XN-1 CONTROLLER

ARM-BASED NEMA TS 2, TYPE 1 ATC TRAFFIC SIGNAL CONTROLLER

◁ *XN-1 Controller with Velocity™ V5 ARM processor*

OVERVIEW

The XN Controller is a modern workhorse for advanced traffic signal operations that sets the scene for the connected world.

Now available with a modern Velocity™ V5 ARM processor for massively increased power and performance or a legacy PowerPC processor.

Its open architecture platform organizes and improves traffic signal operations while reducing the amount of equipment in traffic cabinets through multi-application support for things like:

- Managing Ethernet traffic
- Monitoring detection devices
- Integrating with third-party devices

An OLED screen improves visibility in all conditions, during the day and at night.

Utilizing a Linux-based operating system that meets and exceeds current ATC, NEMA, and NTCIP standards, the XN-1 Controller delivers a robust, scalable platform to meet transportation needs today and tomorrow.

BENEFITS

- Fast, reliable intersection control
- Powerful CPU processor with expandable memory
- Schedule updates or run live
- Install firmware and operating system updates without placing the controller in flash
- Exceeds current ATC standards
- Unrestricted use license for MIBs
- Built and sourced in the USA for full BABA compliance

ARM processor available

Built-in web server

Advanced edge/ IoT capabilities

Secure communication

MODERN PLATFORM

OPEN ARCHITECTURE
- Linux operating system
- Linux and API library
- Software development kit (SDK) provided at no charge to qualified ATC software developers
- Unrestricted use license for NTCIP MIBs

USER INTERFACE
- 128 x 256 pixels OLED display (16x40 characters)
- 4x4 and 3x4 tactile keyboards

COMMUNICATION INTERFACES
- 10/100 Mbit Ethernet ports (4)
- USB (3)
- AUX Serial (1)
- SD Card (1)
- External SDLC port (NEMA cabinets)
- C12S SDLC/HDLC (ITS/ATC cabinets)
- RS232 external serial port (1)
- Integrated GPS/GNSS

INDUSTRY STANDARDS
- ATC 5201, current
- ATC API 5401
- NEMA TS 2-2016 v3.07
- NTCIP - 1201, 1202, 1211, and applicable base standards

TECHNICAL SPECIFICATIONS

Form factor:	Shelf or rack mount
Dimensions* (HWD):	*Rack Mount* 7" x 18.8" x 7.8" 17.8 x 47.8 x 19.8 cm
	Shelf Mount 7" x 13.4" x 7.8" 17.8 x 34 x 19.8 cm
Power:	AC 90-135V, 60Hz±3Hz, 1.3A max. 1Ø Phase
Power connector:	Standard NEMA Type 1 'A'
Temperature:	-40°C to +80°C

* Dimensions rounded to nearest 0.1

ON-BOARD WEB SERVER

Secure, modern communications for traffic operators to access controller functions wirelessly or via wired Ethernet connections from any internet-enabled device (smart phone, tablet, laptop).

- 40 phases, 16 rings, 32 overlaps, 16 preempts
- HTTPS communication between device and Q-Free central system
- Advanced functionality comes standard
  - Master/closed loop
  - Peer-to-peer communications
  - Transit signal priority

  See MAXTIME ic product sheet for more details.

PROCESSING & MEMORY

ENGINE BOARD CPU SPECIFICATIONS*	Velocity V[5] ARM	Legacy PowerPC
Processor:	Quad-core 1.6 GHz ARM Cortex A53 CPU with 800 MHz ARM Cortex M7 coprocessor	NXP MPC8248 32-bit, 400 MHz PowerPC Instruction
Neural Processing Unit for AI/ML:	✔	—
DRAM:	4,096MB (4GB)	128MB
Flash memory:	32,768MB (32GB)	64MB
Industry standards:	Meets/Exceeds NEMA and ATC standards	Meets/Exceeds NEMA and ATC standards

* All models fully hardware and software compliant with the latest ITE/NEMA/AASHTO ATC standard

MADE IN USA

Q FREE