SmartAPEX

DIN-RAIL AND NETWORK AUTOMATION

MINI IP Gateway

PoE-powered Ethernet gateway for SmartAPEX CAN devices, Modbus TCP-to-RTU and supported RS485 curtain motors.

APX-MIP-P | PoE 48V | CAN / RS485 | Ethernet

APX-MIP-P

PoE MINI GATEWAY

3	48 V	32	CAN / RS485
firmware roles	standard PoE input	Modbus devices*	bus interfaces

STANDARD V40

Normal SmartAPEX CAN, built-in Modbus/HVAC, templates and full gateway services.

MODBUS BRIDGE

Transparent Modbus TCP-to-RTU for Fibaro/Yubii or another Modbus TCP client.

MiCURTAIN BRIDGE

Control supported RS485 curtain motors through the supplied QuickApp.

ROLE-SAFE UPDATES

One physical unit runs one role at a time. Installing a new role replaces the current role.

* Advanced capacity depends on RS485 wiring and polling interval.

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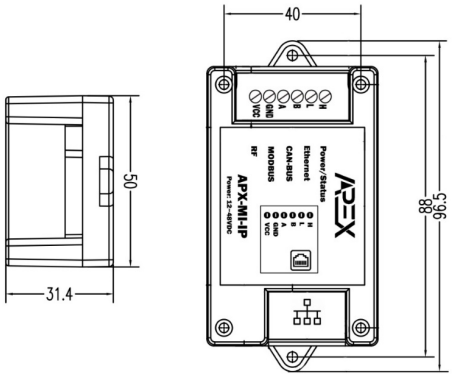
Product overview

A compact wall-mounted gateway that connects Ethernet to SmartAPEX CAN, RS485/Modbus and supported serial devices.

APX-MIP-P | Real product view



Mounting and dimensional reference

HARDWARE SPECIFICATIONS

Parameter	Value	Parameter	Value
Model number	APX-MIP-P	Power input	48 V PoE / USB 5 VDC
Power marking	5 W	Connections	CAN-BUS, RS485 / MODBUS
Communication	Ethernet TCP/IP	Max. Modbus devices	32*
Temperature	-10 to 60 °C	Humidity	5% to 95% non-condensing
Weight	0.15 kg	Mounting	Wall / enclosure mounting

LED STATUS

Indicator	Status
LK	ON: Connected to the host.
CANBUS	CAN-BUS data communication.
MODBUS	Modbus data communication.
PW	Fast blinking: not connected to the network.
	Slow blinking: Ethernet connected; attempting to obtain an IP address.
	Very slow blinking: module connected with a valid IP address.

FIRMWARE ROLE WARNING

The hardware is shared by three firmware roles, but only one role can run at a time. Always verify the role and package before updating.

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Select the firmware role

Choose the package from the installation requirement. Installing another role replaces the current firmware role.

QUICK FIRMWARE SELECTION

Installation requirement	Firmware role	Current package
Normal SmartAPEX CAN, built-in Modbus/HVAC and full gateway services	Standard Mini IP V40 | vX.XXX	MINI_IP_vX.XXX.bin
External Modbus TCP client to RS485 meters or slaves	Mini IP Modbus Bridge | vX.XXX	MINI_IP_MODBUS_BRIDGE_vX.XXX.bin
Supported RS485 curtain motors controlled by Fibaro/Yubii	Mini IP MiCURTAIN Bridge | vX.XXX	MINI_IP_CURTAIN_vX.XXX.bin

CRITICAL INSTALLER WARNING

- Do not install Modbus Bridge when the site needs normal SmartAPEX CAN, HVAC, templates or SmartAPEX TCP services.
- Do not install Standard Mini IP when a Fibaro QuickApp expects a transparent Modbus TCP gateway on port 1502.
- Do not install MiCURTAIN firmware for a Modbus device. MiCURTAIN is a proprietary curtain-motor protocol.
- Use only the current approved MiCURTAIN field release; do not deploy test or unapproved builds.
- Upload the encrypted package from the update-generator updates folder, not the raw STM32CubeIDE Release .bin.

ROLE DECISION

STANDARD V40

Use for the normal SmartAPEX gateway, CAN discovery, built-in Modbus/HVAC and device templates.

