



Data Sheet

WS403 Remote solution



PLUS+1

Remote Connection to PLUS+1® Mobile Machine Control Systems

The Danfoss WS403 Remote Solution is Plug and Perform compliant with the PLUS+1® family of mobile machine management products. The WS403 allows PLUS+1® Service Tool access to a mobile machine's PLUS+1® control system from locations remote to the machine. The WS403 provides the same functionality that is available when a laptop running the PLUS+1® Service Tool is directly connected to the machine using the Danfoss CG150 CAN/USB Gateway.

Wireless Communication

The WS403 Remote Solution consists of a wireless gateway with SIM card and antenna. The gateway plugs into the machine's CAN communication bus and may be permanently mounted on the machine or used as a temporary diagnostic tool. WS403 device drivers are embedded in the PLUS+1® Service Tool. The final user can decide the preferred data service plan subscription.

Remote Machine Control Access

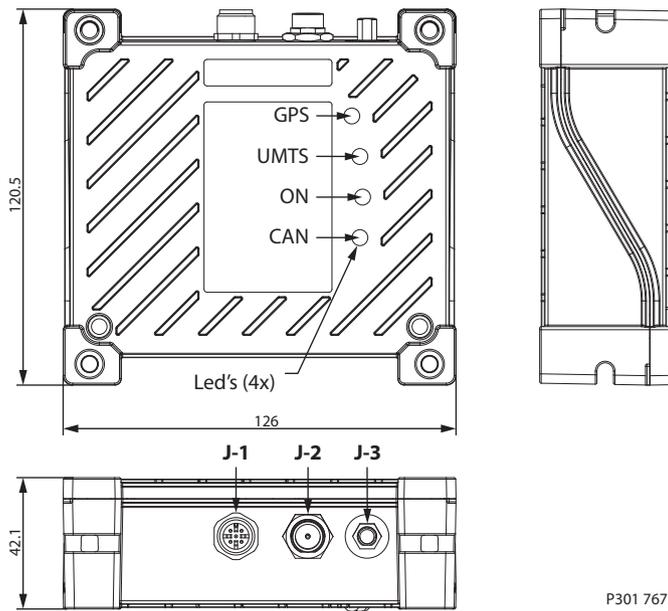
The WS403 allows remote upload and download of machine application tuning parameters, remote downloads of application software to machine PLUS+1 controllers and displays and remote access to machine vault memory.

Features

- Easy-to-Install enclosure
- Plug and Perform integration with PLUS+1® Service Tool
- Supports temporary or permanent machine installation
- Interfaces with programmable PLUS+1 compliant hardware to:
 - View checkpoint data
 - Upload and download parameters
 - Reflash applications
 - Read vault memory
- Internet-based fleet management and remote diagnostic with Danfoss Telematics Solutions
- Real Time Clock with Backup Capacitor with backup time 24 hours (typical @25°C)
- Global Positioning System (GPS, GLONASS and BeiDou) for real time positioning and data stamping
- Global System for Mobile (GSM) wireless communication, UMTS, and HSDPA
- GSM/GPS combined antenna with mounting flexibility
- 1 CAN Bus (ISO 11898-2 High Speed, 2.0A/B) supports machine CAN bus bit rates up to 1 MB per second
- 3-axis accelerometer
- Micro-SD Card interface
- CE, E1, FCC compliant
- Remote Solution Kit includes remote Gateway, antenna and cable
- IP 65 ingress protection degree
- Access to CAN data, the device enable to display, monitor, record and analyze data of mobile and stationary CAN bus systems from anywhere
- Integrated memory expansion is available for WS403
- The software WS System Tool enables the user to easily adapt the configuration of WS403 to the most diverse applications, update the firmware and to configure the devices remotely
- Danfoss Telematics Solutions allows for numerous telematics applications: near real time access to CAN data, Web Portal solution with comprehensive functionalities (data reporting / analysis , geo tracking, geo fencing, optimizing routes and processes ...)

The WS Remote Solution requires GSM data connectivity in area(s) the device will be located. As it is customary with cellular services, GSM data coverage may be subject to bad cells or unavailability in certain areas. Verify the available current wireless service carriers and their roaming partners.

Dimensions



Pin	Designation	Color	Description
1	Ground	Brown	Power supply
2	VCC 6 ... 32 V DC	White	Power supply
3	not connected	Blue	
4	CAN-High	Black	CAN Bus
5	CAN-Low	Grey, green	CAN Bus

Connector J-1 pinouts information



Pin	Designation	Description
1	Signal	GSM/3G
2	Ground	Shield/housing

Connector J-2 GSM/3G



Pin	Designation	Description
1	Signal	GPS
2	Ground	Shield/housing

Connector J-3 GPS

Mechanical data

Device Type	WS403
Dimensions w / h / l [mm]	126 / 128 / 42
Standard housing	Aluminum, powder-coated
Color	Charcoal
Operating Temperature range	-30 °C ... +75 °C [-22 °F ... 167 °F]
Storage Temperature range	-40 °C ... +85 °C [-40 °F ... 185 °F]
IP Rating	IP 65 with all connectors plugged in
Weight [kg]	Max 0.650 [22.9 oz]
Status LEDs (2 colors)	4

Electrical data

Supply Voltage [V]	6.. 32
Controller MCU	ARM Cortex M4
EMI/RFI rating [V/m]	EEC EMC Directive 89/336
Power consumption [mW]	max 10000 (@25°C; 24 V DC)
Memory: Program/Configuration/Data	1 MB / 32 MB / 512 kB

Interface / Protocols / Certifications

CAN Bus Network	1 (ISO 11898-2 High Speed, 2.0A/B)
GSM / GPRS / EDGE class 10 [MHz]	850 / 900 / 1800 / 1900
UMTS / HSDPA six band [MHz]	800 / 850 / 900 / 1700 / 1900 / 2100
GPS Tracking capability	Concurrent GNSS engine for GPS, GLONASS, Galileo and BeiDou
GPS Accuracy [m]	3
Micro-SD Card Interface	✓ - SD/SDHC card with capacity up to 32 GB
CANopen, Layer 2, J1939	✓
Certifications	CE, E1, FCC

Additional Features

RTC Real Time Clock with Backup Capacitor	✓
3-axis accelerometer	✓

Software and Web Portal

WS System Tools	XXXXXXX
WS WebPortal	danfoss.proemion.com

Ordering Information

Telematic unit	Part numbers
WS403	11156350
Accessories	Part numbers
Antenna GSM/GPS, screw mount	11149644
Mating Connector	Part numbers
M12 5pin socket / open - 5m cable	11149645
Related products and kits	Part numbers
Remote Solution Kit WS403	11157545
CG150 CAN/USB Gateway	10104136

Reference Literature

Danfoss product literature on line at www.danfoss.com	Literature number
WS403 Remote Solution Data Sheet	L1426546
WS403 Remote Solution Technical Information	L1426375
WS403 Remote Solution Installation Guides	L1419125

Danfoss Power Solutions (US) Company
 2800 East 13th Street
 Ames, IA 50010, USA
 Phone: +1 515 239 6000

Danfoss Power Solutions GmbH & Co. OHG
 Krokamp 35
 D-24539 Neumünster, Germany
 Phone: +49 4321 871 0

Danfoss Power Solutions ApS
 Nordborgvej 81
 DK-6430 Nordborg, Denmark
 Phone: +45 7488 2222

Danfoss Power Solutions Trading (Shanghai) Co., Ltd.
 Building #22, No. 1000 Jin Hai Rd
 Jin Qiao, Pudong New District
 Shanghai, China 201206
 Phone: +86 21 3418 5200

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