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Orion I/O Upgrade Assemblies for D20 I/O Modules

The NovaTech Orion I/O is now available in factory pre-wired assemblies to replace D20 I/O modules. For D20 modules with DB25 or "Disconnect" style connectors, replacement can be accomplished without any re-wiring. For D20 I/O modules with "Barrier" or "Compression" style connectors, existing wires can be re-landed to the same terminal location.

The Orion I/O D20 Upgrade Assembly for the D20SD module is shown below in Figures 1 and 2.



Figure 1: Front view of the Orion I/O Upgrade Assembly for the D20SD module



Figure 2: Rear view of the Orion I/O Upgrade Assembly for the D20SD module

I/O status buttons can be user-configured to display point name and point state. The Event Time is also displayed, as seen in Figure 3 (to the right).

To simplify maintenance and diagnostics, the 4 x 20 line display can also annunciate time quality, active configuration, serial number, and firmware version.

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Upcoming Training & Events

Upcoming Scheduled Courses:

OrionLX/OrionLXm Automation Platform

September 6-7, 2017	Lenexa, KS	K700
November 11-16, 2017	Lenexa, KS	K700

For complete course descriptions, please visit our website http://www.novatechweb.com/substationautomation/training/

Upcoming Symposium

Denver Technical Symposium August 23-24, 2017 Please contact Chuck Englebrecht at 303.886.2402 or charles.englebrecht@novatechweb.com for details.

Tradeshow and Papers

PAC World Conference, Raleigh, NC August 29-31, 2017

Two NovaTech-authored papers will be presented during the conference : "RTU and HMI Redundancy in Electrical Substations" by Ray Wright

"`Large-scale Device Simulation' or `But...will it work?" by Bruce Muschlitz

Latest Software

OrionLX Release: 8.8 Orion NCD3 Version: 3.30 Bitronics M87x firmware: v4.15 Bitronics 70 Series Configurator: v4.14 Bitronics 50 Series Firmware: v3.13 Bitronics 60 Series Firmware: v2.21 Bitronics PowerPlex II Firmware: v2.23 **BiView:** v3.06

DB25 connectors wired to Orion I/O input cards

Wetting Power Supply



Figure 3: Built-in 4 x 20 character display

The wide variety of D20 module styles and connector styles can be accommodated by Orion I/O Upgrade Assemblies comprising of combinations of three Orion I/O cards: the 16 DI Card, 16 DO Card and 8 AI card, each wired up to match the D20 module style.

Table 1 below summarizes the D20 module types and the corresponding Orion I/O Upgrade Assemblies.

D20 Module	Description	Termination Type	Orion I/O Assembly Name	Orion I/O Cards Included	
D20A	32 AI STD	Compression	Orion I/O-AC-19	(4) 8-PT AI Cards	
D20AD	32 AI	DB25	Orion I/O-AD-19	(4) 8-PT AI Cards	
D20AX	32 AI	Disconnect	Orion I/O-AX-19	(4) 8-PT AI Cards	
D20AB	32 AI	Barrier	Orion I/O-AB-19	(4) 8-pt Al Cards	
D20AZ	32 AI HV	Compression	Orion I/O-ACZ-19	(4) 8-PT AI Cards	
D20S	64 DI STD	Compression	Orion I/O-SC-19	(4) 16-PT DI Cards	
D20SD	64 DI	DB25	Orion I/O-SD-19	(4) 16-PT DI Cards	
D20SX	64 DI	Disconnect	Orion I/O-SX-19	(4) 16-PT DI Cards	
D20SB	64 DI	Barrier	Orion I/O-SB-19	(4) 16-PT DI Cards	
D20SZ	64 DI HV	Compression	Orion I/O-SCZ-19	(4) 16-PT DI Cards	
D20K	32 DO (16 T/C) STD	Compression	Orion I/O-KC-19	(2 to 4) 16-PT DO Cards	
D20KR	32 DO (16 T/C)	DB25	Orion I/O-KD-19	(2 to 4) 16-PT DO Cards	
D20KX	32 DO (16 T/C)	Disconnect	Orion I/O-KX-19	(2 to 4) 16-PT DO Cards	
D20KB(?)	32 DO (16 T/C)	Barrier	Orion I/O-KB-19	(2 to 4) 16-PT DO Cards	
D20K4Z	32 DO (16 T/C) HV	Compression	Orion I/O-KCZ-19	(2 to 4) 16-PT DO Cards	
D20C	16 DI, 16 DO (8 T/C), 16 AI STD	Compression	Orion I/O-CC -19 (-D0 if DB25 on outputs)	(1) DI Card, (1) DO Card, (2) AI Cards	
D20CD	16 DI, 16 DO (8 T/C), 16 AI	DB25	Orion I/O-CD-19 (-D0 if DB25 on outputs)	(1) DI Card, (1) DO Card, (2) AI Cards	
D20CX	16 DI, 16 DO (8 T/C), 16 AI	Disconnect	Orion I/O-CX-19 (-D0 if DB25 on outputs)	(1) DI Card, (1) DO Card, (2) AI Cards	
D20CB	16 DI, 16 DO (8 T/C), 16 AI	Barrier	Orion I/O-CB-19 (-D0 if DB25 on outputs)	(1) DI Card, (1) DO Card, (2) AI Cards	
D20CC4Z	16 DI, 8 DO, 16 AI HV	Compression	Orion I/O-CZ-19 (-D0 if DB25 on outputs)	(1) DI Card, (1) DO Card, (2) AI Cards	

