SIEMENS

Rail Automation

Vital Interface Unit (VIU)

VIU-20e (ACSES)

The VIU is a general purpose programmable logic controller used to interface locomotive-based equipment to wayside equipment allowing the display of signal aspects in-cab. The VIU-20e can monitor the state of its inputs, perform logic functions and generate vital communications messages to report its status or the status of devices connected to its inputs.

The VIU-20e can installed either on the wayside or in an equipment room. Each VIU-20e unit provides 20 vital digital inputs that can be connected to an interlocking for Home Signal (HS) (go/no-go), 'C' signals (on/off), or switch positions (normal, reverse, unkown) via relay contact closure.

The VIU-20e supports the ACSES ATCS message protocol. It will respond to the ACSES ATCS Train Request messages (type 21) using the appropriate ACSES ATCS Encoder Response message (type 22, 23, or 24) depending on the state of the interlocking it is monitoring.

Features

- Integrated IP Connectivity
- Built-in keypad and display for configuration, troubleshooting and diagnostics
- Standard USB interface allows download of event logs and configuration information or upload of executive and application software
- Access from a laptop using standard web browser
- Consolidated event logging for distributed/ networked VIU units
- User programmable (Boolean Logic), generic lamp/ switch monitoring application for all locations

The VIU-20e interfaces to a Base Communications Package (BCP) via either a serial or Ethernet interface.

If more than 20 inputs are required, multiple VIU-20e units can be networked using standard Internet Protocol (IP/UDP) connectivity over the Ethernet port. In this case, the auxiliary VIU-20e units communicate with the main VIU-20e unit using vital Advanced Train Control System (ATCS) message protocols. The main VIU-20e unit consolidates the message(s) and creates one central message.

The ATCS protocol also supports remote configuration and control of selected non-UCN (Universal Check Number) protected VIU operational parameters.

Specifications

Power:

Input Voltage:	9.0-20.0 VDC
Steady State Current:	1.9 A at 9 VDC
	1.2 A at 13.5 VDC
	1 A at 16.5 VDC
Inrush Current:	At 9 VDC input - 11 A spike followed by 40 msec at 6.2 A
	At 13.5 VDC input - 12 A spike followed by 40 msec at 6.4 A
	At 16.5 VDC input - 20 A spike followed by 40 msec at 6 A
Input Isolation:	2000 Vrms at 60 Hz
Maximum Ripple:	1V (peak-to-peak)

GPS Antenna Connector:

Female SMA, 1/4-36 UNS threaded coupling

Vital I/O:

Voltage Levels:	5V to 20V = energized,
	-2V to 5V = de-energized
Isoltaion:	2000 Vrms at 60 Hz

Environmental:

Operating Temperature Range:	-40° F to + 160° F (-40° C to + 70° C)
Maximum Humidity:	90% non-condensing

Physical:

Dimensions:	8.80 inches high (22.35 centimeters)
	6 inches wide (15.24 centimeters)
	11.02 inches deep (27.99 centimeters)
Weight:	11 pounds (5 kilograms)

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

Siemens Industry, Inc.
Rail Automation
2400 Nelson Miller Parkway
Louisville, KY 40223
Tel: +1 800 793 7233
www.siemens.com/rail-automation