

Aircraft Ground Connection Systems

Aircraft Cable Management



July 2018 - DAS-AGC-01



Cavotec Cable Coiler bridge mounted 2 x 90kVA



Cavotec Cable Coiler ground mounted 2 x 90kVA



400Hz Cable Reel with cover

Cavotec wants to contribute to a future world that is cleaner, safer and more efficient by providing innovative connection solutions for ships, aircraft and mobile equipment today.

Cavotec has been a pioneer of airport ground support equipment (GSE) for more than forty years. The company was an early developer of 400Hz technology, specialised cable reels and aircraft connectors, which are now industry standard at airports worldwide.

Cavotec extensive 400Hz aircraft ground connections solutions offer all options to airports, airlines and ground handling companies. We secure the best-fit for your specific needs.

400Hz Cable Coiler

Cavotec 400Hz Cable Coilers are motorised reeling systems fixed either under the Passenger Boarding Bridge (PBB) or on the ground. They ensure fast and ergonomic reeling and storage of 400Hz cables and plugs. Our user friendly cable coilers improve the safety of ground handling, and are equipped with 400Hz service cable.

Benefits

- Motor-driven reel, distributing 400Hz power to aircraft with automatic reeling of the 400Hz aircraft cable
- Safe ground handling operation due to easy control of the coiler and its functions
- Robust design ensuring low maintenance costs due to improved cable management and protective enclosure for the 400Hz cable
- Highly safe system with remote ground handling operations via push-buttons located at the Cavotec 400Hz aircraft plug or at the bridge column
- Integration of the Cavotec 400Hz cable harness for an improved power transmission

Main components

- PLC control with frequency controlled motor
- Limit switches and overload protection
- The coiling drum is driven by a direct geared motor
- Pressure rollers located on the perimeter of the coiling drum ensure safe coiling of the cable

Cavotec 400Hz cable coilers can also be integrated with a 400Hz GPU. Refer to Cavotec 2500+ PowerPack I-Connect datasheet.



400Hz Cable Reel

Cavotec 400Hz Cable Reels connect and power parked aircraft. Integrated on the side of PBB, the units are a new solution for operators wanting to create space underneath PBB, and improve ground level clearance.

Benefits

- Motorised reeling and unreeling for fast and easy aircraft connection
- PBB lateral installation for space gain and easy installation
- Higher ground clearance when PBB connected to small aircraft
- Reduction of potential damages due to mobile GSE
- New cable harness technology and equipped with Cavotec 400Hz SP plug

Main components

- Mono-spiral-drum
- Cable harness
- Gear motor with chain transmission
- Control unit with PLC or relay control
- Service cable



400Hz Cable Reel with cover



Cable Hoist mounted on a PBB

400Hz Cable Hoist

Cavotec Cable Hoists provide elevated stowage for 400Hz and 28VDC load cables and plugs, thereby removing cables from the tarmac and away from ramp operations. Using an included limit switch, hoists can be interlocked with PBB to prevent bridge movement until 400Hz cable is fully elevated.

Benefits

- Easy storage of 400Hz cable
- Automated use with motor-driven winch and remote control box
- Overload protection: the winch is driven by a geared motor with a slipping clutch

Main components

- Motor-driven winch with a triangular lifting bar
- Three cable holders
- Mounting brackets for PBB
- Limit switches stop the winch when the rope has been either fully reeled in or out



Cavotec 2500+ PowerPack I-Connect

400Hz PowerPack I-Connect

The Cavotec 2500+ PowerPack I-Connect is a complete 400Hz system fixed on Passenger Boarding Bridges to power parked aircraft at the gate. The integrated 400Hz system is a stand-alone unit including the unique technologies of Cavotec Series 2500+ converter and cable coiler.

Refer to the specific product datasheet.

