



INTEGRAL
CONTROL SYSTEMS LTD.

INTEGRAL TRACTION CHOPPER [ITC]

System Datasheet

ICS Model Number ITC0001

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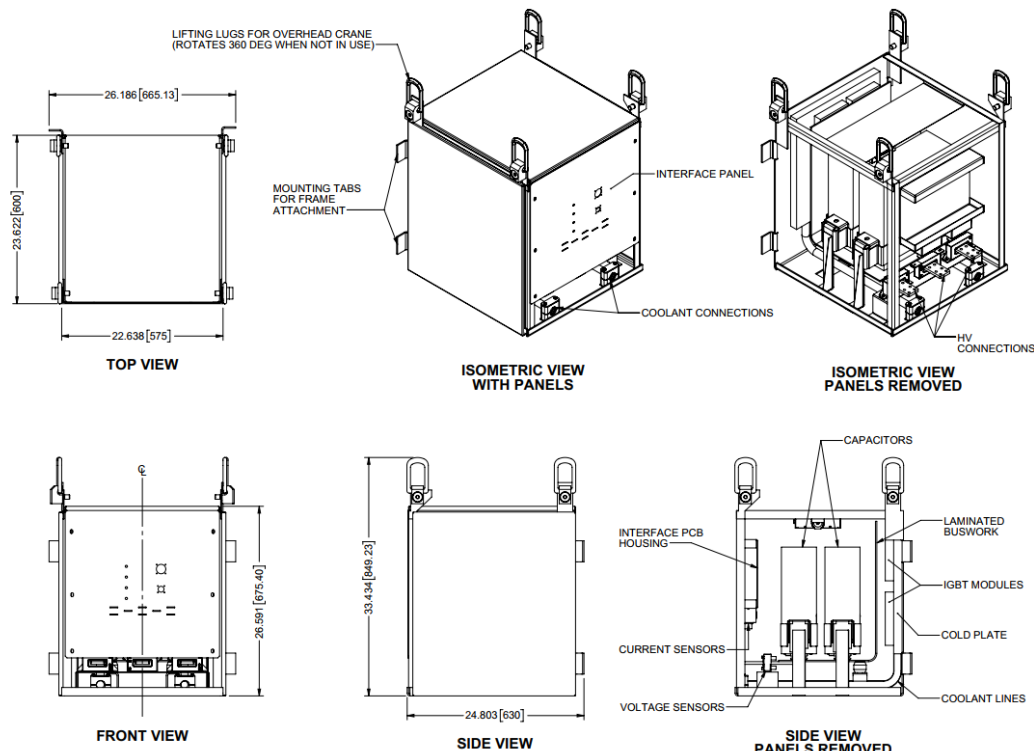
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Integral Traction Chopper – ITC

The ITC is a heavy-duty railway traction chopper designed to handle the most demanding freight rail locomotive DC traction applications:

Key Benefits

- 1500Vdc DC link interface working voltage compatible
- High output capacity supports even the largest DC traction motors
- Integrated regenerative braking boost conversion support
- Liquid cooled thermal management
- Fully integrated with the Integral LCC Locomotive Control Computer system



Integral Traction Chopper – ITC

Specifications

HV DC Link Input

- Working input voltage: 500Vdc – 1500Vdc
- Maximum input current: 700Adc
- Rated Power: 655kW @ 1000Vdc

HV DC Output

- Continuous operating current: 1650Adc
- Peak output current protection limit (software): 2000Apk
- Peak output voltage: 1500Vdc (limited to input working voltage supplied)

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
- 60 watts power consumption at 72Vdc supply

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: 63°C
- Number of chiller loops: 1
- Chiller loop flow rate: 20 LPM
- Chiller loop pressure drop: 0.25 BAR
- Heatsink overtemperature shutdown: 90°C

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Mechanical

- Dimensions: 26.1" (W) x 26.6" (H) x 23.6" (D)
- Weight: 351lbs

Control Harness

- 2x isolated CAN (default control interface)
- 1x isolated RS232
- 1x isolated USB
- 2x isolated PWM (alternate control interface)
- 1x isolated digital enable input (24Vdc or 62Vdc compatible)
- 5x isolated 4-20mA analog outputs (DC input current & voltage, DC output current & voltage, heatsink temperature)

Maintenance Indicator Panel

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

Integral Traction Chopper – ITC

Why work with Integral Control Systems?

- We are customer driven; your success is our primary mission.
- Decades of locomotive control experience; we are 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!

