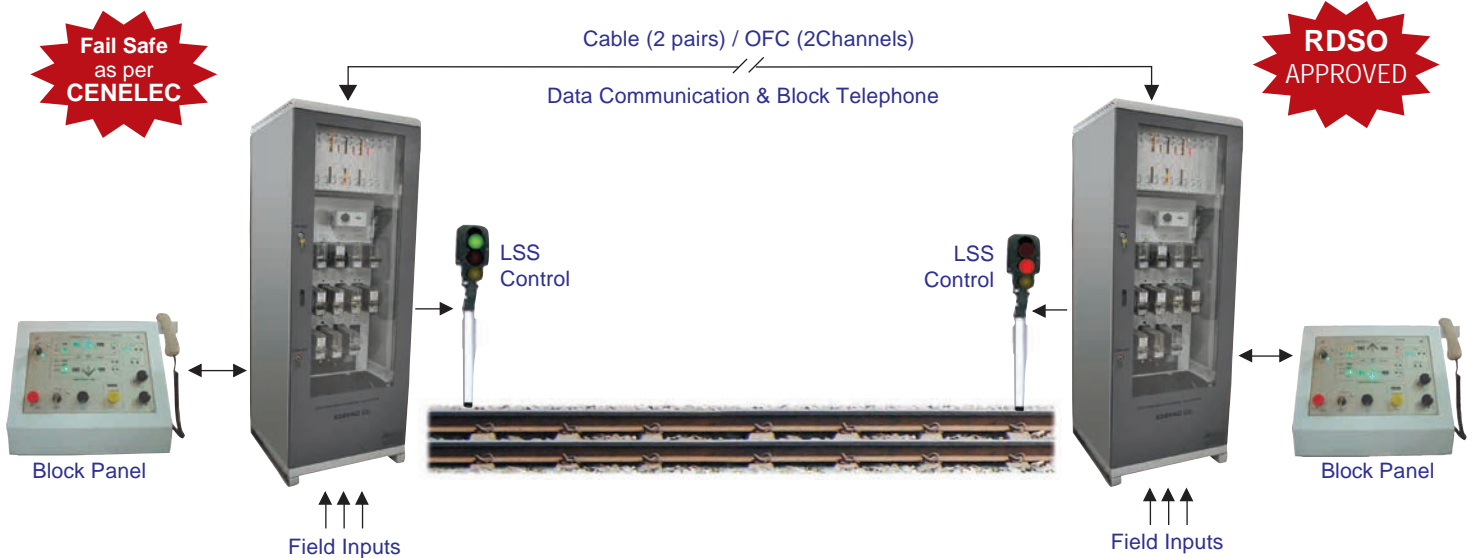


RDSO Specification: RDSO/SPN/175/2005

Solid State Block Proving by Digital Axle Counter (SSBPAC) is a solid state system used for controlling the coordinated movement of the train in the block section, working on Absolute Block Working Principles. The system has been developed as per RDSO / SPN / 175 / 2005 both for single line and double line.



SSBPAC (D) ADVANTAGES

Operational Benefits:

- ❖ Fit for Both RE and Non-RE areas.
- ❖ Automatic TOL – block failure due to premature TOL operation eliminated.
- ❖ Automatic Line Close – Elimination of operator involvement results in time saving and immediate block closure.
- ❖ Block closing provision after push back operation, avoids block failure for next train.
- ❖ Stress free and Easy operation by push buttons.
- ❖ Audio-visual alarms on section occupancy and clearance.
- ❖ In the present system LSS Signal Flying Back due to FVT / ASTPR bobbing results in PLCT. This problem can be recovered by cancellation in SSBPAC (D) without need of PLCT.
- ❖ There is no block length limitation as equipment supports OFC.

Safety:

- ❖ 2 out of 3 Architecture ensures safety as well as availability.
- ❖ Inclusion of watch dog and mine fields for controlled software flow.
- ❖ Bi- state and de-bounce validations for inputs.
- ❖ Independent 2 out of 3 Architectural Voter card for placing validated outputs.
- ❖ Critical Power Control module using twin relays for assisting safe shutdown.
- ❖ Latching nature of TGTR and TCFR QL1 Type relays is tested for its every operation.