Technical characteristics

Mechanical and electrical characteristics			
	Cable Coiler M28	Cable Reel	Cable Hoist 1HP 400V 50Hz 1HP 480V 60Hz
Dimensions L/W/H, mm [in]	1045x927x860 [41.1x36.5x33.9] ⁽¹⁾	1670x465x1698 [65.7x18.3x66.85]	1124x284x337 [44.25x11.16x13.25]
Weight, kg [lbs]	approx. 310 [684] without cable approx. 420 [926] with cable	approx. 420 [926] without cable ⁽³⁾ approx. 560 [1234] with cable ⁽³⁾	58 [127]
Voltage	230V/50Hz or 120V/60Hz		400V 50Hz 480V 60Hz
Motor power	230V / 0.75kW controlled by motor frequency converter	230V / 1.1kW controlled by motor frequency converter	0.75kW
Protection class	IP 54		
Coiling speed	up to 0.7m/s	0.4m/s - 0.6m/s	0.4m/s
Power transmission	90kVA, 115/200V, 400Hz		
Temperature range, °C [°F]	-25° to +55°C [-13°F to +131°F] with heater ⁽²⁾		-20°C to +45°C [-4°F to +113°F]
Sound pressure level	<65 dB(A)		
Designed to meet the norms	EN 1915-1, EN 1915-2, EN 60204, LN 29845, ISO461, DFS400, EN 12312-20, UL508A	EN 1915-1, EN 1915-2, EN 60204, 2014/30/EU, 2006/42/EG, EN 12312-20, DFS400, EN ISO 12100, UL508A	UL508A
Version	Ground or bridge mounted Various cable lengths Optional: pillar, rotation 15°, including roof aluminium plate	Bridge mounted Various cable lengths	Bridge mounted
Usable cable length, m [ft]	27 [88] up to 28 [91] with additional flexible coupling	30 [98]	30.5 [100]
Cable versions	Option 1- 27m usable 400Hz aircraft cable - 3x70+3x12+6x4x1mm ² (without coupling) Option 2- 28m usable 400Hz aircraft cable (including flexible coupling with ~1.8m of 4x70+4x1mm ²), 7x35+6x4x1mm ²	30m usable 400Hz aircraft cable (guarantee all aircraft types can be connected) 3x70+3x12+6x4x1mm ²	Banded type or Single Jacket type Different cable options available
Housing material	Steel frame primed and powder coated, cover: aluminium (with RAL 9006)	Stainless steel or carbon steel powder coated, cover: aluminium powder coated	RAL 9010, Painted Steel

