



Company with Quality
Management System
certified by DNV
UNI EN ISO 9001: 2008

ORIONE

TRAFFIC CONTROLLER

ORIONE is a traffic controller designed with latest technologies and predisposed for future software updates of greater complexity thanks to its design using reliable standard industrial modules. The unit is realized for medium-small size signalized intersections, very competitive from the economic point of view but anyway able to meet the high-level functional needs and capabilities, such as centralization, of the other family controllers Vega and Pegaso.

All the controller cards are connected via dedicated I2C bus allowing to create a connection network between distributed intelligence type processors.

GENERAL FEATURES

The heart of the system is represented by the Linux operating system, in fact, the main command board of the controller is a CPU64 type.

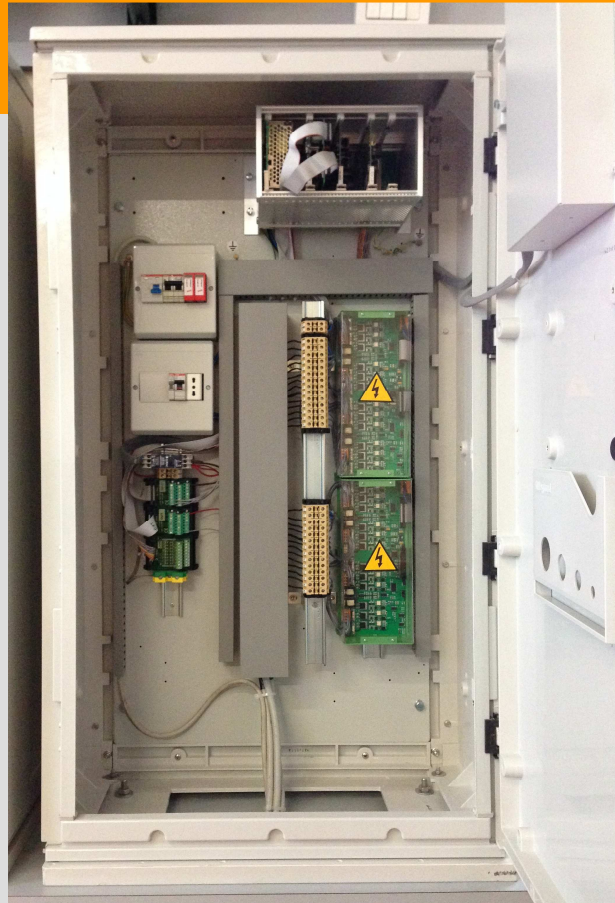
Below are some of the main operating features:

- Control of stand-alone junction with fixed or changing times through micro regulation loops.
- Control of junction in a dynamic way by calculating the cycle times and single phase in function of the volume of traffic detected within the area of macro-regulation.
- Control of a junction linked to a central remote control system.
- Perform functions of master / slave within synchronized management with other systems in order to obtain the green wave through wired or wireless GPS connection.
- Automatic adjustment / synchronization by GPS of its system clock and of time base.
- Collect, monitor and send traffic information to competent offices.
- Automatically send alarm messages and / or warnings via GSM / GPRS network.
- Be programmed in guided mode typically by semaphoric parameters or in free mode as PLC.
- Collection and storage of traffic data by volume, classification.
- Timestamp of all events and functional alarms.

Orione is therefore a controller that can manage any traffic situation according to the selected functional mode :

Stand-alone, coordinated, dynamic centralized or remote.

In addition, by simply replacing the power supply board the controller can drive a system operating at 42Vac with the utmost electrical safety.



Control panel



Output signals

Orione output groups are realized using the same characteristics of I/O64 boards so to provide functional and safety guarantees in a format suitable for standard DIN rail supports.

The main characteristics of the output groups are:

- Possibility to drive the traffic lights in dimmer mode by light adjustment
- Continuous control and monitoring of voltage and current of all traffic signal lights and of a single light.

