

District Energy Connection - Building Requirements

To facilitate the fabrication and installation of the Energy Transfer Station (ETS) and Distribution System (DPS), the following are the building requirements that must be in place prior to connection and commissioning:

1. Completed peer review on building permit or most up to date building design information;
2. Concrete coring for DPS supply and return piping and two 50mm communication conduits to be completed by the building general contractor in accordance with the drawings provided by the building mechanical consultant – Final location and size of DPS core holes to be confirmed with Corix prior to installation;
3. Upon completion of all coring and installation of DPS and communication conduits, the building general contractor is to perform and complete sealing and waterproofing of all foundation penetrations. Timing to be coordinated with Corix;
4. Valves and pull boxes are normally installed immediately after the penetration inside the building. Access to these valves and pull boxes must be maintained at all times without confined space constraints;
5. Pre-determined location with a minimum access opening dimension of 2.0m (6' 7") high x 1.8m (6') wide to the mechanical room for installation and placement of ETS equipment; a housekeeping pad is not required.
 - a. The maximum dimensions for an ETS are 4.11m L x 1.83m W x 2.13m H;
 - b. A minimum 1.0m of clearance is required on the front and electrical panel side of the ETS and 300mm on the other two sides when it is placed in its final location;
6. Outside air temperature sensor:
 - a. One dedicated 20mm (3/4") EMT conduit (c/w pull string and #18 AWG TP Stranded 600V cable) from mechanical room to a serviceable location on the north facing outside wall for the Outside Air Temperature sensor (OAT). OAT sensor location to be approved by Corix. Architect and/or Mechanical consultant to determine the appropriate routing of the conduit, and to provide the required specification and/or site instruction to the building contractors. The conduit provided must be sufficient, by Code to overcome resistance by distance for wire pulls. Sensor will be supplied and installed by Corix, associated conduit and wiring to be done by building contractor. (See attached *Electrical Field Wiring Scope of Work* and *Corix Outside Air Temperature Sensor - Installation Requirements*);
 - b. Building Contractor to work with Corix to ensure the exterior detail is not compromised and meets Architectural detail requirements. A transition mounting box will be supplied and installed by Corix;
7. Current switches for building pump status:
 - a. Building Contractor will supply and install a Current Transducer (CT) on one of the available motor leads for each pump that delivers flow through the ETS. A VFD contact can be used where applicable. Building contractor to provide all associated conduit and wiring between pump motors and ETS control panel. See attached *Electrical Field Wiring Scope of Work*;
8. One dedicated 15 amp 120V, 60 Hz, single-phase electrical service (c/w lockable breaker switch) connected to a junction box (installed by Corix) on the ETS skid. Corix will require a copy of the Building Permit for electrical related permits/inspections associated with ETS installation;
9. One dedicated 25mm water service connection inside of mechanical room. One dedicated line for use by Corix for initial filling and operational system make-up on ETS if required;
10. A floor drain located within 1.0m (not under) the ETS location within mechanical room;
11. Mechanical room shall be ventilated as required by Code and heated during the winter to a minimum of 15°C and cooled during the summer to a maximum of 35°C;
12. Certification under seal from the building engineer in letter format confirming the building system has been designed, constructed and installed in full compliance with the specifications approved and agreed to in the Final Thermal Energy Deliver Parameters schedule. The flushing and cleaning reports must accompany the letter.

ELECTRICAL FIELD WIRING SCOPE OF WORK:

