

# Compu-Spread

## CS 610 Anti-Icing Liquid Controller



**Programmable integrated controller with high visibility OLED display which can function in Manual, Closed, or Open Loop control modes for precise application of liquids.**

### Features

- 5.5" organic light emitting diode (OLED) display
- On-screen display of storm and season totals
- 2 frequency inputs (ground speed, liquid)
- 1 proportional, current compensated PWM output (programmable dither freq.) for liquid
- 3 digital outputs for ball valve control
- USB key or password-protected calibration values
- Operating parameters and event data can be retrieved by an USB memory stick
- Automatic nulling and material calibration (with Closed Loop configuration only)
- Built in Recirculation mode (manual, automatic)
- AVL serial interface
- Remote Pause with detachable cable
- Solenoid and cable failure detection
- Firmware upgradable via USB

The CS-610 controller is designed for single or three boom direct liquid application of anti-icing liquids. It can be configured as manual or fully automatic mode, which utilizes flow measurement and ground speed to apply the desired volume. It has a large high contrast solid state OLED display for operator readability. A single detented rotary knob allows the operator to quickly set the rate, and a press pauses application. Five tactile buttons below allow for easy navigation in setup mode.

System setup and calibrations are accomplished with intuitive on-screen menus, and separate selection buttons. Vehicle speed and material calibration are easily setup with on screen prompts. Four liquid types can be set-up. Error messages are text defined, and are augmented by an audible alarm. The USB port provides controlled access to spreading activity totals, parameter loading/saving, as well as firmware upgrade. A serial port for diagnostics and AVL interface comes standard.

The CS-610 is built around a high performance 32-bit processor with many advanced features. All components, connectors and operating devices are industry proven, and fitted into a rugged extrusion made to withstand the rigors – and temperatures – of winter.

The CS-610 complements the Compu-Spread family of Snow & Ice Control products from Bosch Rexroth. It is ideally suited for the control of the broad range of Rexroth hydraulic valves and modules, which are widely used in these demanding applications.

## Technical Data CS-610

### General

<b>Enclosure Material</b>	Extruded aluminum, powder coated	
<b>Weight</b>	1.24 kg	6.6 lb. mass
<b>Size (excluding connectors)</b>	221 x 128 x 60.2 mm	8.692" x 5.06" x 2.377"
<b>Mechanical Mounting</b>	Ram bracket, size 1½"	

### Electrical & Environmental Specifications

<b>Supply Voltage</b>	9-32 VDC	
<b>Outputs</b>	Proportional outputs	1 channels
	Digital Outputs	4 channels
<b>Inputs</b> (All inputs protected and filtered)	Frequency Inputs	2 channels
	Switch Inputs	2 channels
	Analogue Inputs	2 channels
<b>Interfaces</b>	2 serial ports	
<b>AVL interface</b>	RS-232, Baud rate: 115200, None parity, 8 Data bit, 1 Stop bit	
<b>Operating Temperature</b>	-30°C to 85°C	-22°F to 185°F
<b>Storage Temperature</b>	-40°C to 85°C	-40°F to 185°F

### Compliant Standards

<b>Electromagnetic Compatibility</b>	100v/m, load dump	
<b>Immunity</b>	RF Immunity:	ISO 11452-2, 400-1000 MHz, 80% mod.1kHz 1 GHz—2 GHz, 80% mod. 1 kHz 25v/m (Level 1 Severity)
	Conducted Immunity:	ISO 7637-2 (2004), System Pulse 1, 2a, 2b, 3b, 4
<b>RF Emissions</b>	CISPR 25:2002-08, 30 MHz—1 GHz, according to 72/245/EC EN 55025	
<b>Electrostatic Discharge</b>	EN 61000-4-2 ISO 10605, Contact +/- 8kV, air discharge +/- 15kV	
<b>Vibration</b>	ISO 16750-3, 10-2000Hz @ 58 m/s	
<b>Shock</b>	IEC 60068-2-72, 40G for 11 ms	
<b>Moisture</b>	DIN EN 60068-2-30Db; version 2, part 2, Hum=95% 25 to -55°C	
<b>Salt Spray</b>	DIN 50021-SS, 72h 35°C 5% NaCl	
<b>Medial Resistance</b>	ISO 16750-5, cola, coffee, paint thinner	
<b>Enclosure Protection</b>	IEC 60529 IP63	

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