

## Developer-Provided Requirements for District Energy Connection

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

1. Completed a DE Compatibility review with Corix using the building permit 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. After 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 2032mm (80") high x 1800mm (71") wide to the mechanical room for installation and placement of ETS equipment.
  - a. The maximum dimensions to allow for an ETS are 4110mm L x 1750mm W x 2000mm H.
  - b. A minimum 1.0m of clearance is required on the front (long face) and electrical panel side of the ETS and 300mm on the back and other side when it is placed in its final location.
  - c. A minimum 610mm (24") of clearance is required on the top of the ETS skid for total headroom of 2610mm.
  - d. A housekeeping pad is not required for the ETS and will not be permitted.
6. One dedicated 20mm (¾") EMT conduit (c/w pull string and #18 AWG TP Stranded 600V cable) from mechanical room to a serviceable location (approved by Corix ) on the north facing outside wall for the Outside Air Temperature (OAT) sensor. Architect and/or mechanical consultant to determine the appropriate routing of the conduit, and to provide the required instructions to the appropriate building contractor who will install the junction box (if applicable), conduit, wiring and surrounding finishes. The OAT sensor is supplied and installed by Corix. See *Outside Air Temperature Sensor Installation Requirements* below.
7. Current sensors (on/off) for each building pump that provides flow through the ETS, installed between the pump motor and the starter, and the associated conduit and wiring between the sensor and the ETS control panel. A VFD contact can be used rather than an available motor lead where applicable. See attached Electrical Field Wiring Scope of Work.
8. One dedicated 15A, 120V, 60Hz, single-phase electrical service (c/w wall-mounted lockable switch) connected to the existing 100mm x 100mm junction box (installed by Corix) mounted on the ETS skid. The lockable disconnect is not to be mounted on the ETS. Corix will require a copy of the Building Permit and electrical-related permits/inspections associated with ETS installation.
9. One 19mm (¾") water service connection inside of mechanical room (hose bib) for use by Corix.
10. A floor drain located within 1.0m (not underneath) of the ETS location, within the 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. All connections to the ETS for Domestic Hot Water shall be made using dielectric gaskets and bolts.
13. Bypasses are to be installed immediately before all piping connections to the ETS to accommodate flushing and chemical cleaning of building piping. Flushing and chemical cleaning is not permitted through the ETS and must be completed prior to commissioning the ETS with the ETS valves remaining closed.
14. 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 Delivery Parameters schedule. Flushing and cleaning reports must accompany the letter.

## 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, wire and pull string from that point to the Corix Energy Transfer Station (ETS). 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 and not in landscape irrigation zones. The sensor should be in a location with good airflow 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 conduit will connect to an existing junction box on the ETS frame by the control panel. Sufficient slack wire and pull string will be left coiled in the junction box for Corix to make the final connection inside the control panel.

The conduit provided shall be dedicated for the OAT sensor wire alone. Conduit shall be 20mm (3/4") EMT, with watertight (NEMA 4) connections at both ends, and reduced to 1/2" conduit at the exterior OAT sensor connection point. The conduit provided must be sufficient, by Code to overcome resistance by distance for wire pulls.

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

The OAT sensor can be mounted directly to a 1/2" protruding conduit (extend from the interior pull box at North wall) or a 4" round junction box mounted flush with the building exterior. All finishes around the OAT sensor and connection are to be completed by the building contractor and are not to interfere with the sensor's performance.

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

Figure 1: OAT Sensor Weather Tight (EU) Enclosure

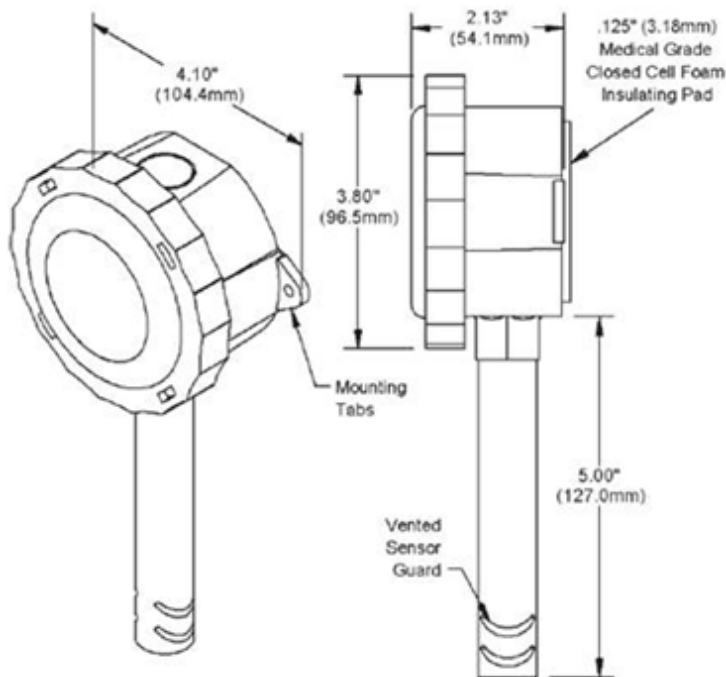
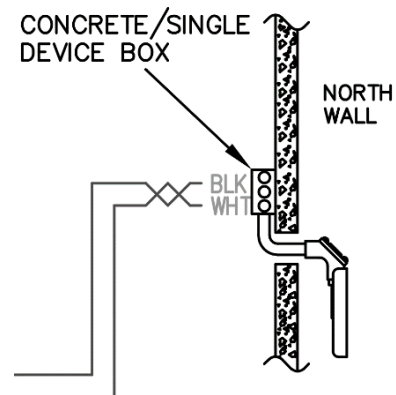


Figure 2: OAT Sensor Mounting Diagram

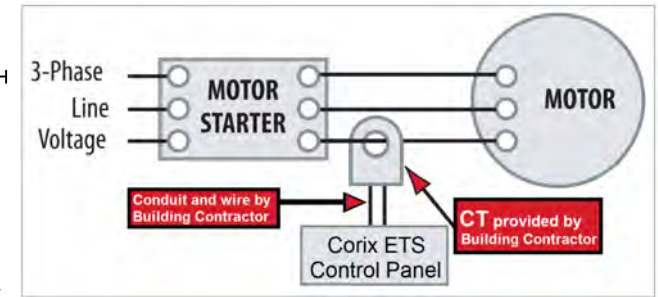


ELECTRICAL FIELD WIRING SCOPE OF WORK:

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

