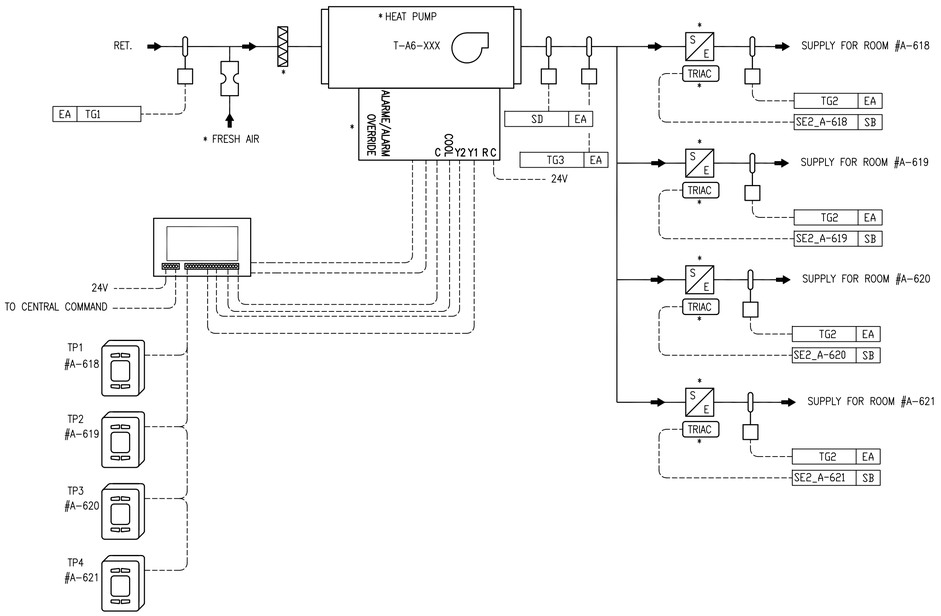


* : PROVIDED BY OTHERS

CONTROL DIAGRAMME
HEAT PUMP WITH FOUR HEATING COILS, ROOMS A-618 TO A-621

ÉCH : NONE

SEQUENCE OF OPERATIONS

SYSTEM OFF:

- HEAT PUMP IS NOT IN OPERATION.
- ELECTRIC COILS ARE NOT IN OPERATION.

SYSTEM ON:

- CENTRAL COMMAND ALLOWS THE SYSTEM TO FUNCTION ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE TEMPERATURE SENSOR IN THE RETURN DUCT (TG1) MEASURES THE AVERAGE ROOM TEMPERATURE.
- THE HEAT PUMP VENTILATOR CONTINUALLY OPERATES AT LOW SPEED (MINIMUM OF FRESH AIR).
- THE CONTROLLER ADJUSTS THE SENSOR'S (TG1) SET POINT IN ORDER TO MAINTAIN THE AVERAGE TEMPERATURE OF ALL FOUR THERMOSTATS (TP1, TP2, TP3 AND TP4).
- THE TEMPERATURE SENSOR (TG1) CONTROLS THE HEAT PUMP IN ORDER TO MAINTAIN THE DESIRED SET POINT IN EACH ROOM.
- EACH ROOM'S THERMOSTAT CONTROLS THE ELECTRIC DUCT COIL FOR THAT ROOM.
- THE AIRFLOW SENSOR INDICATES CENTRAL COMMAND'S AIRFLOW (AIRFLOW READING ONLY).
- THE DUCT TEMPERATURE SENSOR (TG3) MONITORS THE TEMPERATURE OF THE AIR SUPPLY AT THE HEAT PUMP'S EXIT (TEMPERATURE READING ONLY).
- THE DUCT TEMPERATURE SENSOR (TG2) MONITORS THE TEMPERATURE OF THE AIR SUPPLY TO THE DIFFUSERS.

REQUESTING AIR-CONDITIONING:

- CENTRAL COMMAND ALLOWS THE SYSTEM TO OPERATE ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE TEMPERATURE SENSOR IN THE RETURN DUCT (TG1) CONTROLS THE HEAT PUMP IN ORDER TO MAINTAIN THE DESIRED SET POINT.
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO SET THE POSITION OF THE REVERSIBLE VALVE TO "COOL".
- CENTRAL COMMAND AVERAGES THE TEMPERATURES OF RETURNING AIR USING RETURN DUCT SENSOR (TG1).
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO START THE FIRST STAGE OF AIR-CONDITIONING (Y1).
- THE COMPRESSOR TURNS ON.
- IF THE TEMPERATURE IN THE ROOM DOES NOT GO DOWN AFTER FIVE MINUTES, CENTRAL COMMAND STARTS THE SECOND STAGE OF AIR-CONDITIONING (Y2).
- THE THERMOSTAT IN EACH ROOM CONTROLS THE ELECTRIC DUCT COIL FOR THAT ROOM.

