Zwiesler Resources

THOMPSON TECHNOLOGIES

Fuzion ATC

Advanced Traffic Controller

Application

Cost efficient signal control with AC drivers & integrated CMU

Overview

Fuzion ATC is an advanced traffic controller that supports two field-replaceable AC signal output driver boards, providing up to 48 outputs. It also features a fully integrated CMU (conflict monitor unit) with 16 assignable detector inputs per board.

The highly integrated design has two Ethernet ports for network communications and a USB for expansion and interfacing.

Capable of operating as a fully solar-powered traffic signal.

Functional Specifications

- Load switch circuits: 24 AC 1A circuits (expandable to 48)
- Detector channels: 16 discrete inputs
- Time source: Supports a GPS receiver or Network NTP
- Packet communications: Two ethernet, supporting LTE/5G cellular
- Interfaces: Two USB
- Display: 3" Capacitive color touch screen
- CPU: 64-bit ARM processor running Linux
- Memory: 2GB RAM, 16GB Flash expandable by SD or USB

Integrated Learning Conflict Monitor

All circuits are driven by a dedicated output processor with built-in flash transfer relays for red flashing fault. Full fault logging with ability to retrieve fault logs on screen, or via a Handheld / Laptop.

Conflict is triggered by:
· Green phase conflict
· Line voltage differs from output request
· Low or high supply voltage
· Thermal overload on load switches or too high of current draw

Conflict is reset on local/remote request.

Capable of learning the conflict matrix by observing the operation of the traffic signal configuration before being deployed.

Environmental Specifications

Cabinets
Full support for NEMA cabinets and monitors (disabling internal CMU)
Single cable connection to eight card traditional detector rack
Battery powered capable with solar or other charging

Power Requirements
Fully fused (8A) AC @ 50/60Hz with 12VDC for controller operation

Operating Temperature Range
-37C to +74C

Dimensions
9" wide, 2.5" high and 5" deep

Fuzion Firmware Features

Control
Total of 24 phases
8 Vehicle phases with 8 Pedestrian paths and 8 Bike paths
8 Overlap phases (vehicle or ped)
8 Dynamic X-phases for use with transit priority
*All phase outputs can be routed to any AC circuit

Service Plans
16 Service Plans
Selectable by System or Time of Day
Independent Phase Flags
Omits, Lag, Dual Entry
Coordinated, Hold and Walk Rest
Recalls for Ped, Minimum and Maximum Vehicle
Max Inhibit and Full Walk Split

Coordination
64 Patterns
Fixed or floating force offs
Selectable timing flag sets
Actuated coordinated operation
Coordinated conditional re-service
Traffic responsive selection

Detection
64 Detectors
Each Detector can be assigned to any Phase(s)
Phases can have more than one Detector
Any input can be used as a Detector
Detector Modes
Locking or non-locking
Call and Extend
Actuate on falling edge
Release (force off) a phase on actuation
System Detectors
Volume Counts with full data logging
Fault Detection
Constant Occupancy
Minimum Pulse Width
Erratic Fluctuations
Absence of Call
Check in / Check out Transit Priority

Preempt
16 Preempt sequences
Two track clearance states, hold state and exit state
Selectable permitted phases for each preempt state
Recovery to coordination
Any input can be used to call a Preempt sequence

Calendar
Multiple day schedules with a perpetual calendar, every holiday is only programmed once for all years.

NTCIP
Support for NTCIP objects over Ethernet/Cellular using REST