FloSeries3 cards for XCi devices

XCi - Multiple cards for multiple sensor applications. The XCi platform is expandable and future proof, only add cards as and when you need them.

The XCi (multiple card interface) developed by MACE for the FloPro, AgriFlo and HydroMace allows the user to connect a vast array of environmental sensors.

Users can install any combination of the MACE FloSeries3 cards shown below, in the five available card slots of an XCi device. Choose the right card/s for your application to tailor the device to your exact monitoring requirements.

Doppler card

The Doppler card provides the input for connecting MACE Doppler ultrasonic velocity sensors.

Compatible sensors:
- MACE Doppler ultrasonic insert velocity sensor
- MACE Doppler ultrasonic area/velocity sensor
- MACE Doppler ultrasonic velocity sensor

Specifications:

Each MACE Doppler ultrasonic velocity sensor is terminated with a 9-pin d-connector that plugs in to the Doppler card.

I/O (input/output) card

The I/O card supports seven sensor inputs and four control outputs including 4-20mA, voltage and digital.

The card also supplies 12V to power your add-on sensors.

Compatible sensors:
- MACE EchoFlo ultrasonic depth sensor (eg. storage, fuel tank, channel level)
- Water quality sensors (eg. pH,DO/EC)
- Weather sensors (eg. rainfall, wind speed & direction)
- Engine management (eg. temperature, pressure, RPM)
- Water sampler

Specifications:

Analogue inputs (per card)	2 X 4-20mA inputs, 12 bit resolution, accuracy 0.5% of full scale 2 X Voltage inputs (0-2.5V or 0-30V)
Analogue outputs (per card)	2 X 4-20mA outputs, 12 bit resolution, accuracy 0.5% of full scale
Digital inputs (per card)	2 X Frequency inputs, 16 bit resolution, range 0 – 65535Hz 2 X Counter inputs, range 0 – 10Hz
Digital outputs (per card)	2 X digital/pulse outputs, open collector referenced to GND, range 0 – 10Hz
Power Outputs (per card)	12Volt switched power output for 3rd party sensor power

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Pulse I/O card

The Pulse I/O card powers (+5VDC or + 12VDC) a single pulsing flow sensor and provides a pulse output.

This gives an XCi device the ability to connect to flow sensors that utilize measuring technologies such as: electromagnetic; transit-time and mechanical.

Compatible sensors:
- MACE Electromagnetic insert flow sensor
- Propeller meters
- Full bore magmeters

Specifications:

Digital input	1 x Frequency input, range 0-1000Hz, accuracy 0.5Hz
Switched sensor power	+5 VDC (50mA limit) or +12VDC (1A limit)
Digital output	1 x voltage free contact, 10Hz

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SDI-12 Master card

The SDI-12 Master card provides an XCi device with the ability to control and log SDI-12 sensors.

Compatible sensors:
- Multi-parameter water quality probe (Sonde)
- Level sensors (eg. storage, fuel tank, channel level)
- Water quality sensors (eg. pH,DO/EC)
- Weather sensors (eg. rainfall, wind speed & direction)

Specifications:

Inputs:	SDI-12 V1.3 compliant
Sensor Power:	12VDC supply

FloSI card

The FloSI card provides an SDI-12 or ModBus output to interface an XCi device to SCADA systems and radio networks.

Compatible interface:
- SCADA systems
- Radio networks
- 3rd party data loggers

Specifications:

Outputs:	MODBUS RTU, RS232, RS485
	SDI-12 V1.3 compliant
	ASCII, RS232

WebComm card

The MACE WebComm card (MWC) provides all MACE XCi devices (FloPro, AgriFlo and HydroMace) the ability to automatically upload internal logged data to the web-based MACE Data Server via mobile telephone networks.

The MACE Data Server (MDS) is integrated with the www.macemeters.com and www.maceusa.com websites, and allows easy access for retrieval of field data. Unlike "conventional" data services, MACE provides this data server free of charge to its customers (subject to MACE SLA).

Performance Specifications:

Network Interface:
The MWC utilises mobile telephony to access the internet through GSM & 3G networks.

Data Format:
The MWC uploads and stores data in an unencrypted plain text format.

Data Upload:
- All channels (and their values) that have been configured to be "logged" in the XCi device are uploaded.
- User configurable upload scheduling: 5min, 10min, 15min, 30min, 1hr, 6hr, 12hr, 24hr, 1wk, 2wk, 4wk.

Data Storage:
- Limited to 500Mb per site (defined as a single XCi device with a WebComm card installed).
- There is no limit to the number of sites a single user can have.

Data Retention:
Data is stored for a minimum of 12 months after its initial upload after which it will be deleted from the MDS.

Website Specifications:

Functionality:
- Password protection;
- Data "site" setup and maintenance;
- View site data (date/time selection available);
- View latest data record;
- Download site data (date/time selection available) in *.csv format;
- Multiple "site access". Primary user can designate secondary "users" who have access to the data (secondary users MUST also have a MACE website account);
- Email/SMS alerts (paid subscription service)

MACE Upload/Download Protocol:

For users with larger fleets of XCi devices, MACE has an HTTP upload protocol that allows the data to be directly uploaded to another data server effectively bypassing the MDS. Please contact MACE for further details.

MACE also has an HTTP "download" protocol that allows users to download their data directly from the MDS without having to directly access and login to the MACE website. This may be particularly useful for interfacing to 3rd party software packages. Please contact MACE for further details.

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