REQUESTING HEAT:

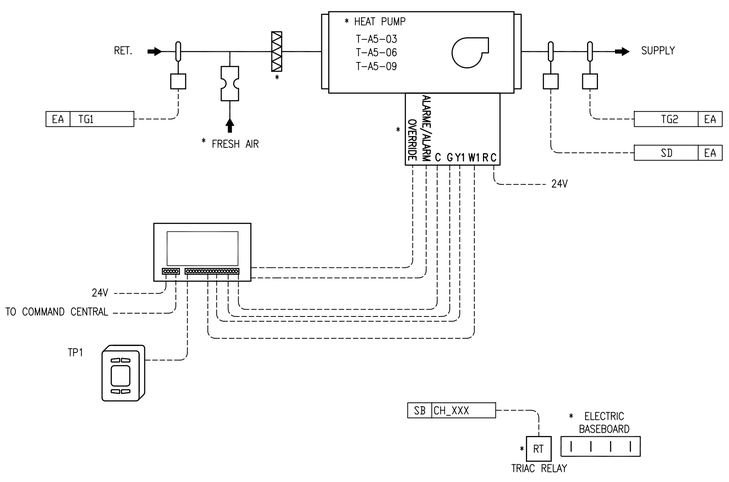
- CENTRAL COMMAND ALLOWS THE SYSTEM TO OPERATE ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE DUCT SENSOR (TG1) CONTROLS THE HEAT PUMP IN ORDER TO MAINTAIN THE DESIRED SET POINT.
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO SET THE POSITION OF THE REVERSIBLE VALVE TO "HEAT".
- CENTRAL COMMAND AVERAGES THE TEMPERATURES OF THE RETURNING AIR USING RETURN DUCT SENSOR (TG1).
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO START THE FIRST STAGE OF HEATING (Y1).
- THE COMPRESSOR TURNS ON.
- IF THE TEMPERATURE DOES NOT GO UP AFTER 3 MINUTES, CENTRAL COMMAND STARTS THE SECOND STAGE OF HEATING (Y2).
- THE ELECTRIC DUCT COILS ARE NOT IN OPERATION.

ALARM:

- UNINTENDED STOPPING OF THE HEAT PUMP.
- LOW/HIGH TEMPERATURE OF AIR SUPPLY.
- LOW TEMPERATURE OF AIR SUPPLY (4°C).
- HIGH ROOM TEMPERATURE.

FIRE ALARM:

- THE HEAT PUMP SHUTS OFF IF THE FIRE ALARM CONTROL PANEL SENDS IT A SIGNAL.



* : PROVIDED BY OTHERS

SEQUENCE OF OPERATIONS

SYSTEM OFF:

- HEAT PUMP IS NOT IN OPERATION.
- THE ROOM'S THERMOSTAT CONTROLS THE ELECTRIC BASEBOARD.

SYSTEM ON:

- CENTRAL COMMAND ALLOWS THE SYSTEM TO FUNCTION ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE TEMPERATURE SENSOR IN THE RETURN DUCT (TG1) MEASURES THE AVERAGE ROOM TEMPERATURE.
- THE HEAT PUMP VENTILATOR CONTINUALLY OPERATES AT LOW SPEED (MINIMUM OF FRESH AIR).
- THE ROOM'S THERMOSTAT CONTROLS THE HEAT PUMP.
- THE AIRFLOW SENSOR INDICATES CENTRAL COMMAND'S AIRFLOW (AIRFLOW READING ONLY).
- THE ROOM'S THERMOSTAT CONTROLS THE ELECTRIC BASEBOARD.
- THE DUCT TEMPERATURE SENSOR (TG2) MONITORS THE TEMPERATURE OF THE AIR SUPPLY TO THE DIFFUSERS.

REQUESTING AIR-CONDITIONING:

- CENTRAL COMMAND ALLOWS THE SYSTEM TO FUNCTION ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE ROOM'S THERMOSTAT CONTROLS THE HEAT PUMP.
- CENTRAL COMMAND STOPS THE BASEBOARDS.
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO SET THE POSITION OF THE REVERSIBLE VALVE TO "COOL".
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO START THE FIRST STAGE OF AIR-CONDITIONING (Y1).
- THE COMPRESSOR TURNS ON.
- IF THE TEMPERATURE IN THE ROOM DOES NOT GO DOWN AFTER 5 MINUTES, CENTRAL COMMAND STARTS THE SECOND STAGE OF AIR-CONDITIONING (Y2).