MODBUS BRIDGE

Use when the external client owns the Modbus register logic and needs transparent TCP-to-RTU access.

MiCURTAIN

Use only with supported curtain motors and the supplied SmartAPEX MiCURTAIN QuickApp.

ONE UNIT / ONE ACTIVE ROLE

Firmware roles are mutually exclusive. Record the existing role and settings before conversion because role-specific configuration is not guaranteed to migrate.

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Standard SmartAPEX Mini IP V40

The normal Mini IP gateway role for SmartAPEX CAN devices, built-in Modbus/HVAC configuration and standard TCP integration.

FIRMWARE FORMAT

Project: SmartAPEX-MiniIP-V40 Firmware: vX.XXX
Package: MINI_IP_vX.XXX.bin

USE THIS ROLE WHEN

The installation needs normal SmartAPEX CAN discovery, configuration, bindings, built-in Modbus points, HVAC mapping or full gateway services.

MAIN FUNCTIONS

Function area	Standard V40 capability
Ethernet gateway	Normal SmartAPEX TCP/IP services and web configuration.
CAN devices	Discover, configure, refresh and bind compatible SmartAPEX CAN devices.
Modbus RTU	Built-in bus, device and point configuration; register logic stays in Mini IP.
HVAC / templates	Built-in HVAC mapping, device templates and point configuration.
Maintenance	Network, diagnostics, reset and firmware update pages.

DO NOT USE THIS ROLE WHEN

- A third-party client expects a transparent Modbus TCP-to-RTU gateway.
- A Fibaro Eastron QuickApp must send its own Modbus TCP requests directly to an RS485 meter.
- The installation uses the proprietary MiCURTAIN motor protocol.

IMPORTANT DISTINCTION

The Standard V40 Modbus section manages its own devices and points. It is not the same product role as the transparent Modbus Bridge and does not expose the same port-1502 workflow.

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SmartAPEX Mini IP Modbus Bridge

A transparent Modbus TCP-to-RTU bridge for Fibaro/Yubii or another standard Modbus TCP client.

Modbus TCP client → **APX-MIP-P / port 1502** → **RS485 Modbus RTU slaves**

BRIDGE OPERATION

- Receives a Modbus TCP request and preserves its transaction ID.
- Converts Unit ID and PDU to Modbus RTU on RS485.
- Validates the RTU response and returns a Modbus TCP response.
- Serializes RS485 requests so only one RTU transaction is active at a time.
- Does not decode Eastron values; register interpretation remains in the external client or QuickApp.

FACTORY DEFAULTS

Setting	Default	Installer note
Network	DHCP enabled	Discover the current IP before configuring the client.
Modbus TCP	1502	Use Gateway_Port 1502 unless intentionally changed.
RS485	9600, 8N1	Match every RTU slave and wiring polarity.
RTU timeout	3000 ms	Avoid aggressive polling on a populated bus.
TCP clients	1 simultaneous	Serialize the client connection.

FIBARO / YUBII SETTINGS

Parameter	Example	Meaning
Gateway_IP	Mini IP bridge address	Target gateway IP.
Gateway_Port	1502	Transparent Modbus TCP port.
Modbus_Address	Meter slave ID	RS485 Unit ID selected by the client.
Read_Every	30 s or slower	Recommended polling interval.

CAPACITY PLANNING

Recommended: 1 to 8 meters. Supported: up to 16 with suitable polling intervals. Advanced installations may reach 32 only with correct RS485 wiring, termination, biasing and slower polling.

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SmartAPEX Mini IP MiCURTAIN Bridge

A dedicated RS485 role for supported proprietary curtain motors controlled through the SmartAPEX QuickApp.

FIRMWARE FORMAT

Project: MiCURTAIN Firmware: vX.XXX Package: MINI_IP_CURTAIN_vX.XXX.bin

USE THIS ROLE WHEN

The connected RS485 devices are supported curtain motors and Fibaro/Yubii must control Up, Down, Stop and target position.

FACTORY DEFAULTS AND LIMITS

Setting	Default / range	Installer note
Network	DHCP enabled	Discover the current IP before setup.
RS485	2400, 8N1	Match the supported motor network.
Motor ID	0..99	ID 0 is the protocol group address.
Channel	1..16	Confirm the physical motor channel.

