



INTEGRAL
CONTROL SYSTEMS LTD.

INTEGRAL TRACTION INVERTER [ITI]

System Datasheet

ICS Model Number ITI0001

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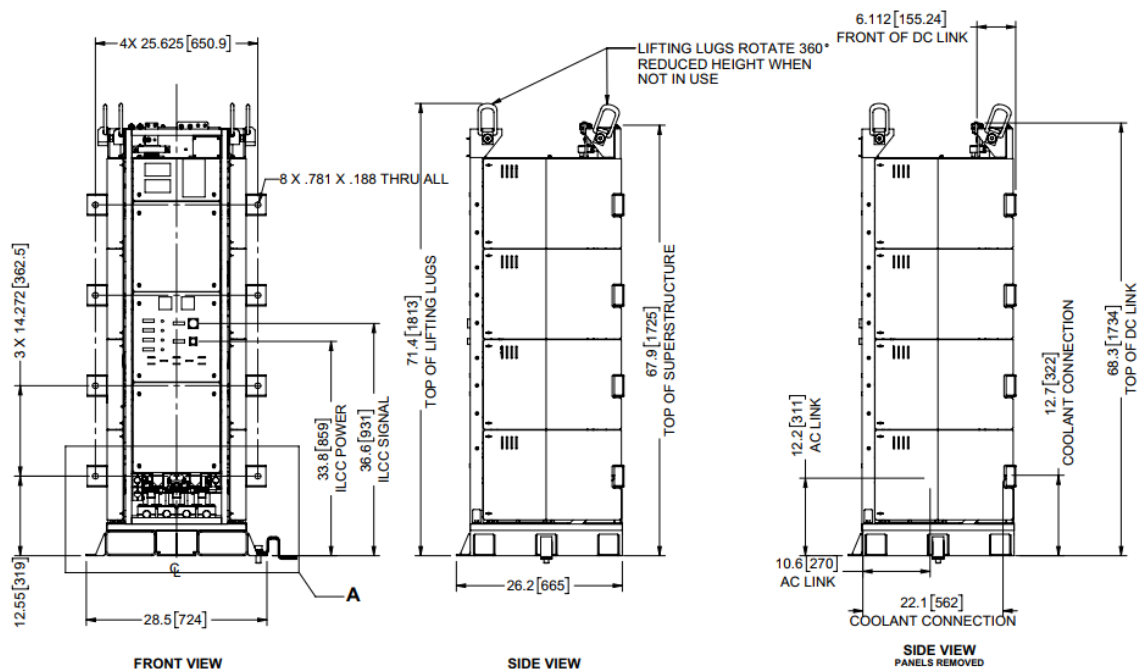
Integral Traction Inverter – ITI

The ITI is a heavy-duty railway traction inverter designed to handle the most demanding freight rail line-haul AC locomotive traction motor applications:

Key Benefits

- 1500Vdc DC link interface working voltage
- Designed for demanding locomotive application conditions
- ‘Filterless’ output designed to work with railway AC traction motors
- Reduce HV compartment space required by 50%*
- Integrated capacitor bank simplifies installation
- Fully integrated with the Integral LCC Locomotive Control Computer

* Compared with conventional catalog industrial DC/AC drive solutions



Integral Traction Inverter – ITI

Specifications

HV DC Link Input

- Working input voltage: 500Vdc – 1500Vdc
- Maximum input current: 700Adc
- Rated Power: 746kW @ 1000Vdc

HV AC Output

- Output frequency range: 0-200 Hz
- Maximum continuous operating current: 1200Arms
- Maximum continuous operating voltage: 1000Vrms
- Peak output current protection limit (software): 2300Apk

Control Power Management

- Nominal supply input 72Vdc with ultra-wide transient range 16.8Vdc-160Vdc
- Isolated EN50155 rated internal power supply
- Reverse bias protection/overvoltage protection/undervoltage protection

Environmental

- Operating ambient temperature: -40°C to 50°C
- Shock and vibration: MIL-STD-810G
- Standard 50/50 EGW liquid cooled heatsink
- Maximum chiller fluid temperature: 55°C
- Number of chiller loops: 2
- Chiller loop flow rate: 30 LPM
- Chiller loop pressure drop: 0.8 BAR
- Heatsink overtemperature shutdown: 90°C

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Mechanical

- Dimensions: 28.5" (W) x 68.0" (H) x 25.8" (D)
- Weight: 1130lbs

Control Harness

- 6x isolated PWM inputs
- 6x isolated digital fault inputs
- 4x current sensor outputs
- 2x AC voltage sensor outputs
- 1x DC voltage sensor output
- 1x 4-20mA temperature sensor output
- 1x isolated digital enable input
- 2x isolated indicator digital inputs

Maintenance Indicator Panel

- Enable LED
- Fault LED
- High voltage status LED
- Control voltage status LED

Integral Traction Inverter – ITI

Why work with Integral Control Systems?

- We are customer driven; your success is our primary mission.
- Decades of locomotive control experience; we're ready to solve your toughest project challenges.
- We are experts in locomotive propulsion and traction control; from conventional EMD and GE alternator fed units to DC link AC and DC traction solutions.
- We are innovative and experienced in empowering disruptive, industry leading railway technology development; from multiengine gensets to battery and battery-hydrogen hybrid locomotives.



Your Partner in Complete Locomotive Control Solutions!