Table 1: Cross-reference table showing D20 module type and corresponding Orion I/O Upgrade Assembly

To complete an upgrade of a D20 RTU system, the OrionLX Automation Platform can replace the D20 CPU. The NovaTech System and Services group offers services to convert the D20 configuration to an OrionLX configuration. The conversion steps are outlined in the Application Note "Converting D20 Configurations to OrionLX Configurations," available upon request.

To download a copy of the datasheet, "Orion I/O Upgrade Assemblies for D20 I/O Modules," please visit our website:

www.novatechweb.com/orionio_upgrade

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	Tec	hnical Not
Abstract Configurations for th and D20ME and D2 to an OrionUX confi	e D20 / D200 (Models D20M, D20M+, D20M++ 00 with part numbers 554-3000) can be converted guration. This only summarizes conversion steps.	
Knowledge Areas RTU applic	ation, D20 / D200 RTU, OrionLX, NCD	
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South African Partnership

NovaTech recently entered into a partnership with ACTOM, based in South Africa. ACTOM is the largest manufacturer and solution provider of electric and electromechanical equipment in Africa with divisions for protection and control, high voltage equipment, medium voltage and protection, and transformers. ACTOM is replacing its current substation automation suppliers with NovaTech and its relay suppliers with Arcteq of Finland which was started by former Vamp relay engineers. Reasons for the change include better technical features, easier use, and superior technical support.

The partnership covers South Africa as well as the neighboring countries of Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia, and Zimbabwe. ACTOM's project reach extends further into Angola, Ethiopia, Kenya, Tanzania, and Uganda.

Stayed tuned for more on this partnership. We are now jointly bidding on two large projects; one with 100 RTUs and the other with 200 RTUs.

New Split-Core CT Option in M872

Providing Quick and Economical Solution in Recording and Automation Upgrade Applications

As detailed in previous TechTalk articles, the M871 and M872 recorders offer a great solution for automation upgrades where electromechanical relays are employed, and for compliance with Dynamic Monitoring Equipment (DME) requirements in PRC-002-2. In these applications, "split-core" CT technology reduces installation time, and does not require an outage. Now, both the M871 and M872 recorders can be ordered with a split-core CT option.

The M872 with split-core CTs ("S2C" signal input module) covers two sets of lines or feeders with six voltage and six current inputs, reducing the solution cost per feeder. The Bitronics design uses a rugged split-core CT with 100A primary rating --made in the USA-and ideal for fault recording duty. Highest possible accuracy is assured through factory calibration of the "system" comprising of the set of split-core CTs with the M872. Calibration constants are stored in non-volatile M872 memory, and also printed to labels affixed to the CTs. If CTs are replaced, the new calibration constants are entered into the M872. As a result, the accuracy of our split-core solution is quoted as the same as our hard-wired CT solution.

Standard split-core lead length is 25 feet and special, longer lengths can be made. These long leads mean that the M872 does not need to be mounted in the immediate vicinity of the 5A CT circuits. This makes access to two sets of feeder CTs much easier. Split-core CT mounting brackets are available as an accessory. Brackets bolt to any flat surface, and the splitcore CT attaches to the bracket with two screws.



Berno Matthaeus presents at the African Utility Week Conference



M872 with Split-Core CTs and two D650 displays in a panel assembly