MAIN HTTP API

CONTROL COMMANDS

/curtain.cgi?id=1&ch=1&cmd=up
/curtain.cgi?id=1&ch=1&cmd=down
/curtain.cgi?id=1&ch=1&cmd=stop
/curtain.cgi?id=1&ch=1&cmd=pos&pos=50

READ POSITION

/curtain-status.cgi?id=1&ch=1

Motor setup can change physical parameters. Confirm ID and channel before sending commands.

FIBARO QUICKAPP SETUP

Setting	Example	Use
Gateway_IP	Mini IP address	Device network target.
Motor_ID	Physical motor ID	Selects the motor.
Channel	1..16	Selects the motor channel.
Reverse	On only if needed	Reverses open / close direction.

DO NOT USE THIS ROLE WHEN

- The RS485 device is Modbus RTU.
- The site needs normal SmartAPEX CAN or HVAC functions.
- A generic Modbus TCP client must connect on port 1502.

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Network discovery and role switching

Use the same protected web update process for all roles, then verify the installed role after reboot.

NETWORK DISCOVERY

- After factory reset, current firmware packages use DHCP by default.
- Find the assigned IP with SmartAPEX Finder, the router/DHCP client list or supported discovery information.
- Configure a static address on the Network page only after recording the current address.
- If the saved static address is outside the installer subnet, reconnect correctly or follow the documented reset procedure.

SWITCHING FIRMWARE ROLES

Record

Save the current IP and any settings required after conversion.

Update

Open /update, select the encrypted package and start the update.

Reboot

Keep power and Ethernet connected until the unit restarts.

Verify

Open /version.cgi and confirm the new role and firmware version.

Reconfigure

Enter role-specific settings and update controller parameters.

CONFIGURATION DOES NOT GUARANTEE MIGRATION

Standard CAN or Modbus templates are not a Modbus Bridge meter list, and MiCURTAIN motor settings are not Standard V40 records. Verify or re-enter role-specific settings after conversion.

APPROVED CURRENT PACKAGES

Role	Version	Encrypted package
Standard Mini IP V40	vX.XXX	MINI_IP_vX.XXX.bin
Modbus Bridge	vX.XXX	MINI_IP_MODBUS_BRIDGE_vX.XXX.bin
MiCURTAIN Bridge	vX.XXX	MINI_IP_CURTAIN_vX.XXX.bin

UPDATE SOURCE

Use the encrypted packages from the update-generator updates folder. Do not upload the raw STM32CubeIDE Release .bin through the web updater.

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Diagnostics and handover

Identify wrong-firmware symptoms quickly, recover through the normal updater and leave the final role documented.

WRONG-FIRMWARE SYMPTOMS

Symptom	Likely cause
Normal CAN/HVAC pages missing	Modbus Bridge or MiCURTAIN firmware is installed.
Modbus TCP port 1502 unavailable	Standard V40 or MiCURTAIN is installed, or the bridge is disabled/misconfigured.
Curtain commands return not found	MiCURTAIN firmware is missing or the query parameters are invalid.
Eastron QuickApp stays offline	Wrong role, wrong port, wrong Unit ID, or RS485 settings/wiring mismatch.
Curtain QuickApp returns HTTP errors	Wrong role/version, wrong IP, motor ID/channel mismatch or invalid response.

RECOVERY

- If the web updater is reachable, install the correct encrypted package through the normal update page.
- Keep power and Ethernet connected until the unit reboots and the version page is available.
- Use a hardware programmer only when the normal update path and bootloader recovery are unavailable.

INSTALLER HANDOVER CHECKLIST

- ☐ Required role confirmed with customer
- ☐ Package role and version verified
- ☐ /version.cgi checked after reboot
- ☐ Final IP and DHCP/static mode recorded
- ☐ RS485 baud, parity, stop bits and polarity recorded
- ☐ Only one RS485 master controls the bus
- ☐ Modbus Unit IDs are unique
- ☐ MiCURTAIN motor IDs and channels recorded
- ☐ One real device tested before full rollout
- ☐ Power-cycle recovery tested

SUPPORT PACKAGE

Include installed role and version, IP mode, RS485 settings, controller configuration and the exact symptom or HTTP response.