

# ILS-SMO Brake System for WAG-10 Locomotive



**Description :** Integrated Locomotive Systems (ILS) brake control system is a network-based, electro-pneumatic air brake system designed for UIC type compliant main line, freight and passenger locomotives. ILS utilizes a modular design approach based on a distributed electronic architecture.

**Application :** WAG-10 (3 Phase Electric Locomotive)

**Customer :** Siemens Mobility

**End Customer :** Indian Railways

**Key benefits of product :**

- Microprocessor based Brake Control System (BP, BC & BCEQ)
- Redundancy in pneumatic and electronics
- Embedded self diagnostic capabilities
- In-built fault and event logging capabilities
- Improved reliability through pneumatronic concept
- LCC improvement through LRU concept
- PID control of solenoids apply / release pressure to achieve specific target value
- Integrated Pneumatic Time Dependent Control (PTDC)
- Ready to integrate with TCAS, TPWS, ACD, DPWCS, etc.

**Specifications :**

- RDSO Specification : RDSO/EL/SPEC/0126
- Operating modes : Lead, Trail, Helper, Test
- Degraded mode : PTDC with Backup Brake (Pure Pneumatic)
- Space envelope : 1200 x 1150 x 1900 mm
- Weight : 720 Kg
- Working pressure : 10 Kg/cm<sup>2</sup> Max.

- Operating temperature : -10°C + 70°C (System);  
-25°C + 70°C (LRU's)
- Operating voltage : 78 to 136 V DC according to EN 50155
- Maintenance : Ethernet
- Communication : MVB

**Global standards compliance :**

- Shock & vibration : IEC 61373 Category 1 Class B
- EMI/EMC : IEC 60571
- Environmental test : IEC 60571
- Pneumatic leakage : NFF 11600
- Electronic equipment : EN-50155
- Software : EN-50128
- IP : IEC 60529
- RAMS : EN-50126
- Safety Integrity Level : SIL 2

**Product Family:** ILS Brake System for 3 Phase Electric Locomotive

