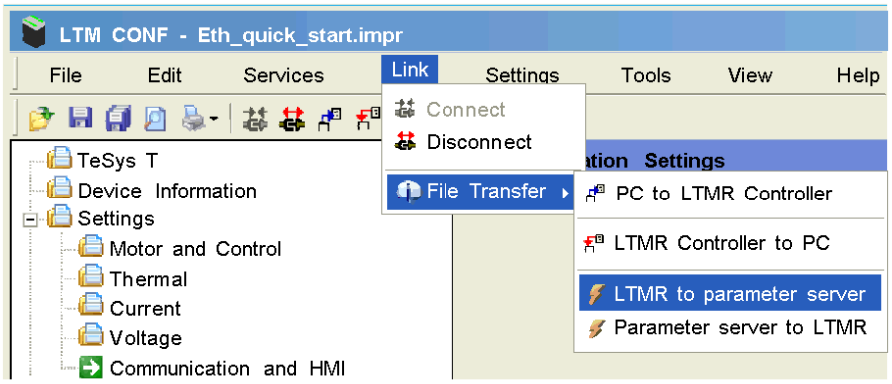
The animation table enables you to check LTM R global status and to control the motor:



Step 10

Using PowerSuite transfer configuration from LTM R controller to PLC parameter file server:

- Connect the PC to the LTM R controller.
- In the **Link > File Transfer** menu, select LTMR to parameter server to transfer the configuration file from LTM R controller to PLC parameter file server, as shown below:

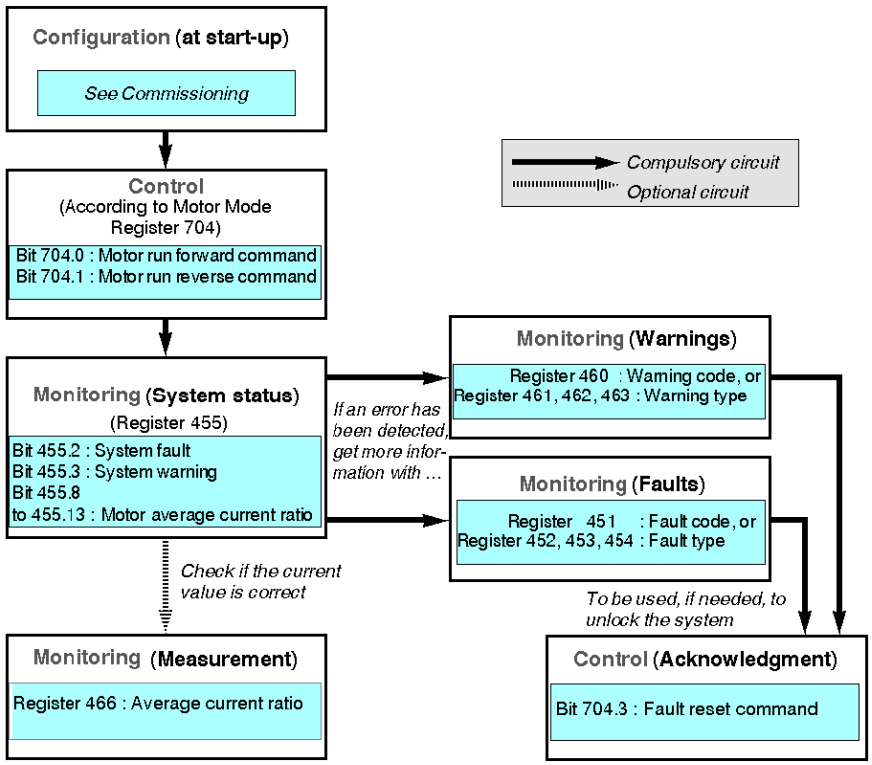


In case of a Fast Device Replacement, the file will automatically be downloaded from PLC parameter file server to the new LTM R controller.

See the User Manual for more details.

Registers for Simplified Operation

Basic setup information using configuration, control and monitoring registers applies to all applications:



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