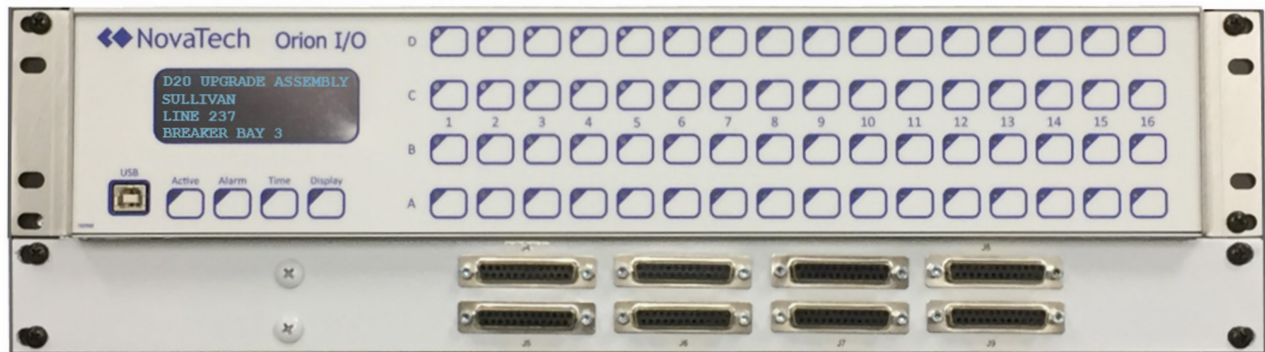
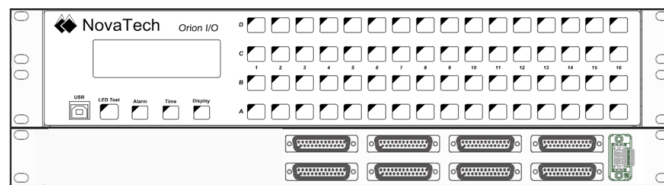


Orion I/O D20 Upgrade Assemblies

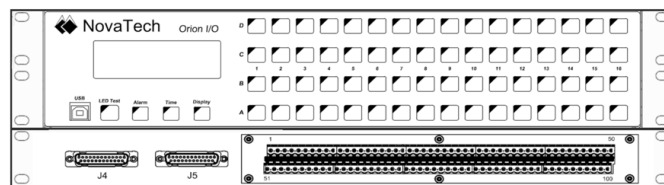


Product Description

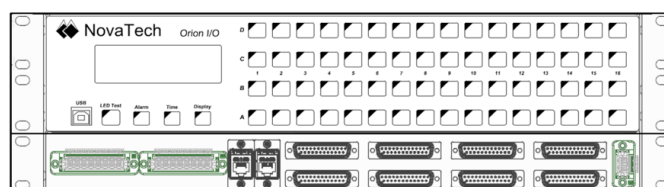
The pre-wired and tested Orion I/O D20 Upgrade Assemblies comprise of an Orion I/O equipped with I/O Cards, bracketing, internal interconnection wiring and connectors. For D20 modules with DB25 or “Disconnect” style connectors, replacement of the D20 module can be accomplished without any re-wiring. For D20 I/O modules with “Barrier” or “Compression” style connectors, existing wires can be re-landed to the same physical terminal location. Orion I/O D20 Upgrade Assemblies replace the D20A Analog Input, D20S Status Input, D20K Control Output and D20C Combination Input / Output cards. Upgrade Assemblies are available in 19” rack mount configurations and panel mount (surface mount) configurations. The high density of the Orion I/O (up to 64 DI in 2 RU and up to 32 AI in 2 RU) enables the Upgrade Assemblies to occupy the same vertical panel real estate as the replace D20 modules, although additional forward or rearward depth is required. Upgrade Assemblies are produced to replace the specific models of D20 I/O. Three Upgrade Assemblies are shown below in Figure 1:



Upgrade Assembly for D20SD
with DB25 Connectors
and 19” Rack Mount



Upgrade Assembly for D20C
with Compression Connectors
and DB25 connectors for cabling to
D20KI/KI2 interposer relay panel
and 19” Rack Mount