Maintenance Benefits:

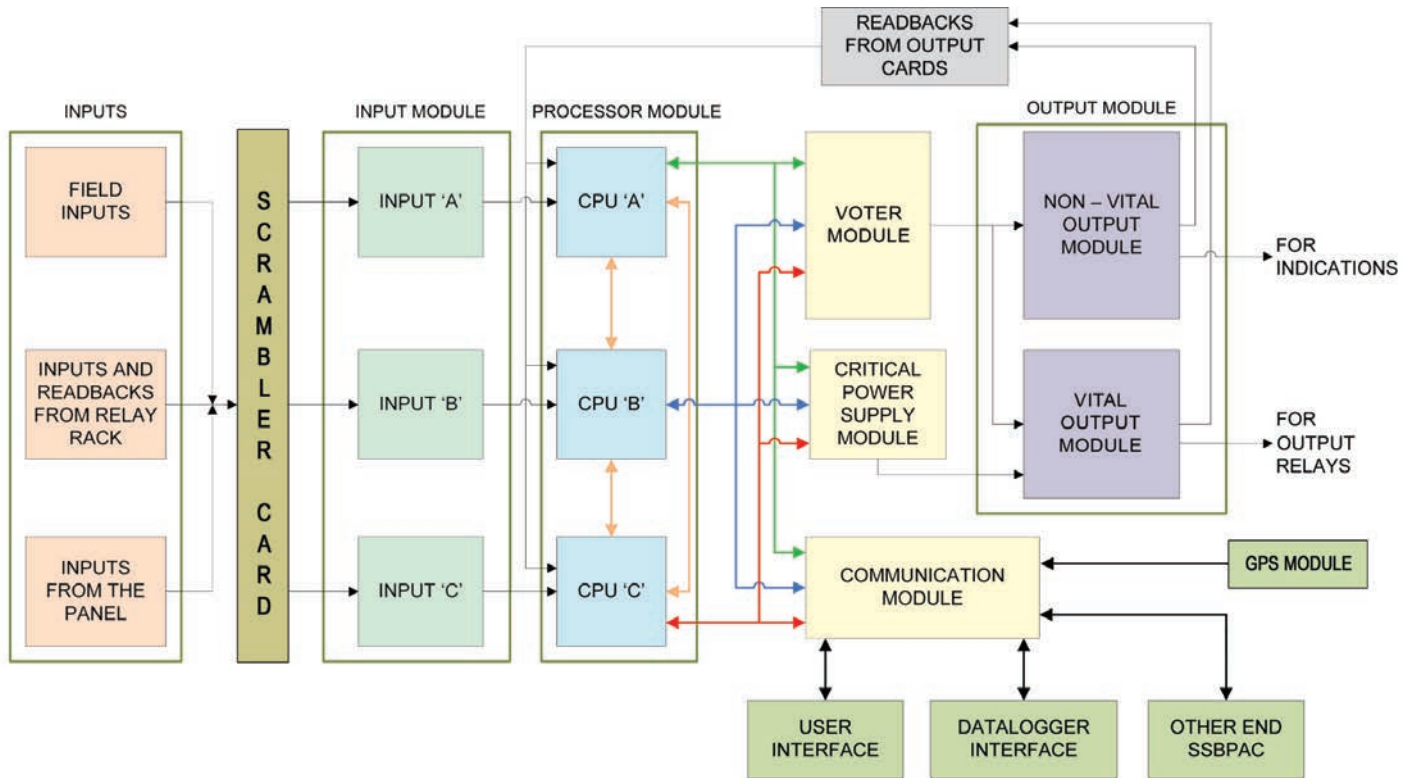
- ❖ No periodic over hauling as there are no mechanical parts.
- ❖ Less number of relays used – improved reliability.
- ❖ Instrument can work on both OFC and Quad media – no changes need be done to block equipment when medium is changed.
- ❖ Better troubleshooting with event logging and user terminal.
- ❖ Centralized fault detection and assistance, through Data Logger Network IRS/99/2006.
- ❖ Error code displayed numerically for ease of understanding.
- ❖ Status of all relays indicated by LED – reduces MTTR.
- ❖ Diagnostic LED indications provided on the PCB facia makes troubleshooting easy.
- ❖ Sufficient space provided in the equipment rack for keeping spares to reduce MTTR.

Additional Benefits:

- ❖ Block instrument clock is synchronized with GPS.
- ❖ Extra Modem is provided for communication between data logger and SSBPAC (D).
- ❖ Industrial grade, components provided to ensure reliability.
- ❖ Communication lines and power supply lines are protected with SPDs.
- ❖ Burn-in and temperature cycle tests in the manufacturing process ensures zero fault production.
- ❖ Each processor card is provided with independent power supply system – ensures reliability.

SOLID STATE BLOCK PROVING BY AXLE COUNTER (DIGITAL)

SSBPAC ARCHITECTURE



INSTALLATIONS

DOUBLE LINE



SINGLE LINE



'R & D'
Recognised by
DSIR
Govt. of INDIA


Efftronics Systems Pvt. Ltd.
ISO 9001 : 2008
20000873 QM08

Approved by
RDSO
Govt. of INDIA
Ministry of Railways

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