REQUESTING HEAT:

- CENTRAL COMMAND ALLOWS THE SYSTEM TO FUNCTION ACCORDING TO THE ESTABLISHED SCHEDULE.
- THE ROOM'S THERMOSTAT CONTROLS THE HEAT PUMP.
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO SET THE POSITION OF THE REVERSIBLE VALVE TO "HEAT".
- CENTRAL COMMAND VERIFIES THE TEMPERATURE OF THE RETURNING AIR USING RETURN DUCT SENSOR (TG1).
- CENTRAL COMMAND SENDS A SIGNAL TO THE HEAT PUMP'S TERMINAL BLOCK TO START THE FIRST STAGE OF HEATING (Y1).
- THE COMPRESSOR TURNS ON.
- IF THE TEMPERATURE DOES NOT GO UP AFTER 3 MINUTES, CENTRAL COMMAND STARTS THE SECOND STAGE OF HEATING (Y2).
- IF THE TEMPERATURE DOES NOT GO UP AFTER ANOTHER 3 MINUTES, CENTRAL COMMAND POWERS ON THE ELECTRIC BASEBOARD.

ALARM:

- UNINTENDED STOPPING OF THE HEAT PUMP.
- LOW/HIGH TEMPERATURE OF AIR SUPPLY.
- LOW TEMPERATURE OF AIR SUPPLY (4°C).
- HIGH ROOM TEMPERATURE.

FIRE ALARM:

- THE HEAT PUMP SHUTS OFF IF THE FIRE ALARM CONTROL PANEL SENDS IT A SIGNAL.

CONTROL DIAGRAMME
HEAT PUMP WITH BASEBOARD, ROOMS A-513, A-566 AND A-507

ÉCH : NONE

CONTROL NOMENCLATURE

PROVIDED, INSTALLED AND CONNECTED BY CONTROL CONTRACTOR

SP1 @ SP3	ROOM TEMPERATURE SENSOR, ON CEILING
TPx	ROOM THERMOSTAT WITH DISPLAY AND ADJUSTMENT OF MULTISTAGE AIR-CONDITIONING/HEATING
TGx	DUCT TEMPERATURE SENSOR

Pêches et Océans Canada
Biens Immobiliers, de l'Environnement, de la Sécurité et de la Santé (BIESS)
104, rue Dalhousie Québec, Qc G1K 7Y7

Fisheries and Oceans Canada
The Real Properties Assets, Environment, Safety and Sécurity (RPESS)
104, Dalhousie Street Québec, Qc G1K 7Y7

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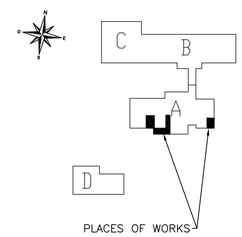
key plan — plan clé



2019-01-18

Révision	Description	Par/By	Date
A	FOR QUOTATION	JD	2019-01-18

A: Numéro du détail — Detail no.
B: Feuille sur laquelle le détail est référé — Location drawing no.
C: Feuille sur laquelle le détail est dessiné — Drawing no.

Toute modification doit être rapportée à:
All modification must be reported to:

Biens Immobiliers, Environnement,
Sécurité et Santé
104, Dalousie, Québec, Qc G1K 7Y7

Dossier:
File:

MONT-JOLI
MAURICE-LAMONTAGNE BUILDING
RENOVATION GIST/SPC

Dessin:
Drawing:

MECHANICAL
CONTROL
DETAILS AND SEQUENCE OF OPERATIONS

	Date
Conçu par: Designed by: Jessy Devin	2018-05-08
Dessiné par: Drawn by: Jessy Devin	2018-05-08
Vérifié par: Verified by: Guy Villeneuve, ing.	2018-05-08
Approuvé par: Approved by: Guy Villeneuve, ing.	2018-05-08

No. dossier: File no.: F3677-170169
Échelle: Scale: Indicated
No. dessin: Drawing no.:
No. feuille: Sheet no.: M22 OF 24

FOR QUOTATION
THESE DOCUMENTS MUST NOT BE USED FOR CONSTRUCTION (OR FABRICATION).

AutoCAD A1

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