

PM590-ETH-1SAP150000R0271

AC500 PM590-ETH Programmable Logic Controller

INSTALLATION, INTERFACE AND VALIDATION WORKBOOK

ABB PM590-ETH-1SAP150000R0271 is an AC500 programmable logic controller with 2048 kB program memory and 24 V DC supply. It executes control logic and exchanges automation data through onboard Ethernet and two serial interfaces.

STEP	GATE	ENGINEERING PURPOSE
01	IDENTIFY	Confirm article, host and hardware
02	ISOLATE	Secure power and stored energy
03	CONNECT	Restore documented interfaces
04	VALIDATE	Prove diagnostics and function

WORKBOOK PURPOSE

Field-ready identity, isolation, connection, commissioning and closeout records for this exact ABB article.

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PM590-ETH-1SAP15000
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Installation Readiness Gate

Complete the identity, host-system and isolation checks before disturbing the installed hardware.

- 1 Confirm PM590-ETH and order code 1SAP150000R0271 on the physical label.
- 2 Place the controlled process and connected outputs in the approved maintenance state.
- 3 Isolate the 24 V DC supply and use ESD controls while handling the controller.
- 4 Back up the AC500 project, Ethernet settings, serial parameters and I/O configuration.

Pre-Work Evidence

EVIDENCE ITEM	RECORDED VALUE
Complete article marking	PM590-ETH-1SAP150000R0271
Host / carrier	ABB AC500 programmable automation controller system
Primary system role	Executes the AC500 application and scheduled control tasks
Acceptance boundary	Prove logic sequencing, communications and every affected I/O path before production release.
Source record	PLC Automation Main Catalog and AC500 PM590-ETH Device Record

WORK AUTHORIZATION RECORD

Work order: _____ Drawing / revision: _____
 Checked by: _____ Date: _____

Isolation and Access Register

CONTROL POINT	ENGINEER RECORD
Incoming supply	Isolated / proved
Stored energy	Discharged / proved
Field connections	Identified / protected
ESD control	Established / recorded

Pre-Work Documentation

DOCUMENT	ENGINEER RECORD
Connection photograph	Reference / file
Configuration backup	Reference / revision
Diagnostic baseline	Reference / result

Connection and Installation Sequence

INSTALLATION PRINCIPLE

Mount PM590-ETH-1SAP150000R0271 on the documented AC500 terminal base and record the Ethernet, serial, FBP and I/O configuration before removal. Restore the approved Control Builder project, check supply and communications, then complete controlled logic and I/O tests.

- 1 Label the terminal base, FBP, Ethernet, serial and field connections before removal.
- 2 Install the controller on the documented base and restore the approved project and addresses.
- 3 Review power, run, error, network and I/O diagnostics after controlled startup.
- 4 Prove logic sequencing, communications and every affected I/O path before production release.

Connection Record

CONNECTION GROUP	AS-FOUND / AS-LEFT RECORD	STATUS
Power / field connection	Reference / terminal	Checked
Signal / interface	Reference / connector	Checked
Ground / shield	Reference / point	Checked
Accessory / carrier	Reference / part	Checked

MODEL-SPECIFIC RELEASE LIMIT

Confirm PM590-ETH-1SAP150000R0271, AC500 base and I/O arrangement, hardware and firmware revision, 24 V DC supply, Ethernet and serial settings, FBP devices, grounding, project version and controlled functional-test results before commissioning.

Interface Acceptance Criteria

ACCEPTANCE ITEM	REQUIRED EVIDENCE
Identity	PM590-ETH-1SAP150000R0271
Host match	ABB AC500 programmable automation controller system
Connection proof	Install the controller on the documented base and restore the approved project and addresses.
Configuration proof	Review power, run, error, network and I/O diagnostics after controlled startup.

Commissioning and Acceptance Record

Record each controlled verification step before the equipment returns to automatic operation.

NO.	ACCEPTANCE CHECK	RESULT	RECORD
1	Article and host identity	PASS / FAIL	Initial / date
2	Mechanical installation	PASS / FAIL	Initial / date
3	Power and field wiring	PASS / FAIL	Initial / date
4	Grounding and shielding	PASS / FAIL	Initial / date
5	Configuration restoration	PASS / FAIL	Initial / date
6	Signal or power-path response	PASS / FAIL	Initial / date
7	Diagnostics and alarms	PASS / FAIL	Initial / date
8	Final functional release	PASS / FAIL	Initial / date

Engineering Notes

RECORD AREA	ENGINEER ENTRY
As-found condition	
Corrective action	
As-left configuration	
Outstanding restriction	
Release authorization	

CONTROLLED COMMISSIONING

Prove logic sequencing, communications and every affected I/O path before production release.

Diagnostics and Release Log

EVENT	ENGINEERING RECORD
Initial energization	Result / observation
Interface or signal response	Result / observation
Alarm and diagnostic review	Result / observation
Functional release	Name / date

ACCEPTANCE AND RELEASE EVIDENCE

High-speed AC500 machine control

Runs deterministic logic and coordinates distributed device states in an engineered machine station.

Ethernet-connected process skids

Integrates the controller with supervisory and peer systems through the configured Ethernet interface.

Serial field-device coordination

Uses the documented RS-232/485 channels for approved serial devices and protocols.

AC500 controller replacement

Restores an existing PM590-ETH project while retaining terminal-base, network and I/O records.

Maintenance Verification and Closeout

High-speed AC500 machine control

Runs deterministic logic and coordinates distributed device states in an engineered machine station.

Ethernet-connected process skids

Integrates the controller with supervisory and peer systems through the configured Ethernet interface.

Serial field-device coordination

Uses the documented RS-232/485 channels for approved serial devices and protocols.

AC500 controller replacement

Restores an existing PM590-ETH project while retaining terminal-base, network and I/O records.

Related Engineering Pages

MODEL	ENGINEERING ROLE	APTER POWER PAGE
PM511V08	Advant controller	View PM511V08 page
SR511	DC/DC regulator	View SR511 page
FPBA-01-M	PROFIBUS adapter	View FPBA-01-M page
FEN-21	encoder interface	View FEN-21 page
FEIP-21	EtherNet/IP adapter	View FEIP-21 page
SPDSI22	digital input module	View SPDSI22 page
SPASI23	analog output module	View SPASI23 page
PM566-TP-ETH	AC500-eCo PLC	View PM566-TP-ETH page

MANUFACTURER SOURCE RECORD

PLC Automation Main Catalog and AC500 PM590-ETH Device Record
ABB 3ADR020077C0204 Rev. E and Control Builder Plus device record

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