

Compact Locomotive Radio Control System

Hubbell Radio Remote Control Systems

Spec Sheet 31.210 • August 2000 • New

Internal Diagnostics

- Run by microprocessor on internal programs
- Run by microprocessor on commands and I/O
- Power-up diagnostics
- Continuous monitoring

Operational Status Readout

- English language display of status

Controls System Features

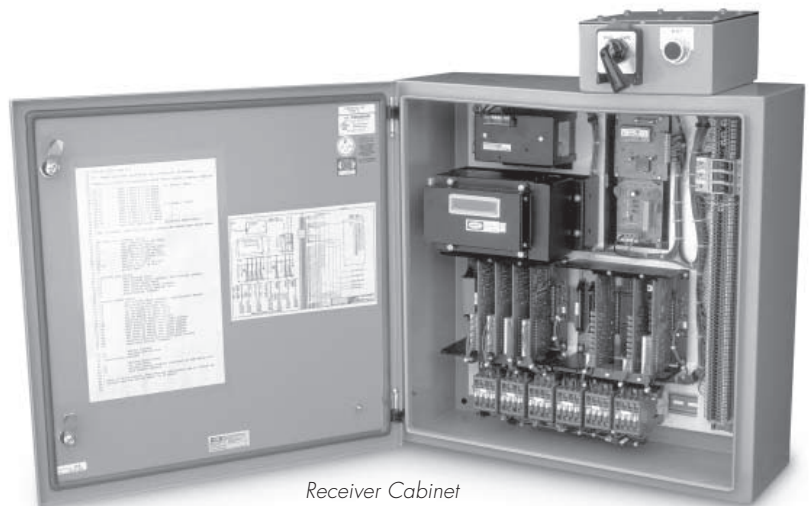
- New "Compact" receiver with diagnostic display module
- New "Compact pneumatics interface with analog valves for throttle/brake
- For use with any of the Hubbell transmitters, see Catalog 31.300

Compact Receiver

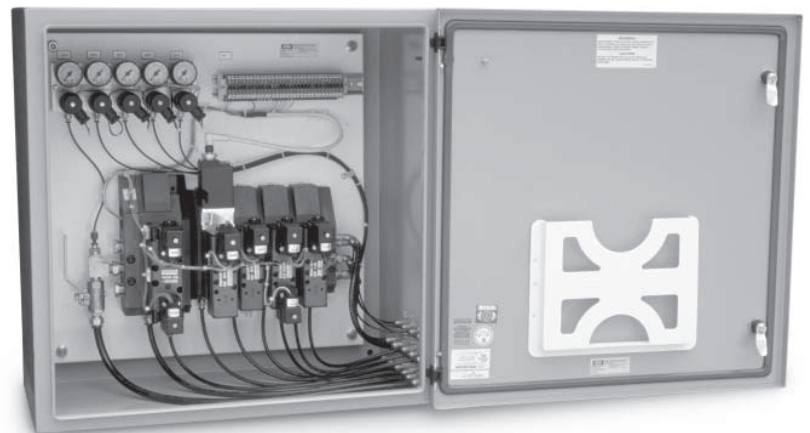
- Proven rf module and micro I/O module from radio crane control
- New "E-Stop" board
- New plug-in output interface cards
- Frequency: 72-76 or 450-470 MHz FM
- NEMA 12 enclosure - 24" h x 24" w x 12" d

Compact Pneumatic Interface

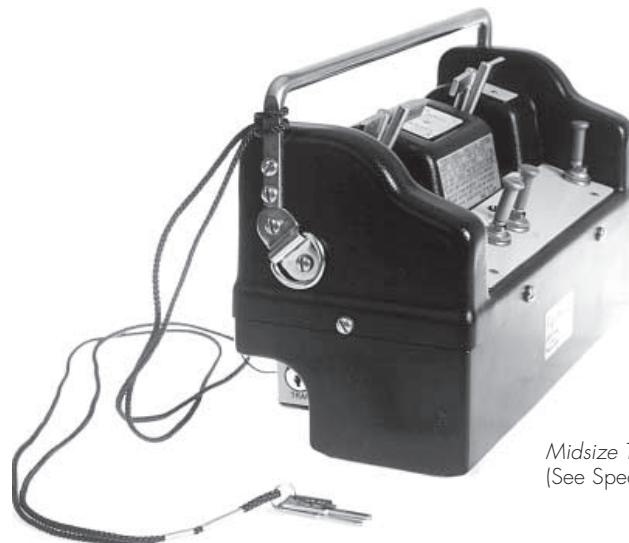
- Very compact manifold/valve assembly
- Analog valves for throttle and train-line brake control
- Analog pressure indicators
- NEMA 12 enclosure - 24" h x 24" w x 12" d