Diagnostics

Orione is equipped with an in-built diagnostic software that can facilitate the failure identification and troubleshooting by providing important information, such as:

- Type of failure
- Board and relevant defective output
- Faulty loop and / or detector
- Faulty input

Diagnostics also allows to access the different internal memory archives for examining in details the equipment condition during failures.

A log file is available within diagnostic information.

Input commands

The controller is equipped with a control panel that can be accessed by a service door for selecting the following functions: AUTO, MANUAL, FLASH, ALL RED.

Safety

Orione is realized with redundant circuits for traffic light signal control of:

- Congruity of logic commands and incompatibility matrix with eventual corrective action
- Double sensor for control of green signals
- Separated bus between control and command signals
- Cross-check of communication between processors
- Monitoring of congruence between diagram (logical state) and ON / OFF status of the lights
- Timeout checking of traffic-light cycle timing

Configuration software

Orione can be programmed locally or by remote through a panel with keyboard-display or by PC with proprietary software running under Windows operating system.

Data can be inserted using the specific traffic light firmware and / or using the user script function from PC.

It is also possible to use a tablet / smartphone with a proper software application instead of panel-display.

User Interface

The communication interface is available in different languages.

CPU

It represents the heart of the controller and it is of same type of Vega and Pegaso controller:

- MonoEurocard layout
- ARM9 64-bit processor on SOM module
- 64Mb RAM
- 128Mb FLASH MEMORY
- 1 ETHERNET port
- 2 USB Ports
- 2 Serial ports RS232 and RS422/485
- 1 Port CONSOLE

Output Card

Realized in 265x107mm format; connections obtained by polarized quick plug-in connections. Each card provides 4 signal groups (R + Y+ G) or 12 protected outputs with 4 fast-blow fuses 4A on-board.

Detector card

Realized in Eurocard format it manages 4 autonomous self-tuning detector channels.

The connection to the central CPU is realized via dedicated I2C bus for a complete configurability and a compact integration in command minirack.

Digital inputs and outputs

Orione provides the hardware interface using a card with 12 inputs and 4 outputs all optically-isolated from the logic of the CPU.

Optional Cards

There are many hardware options available, Orione can be implemented with the following cards and modules:

- AUX64 card with GSM / GPRS, BLUETHOOT, GPS
- DET16 card (detector 4 channels)
- PIG-16in card (for additional 16 inputs)
- PIG-10out card (for 10 relay outputs)
- 32Digital-OUT card (for additional 32 digital outputs)
- Interface module for operating status and system restart by GPRS

Construction features

Orione is realized with a cabinet in electrically insulating material:

- fiber glass reinforced polyester
- Size 1150x650x350mm
- IP55 protection degree
- Color RAL7032

Basically equipped with:

- 1xPower supply board
- 1xCPU board
- 1xPIG 12in - 4 out card
- 1x4 signal groups card (12 outputs)

Electrical Characteristics

Main supply: 230Vac +15% -20 50Hz;
42Vac, 110Vac 50Hz (on request)

Consumption (load excluded) : 25W max

Maximum connected load : 500W resistive for output

Hold-up time : 150ms max

Operating temperature : from -40 ° C to +60 ° C

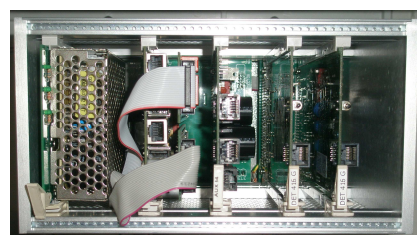
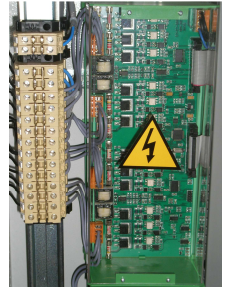
Compliant Norms

Orione conforms to the following standards:

EN 50556 Road Traffic Signal Systems

EN 50293 EMC

EN 12675 Functional Safety



Controller rack

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