

ETH-A2

Industrial IoT Gateway · Edge Logic Controller Series

High-performance real-time edge controller — field I/O, edge logic, web SCADA, and cloud connectivity in one device. 100% web-based; no utility software required.

20 ms

FIXED RULE SCAN

160

IF-THEN RULES

512

I/O PTS · 32 MODULES

480 MHz

CORTEX-M7 RT CORE

100% Web

NO UTILITY SOFTWARE



Edge Logic RULE ENGINE

160 IF-THEN rules

Zero-programming rule engine. Threshold / edge / hysteresis / dwell / cooldown / schedule conditions — easily build interlocks and alarms.

Live logic debug workspace

Live rung view shows each rule's evaluated power-flow state. Dry-run simulation, hold & single-step on live hardware, condition injection, force override, watch table, cross-reference.

Batch deployment & versioning

HRL text rules for import/export; A/B rule-set backup with one-click rollback; encrypted .htf templates clone full configs for volume rollout.

Connectivity PROTOCOLS

Modbus TCP Slave

Modbus RTU Master / Slave

MQTT 3.1.1 · 512 ext. tags

TLS / mTLS (AWS · Azure)

HTTPS + custom certs

NTP / GPS time sync

TCP transparent mode

Up to 3 serial ports (model-dependent)

2 × RS-485 (HOYAN I/O bus / Modbus RTU master/slave) + 1 × RS-232 (transparent / aux console); live mode switch; RTU slave adds a Register Map viewer; legacy serial equipment goes online unchanged.

FluxLiveView Web HMI SCADA

Built-in drag-and-drop SCADA designer

Gauges, trends, buttons, and indicators in free-form layouts stored on-device. Pinch-zoom and on-screen keyboard turn any tablet into a field kiosk panel.

4-language UI · no app

English, Traditional/Simplified Chinese, and Japanese. Opens in any browser on phone, tablet, or PC; responsive mobile layouts.

Product Positioning WHERE IT FITS

Field real-time layer — control decisions made on-site

Positioned between plain remote I/O and host-dependent supervisory systems: high-performance edge logic runs without a host PC or network — control continues even when the network is down.

Data and events stream up to SCADA and cloud via Modbus TCP / MQTT the moment connectivity returns — one device replaces remote I/O, a small controller, and a serial device server.

Operations & Reliability O&M

Single-page system diagnostics

CPU / memory / queue high-water marks, comm health, event history, and live console on one page. Built-in signal simulator enables full-system FAT before I/O modules arrive.

Encrypted OTA firmware updates

AES-256 + HMAC-signed .efw packages, drag-and-drop web updates, automatic rollback on verification failure.

Access security

HTTPS management, session login, tiered write permissions; independent Modbus DO/AO write-enable switches.

HOYAN I/O Family MODULES

DI16 digital in

DO16 digital out

DO6TR relay

AI6 analog in

AO6 analog out

RT6 temperature

Auto-scan over RS-485. Unified tag namespace (I/O/@ext/\$VAR/\$SYS) rules, dashboard, MQTT, Modbus TCP. Name once, use everywhere.

SPECIFICATIONS

Processor	Arm® Cortex®-M7 industrial RT MCU, 480 MHz
Rule scan cycle	Fixed 20 ms (50 Hz phase-locked; cfg. 5–100 ms)
I/O response	Typ. 30–50 ms (≤4 modules @115200 bps)
Storage	Non-volatile storage; battery-free retention
Ethernet	10/100M; Modbus TCP / HTTP(S) / MQTT / NTP
Serial	≤2 × RS-485 · 1 × RS-232 · USB-C (USB-C console)
I/O capacity	32 modules / 512 points (via HOYAN BUS)
Clock	Battery-backed RTC; automatic NTP / GPS NMEA sync
Mounting	DIN 35 mm rail; wide-range DC power input
UI languages	English / 繁體中文 / 简体中文 / 日本語

Typical Applications USE CASES

Legacy machine retrofit

Facility & environment monitoring

Pump / fan / compressor sequencing

Energy & power monitoring

Unmanned remote sites

Line andon & alarm integration

HOYAN Technologies Co., Ltd. 泓洋電子科技有限公司

No. 5, Ln. 33, Mingfeng 11th St., Qianzhen Dist., Kaohsiung City 80665, Taiwan
T +886-7-793-5098 | F +886-7-793-5228 | sc@hoyan.com.tw | www.hoyan.com.tw

Doc No. ETH-A2-BR-EN | Rev. 2026-07 | Firmware V2.7x

Specifications subject to change without notice.