



The DVR100T digital voltage regulator provides brush-type excitation control for alternators in locomotive traction applications. It utilizes a current mode pulse width modulated output that can be sourced from a battery or other DC supply. This regulator is essentially a “buck” type regulator that can deliver up to 96% of the source voltage to the load.

An internal 130A fuse provides protection against short circuit faults. MOSFETs are used as the main switching component and have been designed to minimize losses while providing high reliability. The regulator can provide up to 80A continuously and up to 100A for short periods of time.

This digital regulator has the ability to precisely monitor, control, and protect utilizing a modern user interface. There is also the ability to monitor remotely with the universal interface card.

Key Features

Excitation Control Modes

- Automatic Voltage Regulation (AVR)
- Field Current Regulation (FCR)
- Digital excitation control utilizing an advanced microcontroller with digital signal processing capabilities

Protection & Limitation

- Under and over voltage
- Under and over frequency
- Instantaneous overcurrent
- Timed overcurrent
- Power stage protection (internal)
- V/Hz limiting

Other Features

- Utilizes a Digital Signal Processor (DSP)
- Manages the conversion of data and all communications
- Controls the field power and relay outputs
- Monitors the protection parameters and digital inputs
- Programmable soft start and V/Hz
- Universal communications card for remote monitoring and connecting to user interface
- USB for connecting to user interface

Electric Features

Main Power Supply

- DC voltage nominal: 72V
- DC voltage range: 43V - 110V
- DC current: Dependent on output current and duty cycle

Auxiliary Power Supply

- Voltage nominal: 24 VDC
- Voltage range: 22VDC - 26VDC
- Burden: 7W
- Type: 1-phase, 3-phase (3-wire)
- Burden: < 1VA
- Voltage range: 0VAC - 250VAC-RMS (isolated)
- Frequency range: 0Hz - 420Hz

Alternator Current Sensing

- Type: 1-Phase or 3 Phase
- Burden: < 1VA
- Current range: 5A AC Nominal
- Frequency range: 0Hz - 420Hz

Digital Inputs

- Type: Non-isolated, Dry Contact
- Resistance: 3.8k ohms

Relay Outputs

- Type: Form A x 3 Sealed
- Contact material: AgSnIn

Inputs & Outputs

Voltage Sensing Inputs

- 3 inputs (3-wire) for main voltage sensing
- Maximum settings: 250 VAC, 20000 PT primary, 350 PT secondary

Current Sensing Inputs

- 3 5A current inputs
- Maximum settings: 20000 CT primary
- Low burden (<1VA) connection

Digital Inputs

- 4 programmable digital inputs
- Option for dry contact input or open drain sink circuit

Relay Outputs

- 3 programmable relay outputs, 1 service relay output
- Relays 1-3 are Form A sealed type that can be programmed to operate as normally open or closed (NO or NC)

Analog Inputs

- Each input defined by its signal type (0-20mA, 4-20 mA, 0-10V) and minimum/maximum limits.

Main Input, Auxiliary, & Outputs

- Main: connected to a Battery or other DC supply
- Auxiliary: provided for testing and calibration, also provides a low voltage supply option for the end user
- DC supply outputs (+24V, +/-15V) for powering analog sensors

Communication & Settings

- Dedicated configuration software
- USB port
- Integrated display allowing full configuration & consultation

Dimensions