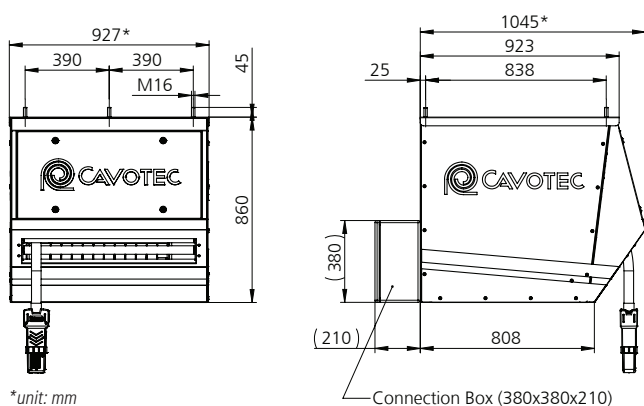
⁽¹⁾ Without connection box

⁽²⁾ See graph with the temperature range and full load

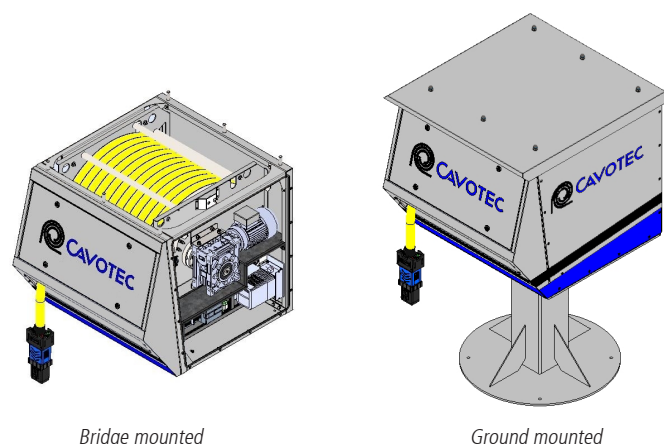
⁽³⁾ Without mounting bracket

Technical drawings

400Hz Cable Coiler

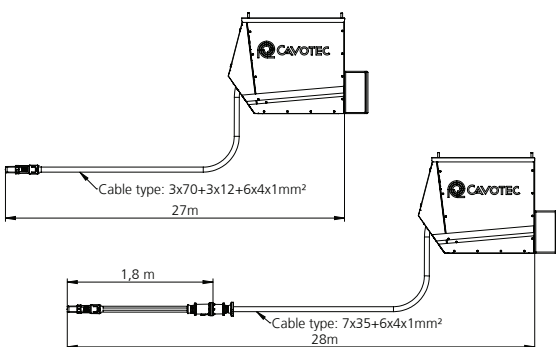


*unit: mm

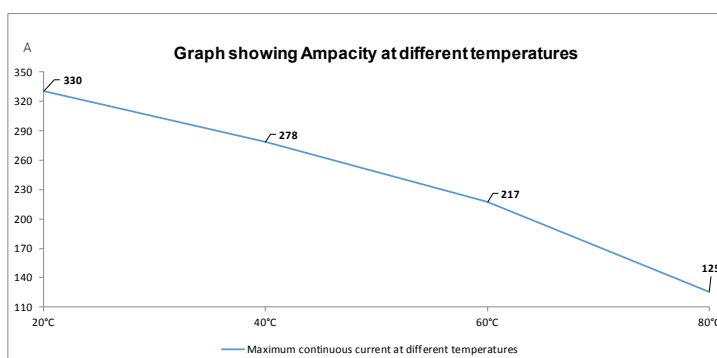


Bridge mounted

Ground mounted

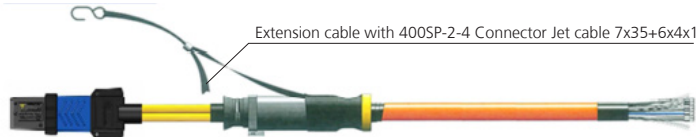
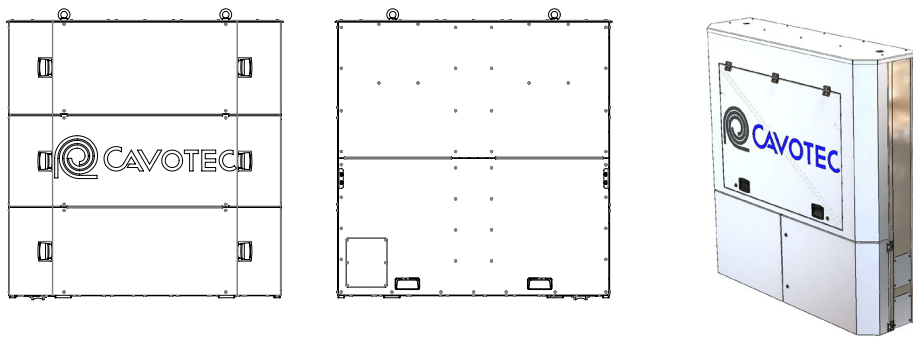


M28 coiler with and without cable coupling



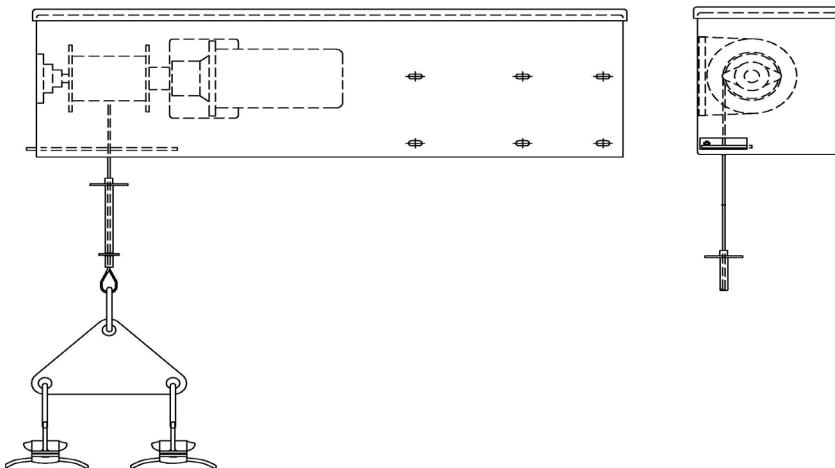
Temperature range and full load graph

400Hz Cable Reel



400Hz connector equipped with 400Hz SP plug - service cable up to 30m usable length

400Hz Cable Hoist



Options

Cable Coiler

- Mounting bracket for bridge installation of 1 coiler
- Moveable mounting bracket for bridge installation for 2 coilers
- Remote control box, metal (aluminium alloy), IP67, cable up/down and e-stop, one per cable coiler
- Other RAL colours upon request

Cable Reel

- Mounting bracket for bridge installation
- Remote control box, metal, IP67, cable up/down and E-stop
- Plug & play – replaceable within 15 minutes
- Other RAL colours upon request

Cable Hoist

- Additional signals can be provided to interact with the PBB
- Thermostat-controlled heater
- Rubber protection
- Various sizes of cable holders

Accessories

Cable type and length, aircraft plug and pluggable coupling.

Please contact your local Cavotec Sales Office for further information at cavotec.com.

Disclaimer: specifications are subject to change without notice.