Receiver Cabinet



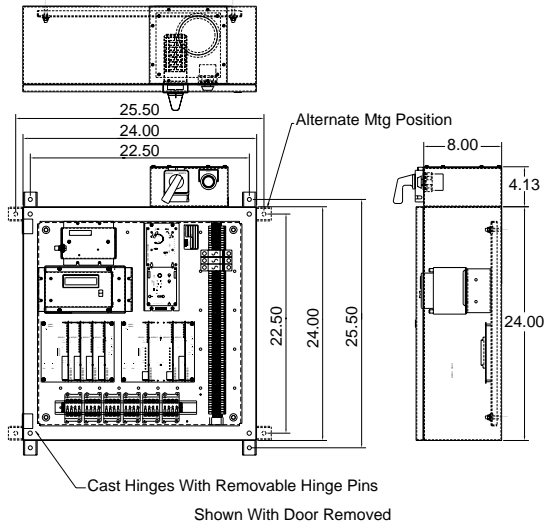
Pneumatics Cabinet



Midsize Transmitter
(See Spec 31.320)

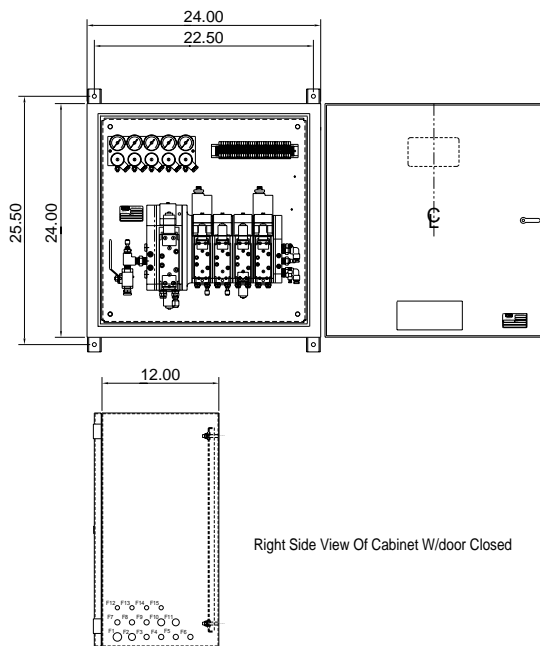


Outline Drawings



Receiver Cabinet
Weight — 90 lbs.

Pneumatic Cabinet
Weight — 110 lbs.



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Specifications

Supply Voltage 12VDC, 24VDC, 36VDC or 72VDC
Internal Power Requirements +11.9–13.1VDC & +4.5–6.5VDC, 24 VDC
Operating Temperature -22°F (-30°C) to 140°F (+60°C)

Radio Receiver

Frequency Range 72–76 MHz or 450–470 MHz
Channel Availability as required by user
Frequency Stability ±5 ppm
Sensitivity 1 μV @ 20 dB quieting
Data Reception compatible with Hubbell transmitters
Modulation Manchester II (bi-phase)
Baud Rate 4800 bps
Message Format preamble, sync, start flag, address, control, CRC check code

Control Section

Single board computer consisting of 80C31 controller, 64k EPROM, EPLD containing circuits for bi-phase decoding

DC Output Section (Electro-mechanical relays)

Panel mounted mother-board to accommodate 4 plug-in relay boards, each with 6 output relays, for a maximum of 24 ac output relays and 12 sense inputs

Indicators LED on each output
Feedback Sensing opto-isolated input from: AIR PRESSURE, THROTTLE, BRAKE, FORWARD, REVERSE relay outputs
Relays Standard PC board relays
Output Rating 115/230V ac, 50/60 Hz, 5A resistive;
12/24V dc, 5A resistive
Isolation 5000V

DC Output Section (Stepped analog outputs)

Panel mounted mother-board to accommodate 4 plug-in boards, each with 1 analog output.

Indicators LED on each of 8 levels
Output Rating 0–10V dc, 20mA, in 8 steps
Isolation 5000V

“E-Stop” Board

Plug-in PC board (plugs into motherboard of DC Output Section in place of 1 electro-mechanical relay board)

Indicators LED on each of 5 inputs and 1 output
Inputs 5 inputs, optically isolated
Isolation 5000V

Control Relays (DIN Rail Mounted)

Individual control relays, as required for locomotive functions.

NEMA P300 DC Inductive Rating 5A Continuous at 250VDC Max.
138VA Make & Break Max.

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