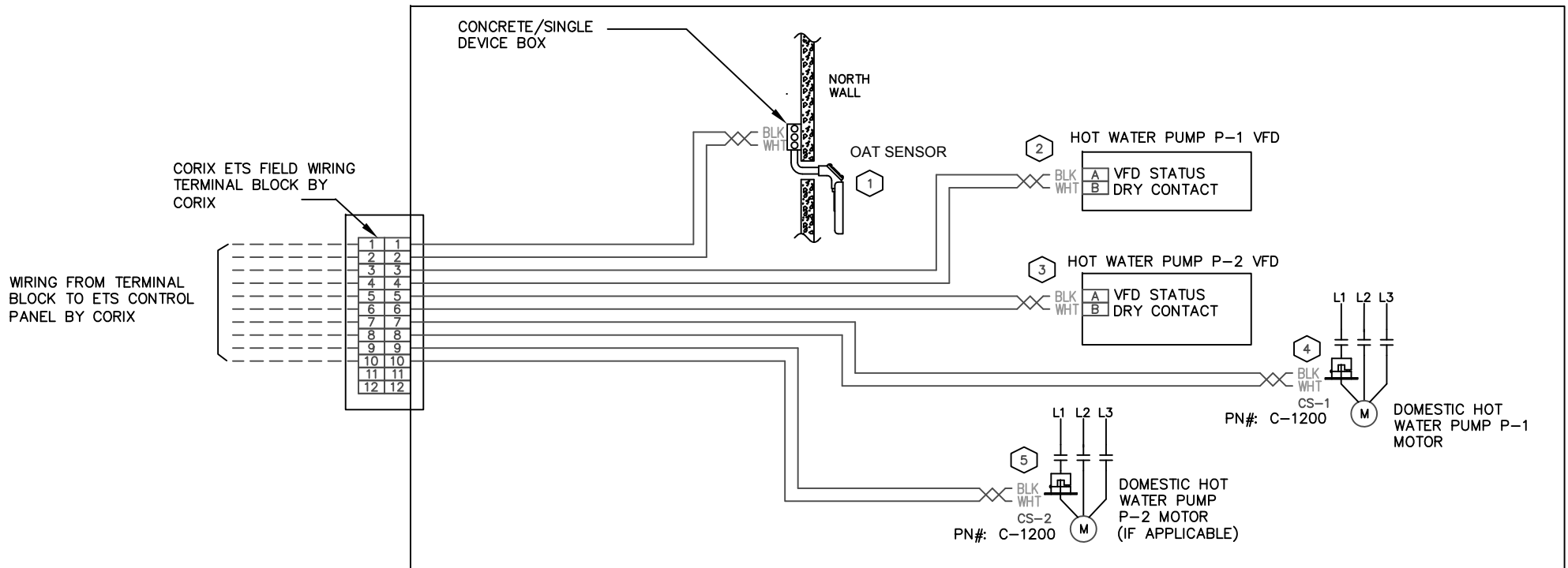
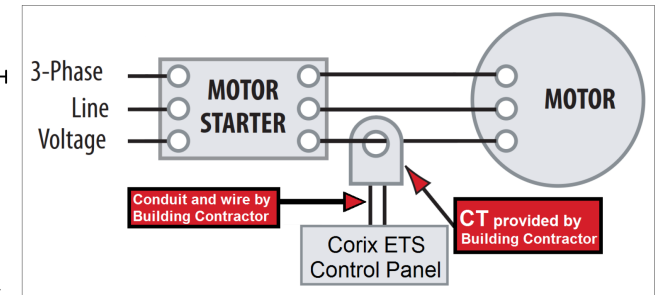
ETS FIELD WIRING REQUIREMENTS BY BUILDING ELECTRICAL CONTRACTOR.

PROVIDE CONDUIT RACEWAY AND WIRING FROM THE CORIX ETS STATION FIELD TERMINAL BLOCK.

- ① OUTDOOR TEMPERATURE SENSOR – CONDUIT FROM TERMINAL BLOCK TO A RECESSED SINGLE GANG BOX LOCATED ON THE NORTH SIDE OF THE BUILDING TO SUIT EXTERIOR FINISH C/W #18 AWG TP STRANDED CABLE, 600V CABLE.
- ② HOT WATER PUMP #1 VSD STATUS – CONDUIT FROM TERMINAL BLOCK TO VSD DRIVE LOW VOLTAGE SECTION C/W #18 AWG TP STRANDED CABLE, 600V CABLE.
- ③ HOT WATER PUMP #2 VSD STATUS – CONDUIT FROM TERMINAL BLOCK TO VSD DRIVE LOW VOLTAGE SECTION C/W #18 AWG TP STRANDED CABLE, 600V CABLE.
- ④ DHW PUMP #1 STATUS – CONDUIT FROM TERMINAL BLOCK TO PUMP STARTER C/W #18 AWG TP STRANDED CABLE, 600V CABLE.
- ⑤ DHW PUMP #2 STATUS – CONDUIT FROM TERMINAL BLOCK TO PUMP STARTER C/W #18 AWG TP STRANDED CABLE, 600V CABLE.

NOTE: OUTDOOR TEMPERATURE SENSOR TO BE PROVIDED AND INSTALLED BY CORIX

PUMP STATUS MUST BE PROVIDED FOR ALL PUMPS THAT DELIVER FLOW THROUGH THE ETS, REGARDLESS OF THE NUMBER SHOWN IN THE EXAMPLE DIAGRAM BELOW



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Corix Outside Air Temperature Sensor – Installation Requirements

Corix will supply and install the Outside Air Temperature (OAT) sensor. Prior to installation, Corix requires the building contractor to provide a connection point suitable for the sensor to be installed, and the conduit and wire from that point to the Corix Energy Transfer Station (ETS). The conduit is to be connected to the top of the main control panel on the ETS, and wire pulled into that panel. Final termination of the wire will be done by Corix at the sensor location and inside the panel.

The conduit provided shall be dedicated for the OAT sensor wire alone. Conduit shall be 20mm (3/4") EMT, reduced to 1/2" conduit at the OAT sensor connection point.

The wire shall be #18 AWG twisted pair, stranded 600V cable.

The connection point for the OAT sensor must be on an exterior North-facing wall in a serviceable location (accessible by foot or by step ladder). The location must be clear of foliage and exhaust from vents or vehicles. The sensor should be in a location with good air flow and not in direct sunlight for the majority of the day. Selecting a location that does not meet this criteria may have a negative impact on the heating performance of the building.

The OAT sensor that is provided comes with a junction box that can be mounted directly to the building or on a protruding conduit. There is a 1/2" conduit connection in the back of the sensor. The 3/4" conduit shall be reduced to 1/2" for the sensor to be connected. If a box is necessary for rough-in, a 4" round box is preferred over a 4x4 square junction box. All finishes around the OAT sensor are to be completed by building contractor and are not to interfere with the performance of the sensor.

This sensor, conduit and wire must be installed prior to commissioning the ETS and building hot water systems.

Figure 1: Outside Air Temperature (OAT) Sensor

