![remsdaq logo] remsdaq
EXTENDING THE BOUNDARIES OF TECHNOLOGY

Callisto nx

Utility Controller

evolution of proven technology

FEATURES

- IEC 61850
- IEC 61131 logic
- 16 DI, 6 DO as standard
- Modular I/O expansion
- 1 Ethernet, 2 serial ports as standard
- Multi-protocol support
- Powerful 32 bit RISC processor
- Embedded Linux OS
- Complete suite of diagnostic and configuration tools

The Callisto nx Utility Controller provides a foundation level standalone solution for small point count RTUs and its modular expansion facilities satisfy the largest RTU or substation automation application.

Utility Controller Features

A Callisto[nx] Utility Controller provides six expansion slots for instrumentation class AC & DC analogues, digital I/O and comprehensive IED support using a library of plug-in modules.

General:
- Cost effective compact design
- Solutions for switchgear manufacturers and system integrators
- Unique solution for distribution automation, substation automation and Smart Grid applications
- IEC 61850 compliant (Kema certified)
- Station and Bus Process support
- SOE processing to 1 ms accuracy
- IEC 61131 PILoT[nx] programmable logic
- View[nx] embedded web server
- CaSE[nx] PC based configuration tool

Technology & Performance:
- State of the art technology utilising NS9750 (Arm 9) processor working in tandem with Blackfin DSP
- In service upgradeable FLASH based boot system for upgrades on the fly

Monitoring & Watchdog:
- Comprehensive power failure detection and intelligent mechanisms to safely store critical data without the use of onboard battery technology
- External PSU hold-up facilities are also available to increase the hold-up period if necessary
- A comprehensive watchdog subsystem covers internal voltage rails, Blackfin DSP, NS9750 processor, memory and other important components

Temperature Sensor:
- Onboard temperature sensor monitors the ambient temperature to dynamically compensate temperature sensitive electronics

Control Output Enable:
- The Callisto[nx] supports a hard-wired control output enable/disable facility

Time Synchronisation:
- An integrated GPS receiver (option) provides time to ensure 1 ms time accuracy for SOE data
- Better than 5 ms/hour when not synchronised
- Time source prioritisation (GPS/master/LAN)

SD Flash:
- For data logging and storage

Terminations:
- Screwless terminals
- Screw terminal block
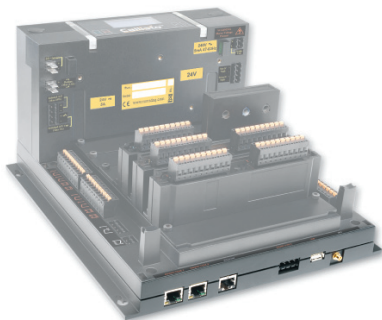- Barrier block type

Base I/O:
- 16 optically isolated digital inputs
- 6 digital outputs

Miscellaneous:
- Dummy control
- High stability voltage reference

Networked configurations utilising integral managed Ethernet switch.

Integrated Web server and programmable logic for maximum applications capability.

Integrated Communications Ports:

- 1 Ethernet port 10/100Base-T(X)
- Integral managed Ethernet switch for flexible station and process bus implementation
- 2 Isolated serial ports (1 x RS232, 1 x RS232/485)
- 1 USB Port (v 2.0)
- 1 CANbus/I^2C (mini DIN connector)

Real Time Software:

- Embedded Linux
- View^{nx}, an embedded web server which provides access to configuration, commissioning tools and diagnostics.
- PC configuration using the Callisto Software Environment CaSE^{nx}
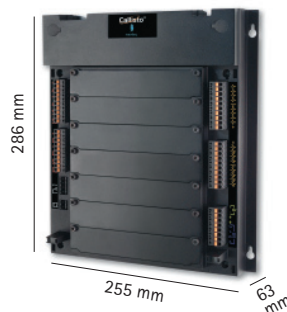- PILoT^{nx} IEC61131 logic

Memory:

- FLASH 32MB
- SDRAM 40MB (8MB of which is dedicated to the DSP)
- SD FLASH slot

Integral Power Supply:

- Integrated non isolated power supply 24V (18-40V)
- Power consumption 32W (Max)

Dimensions:

- Utility Controller (no PSU)
- Utility Controller (with PSU/cover)