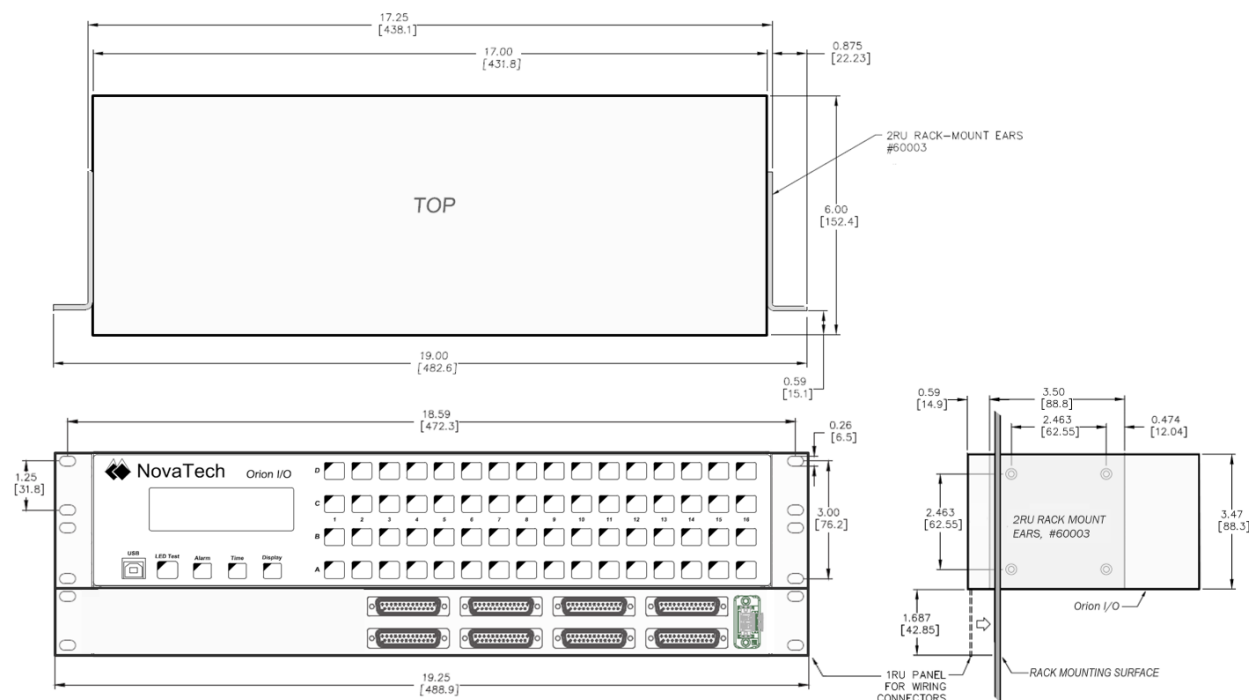


Upgrade Assembly for D20SD
with DB25 Connectors
and Surface Mount

Figure 1 Three Orion I/O Upgrade Assemblies for three models of D20 I/O

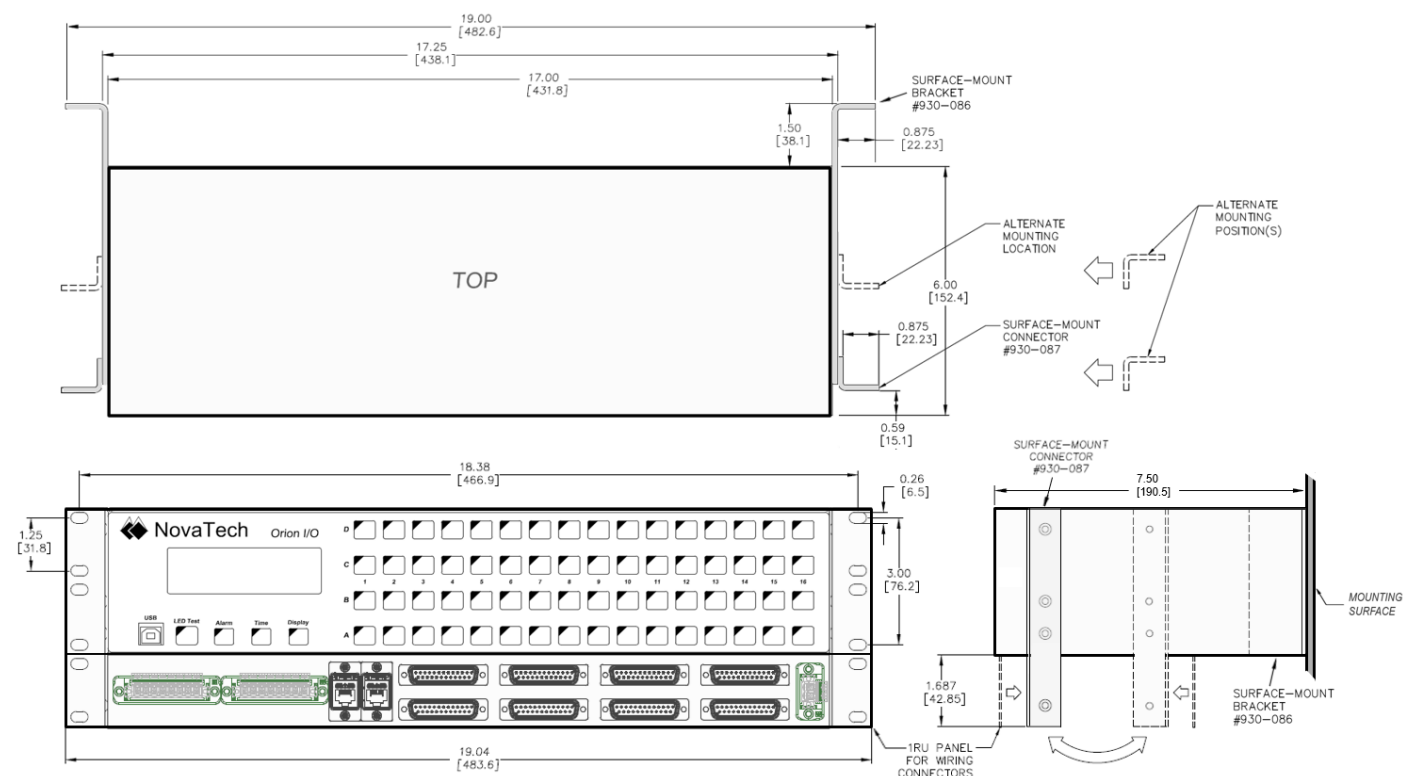
Orion I/O D20 Upgrade Assembly for 19" Rack Mount

Field wiring connectors on the Orion I/O are wired to connectors on a one (1) RU plate in the same locations as on the replaced D20 module. An unmodified Orion I/O module is used in this upgrade assembly. See diagrams below for front view, top view and side view of an Upgrade Assembly for the D20SD module (64 Status Inputs, DB25 connectors):



Orion I/O D20 Upgrade Assembly for Panel Mount (Surface Mount)

Rear connectors for Ethernet, serial comms and IRIG B are brought out to the front and mounted on a one (1) RU plate, along with field wiring connectors in the same position as on the replaced D20 module; all connectors and operator interface are from the single front face. An unmodified Orion I/O module is used in this upgrade assembly. See diagrams below for front view, top view and side view of an Upgrade Assembly for the D20SD module (64 Status Inputs, DB25 connectors):



Available Upgrade Assemblies

The table below summarizes the upgrade assemblies available, and the model numbers.