286 mm

255 mm 63 mm

286 mm

255 mm 149 mm

Power Supply Features

- Options to cover all standard substation voltages
- High contrast LCD for monitoring and diagnostics
- 2 non-isolated DC analogue inputs (0-20mA)
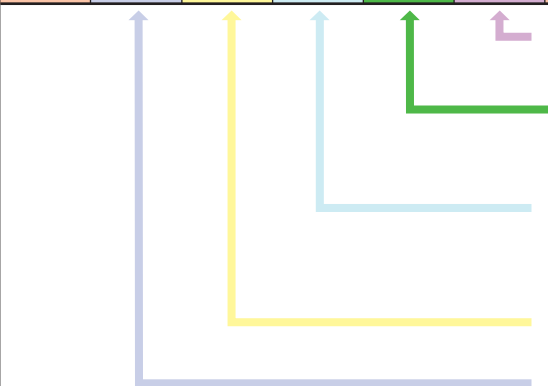- 12 bit ADC
- Accuracy 0.2% FSD (at 25°C)

Integral Intelligent Battery Charger (Option):

- Onboard temperature sensor
- Optimised charger characteristics to maximise battery lifetime
- Nominal input voltage: 48VDC (45-56V) [1]
- Maximum charge current 2.4A
- Integral wetting supply (option)
- Back-up DC supply mode
- Mains fail detection

[1] requires external AC/DC convertor for AC supply applications.

Ordering Information

Utility Controller:

Product Range	Product Code	Type	Opt 1	Opt2	Opt 3	Options		
CX	BU	xxx	xxx	xxx	x			

S	Screwless Terminals	
T	Screw Terminals	
B	Barrier-Block Terminals	

S	No GPS	
GPS	GPS	

012	12V DC (nominal) Digital Inputs (Max 18V, On 8V, Off 5V)*	
024	24V DC (nominal) Digital Inputs (Max 36V, On 16V, Off 12V)*	
048	48V DC (nominal) Digital Inputs (Max 72V, On 30V, Off 24V)*	
110	110V DC (nominal) Digital Inputs (Max 170V, On 65V, Off 50V)*	
220	220V DC (nominal) Digital Inputs (Max 300V, On 150V, Off 85V)*	

S	Standard	
NAC	No AC Analogues	
850	IEC 61850 (includes AC Analogues)	

BU	Base Processing Node	

*Guaranteed on/off voltages

Power Supply:

Product Range	Product Code	Type	Opt 1	Opt2	Opt 3	Options		
CX	PS	xxx	xxx	xxx	x			

S	Screwless Terminals	
T	Screw Terminals	
B	Barrier-Block Terminals	

BC	110	110V AC Mains Fail Detection
	240	240V AC Mains Fail Detection
Other	X	Option Not Applicable

BC	S	Standard (None)
	012	12V DC Isolated Wetting Output (-10 to +70 degrees C)
	024	24V DC Isolated Wetting Output (-10 to +70 degrees C)
	048	48V DC Isolated Wetting Output (-10 to +70 degrees C)
I	012	10-20V DC Isolated Supply (-10 to +70 degrees C)
	024	18-36V DC Isolated Supply (-10 to +70 degrees C)
	048	36-76V DC Isolated Supply (-10 to +70 degrees C)
	110	66-160V DC Isolated Supply (-10 to +70 degrees C)
	125	82-185V DC Isolated Supply (-10 to +70 degrees C)
	220	100-375V DC Isolated Supply (-10 to +70 degrees C)
ILT	012	10-20V DC Isolated Supply (-40 to +70 degrees C)
	024	18-36V DC Isolated Supply (-40 to +70 degrees C)
	048	36-76V DC Isolated Supply (-40 to +70 degrees C)
	110	66-160V DC Isolated Supply (-40 to +70 degrees C)
	125	82-185V DC Isolated Supply (-40 to +70 degrees C)
	220	100-375V DC Isolated Supply (-40 to +70 degrees C)
NI	024	20-40V DC Non-Isolated Supply (-40 to +70 degrees C)

BC	Battery Charger/Backup DC (-40 to +70 degrees C)	
I	Isolated DC (Standard -10 to +70 degrees C)	
ILT	Isolated DC (Low Temp -40 to +70 degrees C)	
NI	Non-Isolated DC (-40 to +70 degrees C)	

PS	Power Supply Unit	