D20A Analog Input and Connector Style	Corresponding Orion I/O D20 Upgrade Assembly	Orion I/O Cards included	Mounting Options	Upgrade Assembly Notes
D20A Compression D20AX Disconnect D20AB Barrier D20AD DB25	[Orion I/O #]-ADS-xxxx [Orion I/O #]-ADS-xxxx [Orion I/O #]-ABA-xxxx [Orion I/O #]-ADB-xxxx x = analog input range: "V" for +/- 10V "A" for -2 to +2mA "4" for 4-20mA	(4) 8-PT AI Cards	Add to model #: "PF" for Panel Mount, Bracket fwd. "PR" for Pnl Mount, Bracket rear "RK" for 19" rack mount	three analog input ranges: +/-10V, -2 to +2mA or 4-20mA Each of the four 8-PT AI Cards can be a different analog input range (e.g. "VAA4")
D20K Control Output and Connector Style	Corresponding Orion I/O D20 Upgrade Assembly	Orion I/O Cards included	Mounting Options	Upgrade Assembly Notes
D20K Compression..... D20KX Disconnect..... D20KR DB25.....	[Orion I/O #]-KDS-x [Orion I/O #]-KDS-x [Orion I/O #]-KDB-x x = Future	(2) 16-PT DO Cards	Add to model #: "PF" for Panel Mount, Bracket fwd. "PR" for Pnl Mount, Bracket rear "RK" for 19" rack mount	Form A NO (normally open) outputs.
D20S Status Input and Connector Style	Corresponding Orion I/O D20 Upgrade Assembly	Orion I/O Cards included	Mounting Options	Upgrade Assembly Notes
D20S Compression..... D20SX Disconnect..... D20SB Barrier..... D20SD DB25.....	[Orion I/O #]-SDS-x [Orion I/O #]-SDS-x [Orion I/O #]-SBA-x [Orion I/O #]-SDB-x x = wetting voltage "S" for sourced by card "X" for externally sourced	(4) 16-PT DI Wetted Card or (4) 16-PT DI (non-wetted) Card	Add to model #: "PF" for Panel Mount, Bracket fwd. "PR" for Pnl Mount, Bracket rear "RK" for 19" rack mount	Wetted Card generates and sources 24V dc or 48V dc, s/w selectable. For non-wetted, "Low Range 12-48V dc" or "High Range 125V dc" is a s/w selection. 220V dc not supported.
D20C Combination I/O and Connector Style	Corresponding Orion I/O D20 Upgrade Assembly	Orion I/O Cards included	Mounting Options	Upgrade Assembly Notes
D20C Compression..... D20CX Disconnect..... D20CB Barrier..... D20CD DB25.....	[Orion I/O #]-CDS-xyz [Orion I/O #]-CDS-xyz [Orion I/O #]-CBA-xyz [Orion I/O #]-CDB-xy x = wetting voltage "S" for sourced by card "X" for externally sourced y = analog input range: "V" for +/- 10V "A" for -2 to +2mA "4" for 4-20mA Z = DB25 connectors for cabling to D20KI/KI2 interposer relay panel "D" for DB25 "x" for no DB25 conn.	(1) 16-PT DI Card (standard or Wetted), (1) 16-PT DO Card (1) or (2) 8-PT AI Cards	Add to model #: "PF" for Panel Mount, Bracket fwd. "PR" for Pnl Mount, Bracket rear "RK" for 19" rack mount	Wetted Card generates and sources 24V dc or 48V dc, s/w selectable. For non-wetted, "Low Range 12-48V dc" or "High Range 125V dc" is a s/w selection. 220V dc not supported. Form A NO (normally open) outputs. three analog input ranges: +/-10V, -2 to +2mA or 4-20mA The 8 Analog Outputs on the C2 Daughter Board on the D20C module not supported.

The solution is not intended to replace the following D20 I/O system components:

- The D20AC module (up to 15 direct AC inputs and 1 DC analog input)
- The 20KI Interposing relay panel. The Orion I/O conversion solution is designed to interface to this panel using existing wiring and connectors.

Example Model Number for Orion Upgrade Assemblies

Example #1:

Orion I/O-SX-2E-3022-AD-WR-42-44-CDB-SAD-PF

SX - Standard one serial RS-232/485 port only

2E - Standard two copper ports, two NICs

3 - 16 DI Wetted Card

0 - 16 DO Card

2 - 8 AI Card

2 - 8 AI Card

AD - Advanced User Interface

WR - Standard 48-250V dc and 69-240V ac nominal

42 - DNP3 Serial Slave

44 - DNP IP Slave

CDB – Upgrade Assembly for D20CD Combination Module with DB25 connectors

S – Wetting voltage sourced by card

A – -2 to +2mA Analog Inputs

D – DB25 connector to D20KI/KI2 outboard interposer relay panel

PF – Panel Mount, connector bracket in forward position

Example #2:

Orion I/O-SX-2E-1111-SD-WR-42-44-49-99-SDS-X-RK

SX - Standard one serial RS-232/485 port only

2E - Standard two copper ports, two NICs

1 - 16 DI Card

1 - 16 DI Card

1 - 16 DI Card

1 - 16 DI Card

SD - Standard User Interface

WR - Standard 48-250V dc and 69-240V ac nominal

42 - DNP3 Serial Slave

44 - DNP IP Slave

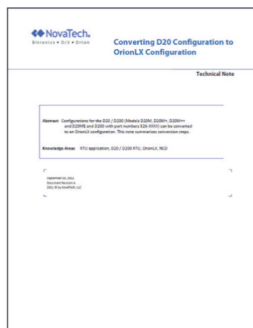
49 - Modbus TCP/IP Server

Software:

99 - Advanced Math & Logic

SDS – Upgrade Assembly for D20SD Status Module with Disconnect connectors

X – Wetting voltage externally sourced



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.



novatechautomation.com



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