BMS CONTROL PANEL

NOTE: ALL CONTROL POINTS ARE LOCATED IN THE PLANT ROOM UNLESS NOTED OTHERWISE

001 — 4c 25mm² XLPE/SWA/LSF + 16mm CPC (Main Sub–mains Supply To BMS Panel Refer To Switchboard Schematic For Size)

HEATING PLANTROOM BMS CONTROL PANEL

- 002 — IF — FIRE ALARM INTERFACE
- 003 — ETHERNET COMMUNICATIONS TO LOCAL COMMS CABINET CAT 6A) – BACNET CONNECTION
- 004 — MAIN DISTRIBUTION BOARD SURGE PROTECTION ALARM SIGNAL
- SPN 16A — 005 — BOILER SUPPLY (B1)
- 006 — ENABLE / FAULT
- SPN 16A — 007 — PRESSURIATION UNIT SUPPLY (PU1)
- 008 — HIGH / LOW LEVEL FAULT
- SPN 16A — 009 — LPHW PUMP (P1) – PRIMARY CIRCUIT
- 010 — ENABLE / FAULT
- SPN 16A — 011 — LPHW PUMP (P2) – CIRCUIT 1
- 012 — ENABLE / FAULT
- SPN 16A — 013 — LPHW PUMP (P3) – CIRCUIT 2
- 014 — ENABLE / FAULT
- SPN 16A — 015 — LPHW PUMP (P4) – CIRCUIT 3
- 016 — ENABLE / FAULT
- SPN 16A — 017 — LPHW PUMP (P5) – CIRCUIT 4
- 018 — ENABLE / FAULT
- SPN 16A — 019 — DHW RETURN PUMP (P6)
- 020 — ENABLE / FAULT
- SPN 16A — 021 — HEAT METER SUPPLY – BOILER
- 022 — HEAT METER PULSED SIGNAL
- SPN 16A — 023 — HEAT METER SUPPLY – HEAT PUMP
- 024 — HEAT METER PULSED SIGNAL
- SPN 16A — 025 — GAS DETECTION PANEL
- 026 — VALVE POSITION / STATUS
- SPN 16A — 027 — DATA LOGGER POWER SUPPLY
- 028 — GATEWAY DATA LOGGER MODEM LINE
- 029 — OUTDOOR AIR TEMP SENSOR (NORTH WALL)
- 030 — ASHP PRIMARY FLOW IMMERSION TEMP SENSOR
- 031 — ASHP PRIMARY RTN IMMERSION TEMP SENSOR
- 032 — ASHP FLOW HIGH LIMIT STAT
- 033 — BOILER HEADER FLOW TEMPERATURE SENSOR
- 034 — BOILER HEADER RTN TEMPERATURE SENSOR
- 035 — BOILER HEADER FLOW HIGH LIMIT STAT
- 036 — LPHW HEATING CIRCUIT FLOW TEMP SENSOR (P1)
- 037 — LPHW HEATING CIRCUIT RETURN TEMP SENSOR (P1)
- 038 — LPHW HEATING CIRCUIT FLOW TEMP SENSOR (P2)
- 039 — LPHW HEATING CIRCUIT RETURN TEMP SENSOR (P2)
- 040 — LPHW HEATING CIRCUIT FLOW TEMP SENSOR (P3)
- 041 — LPHW HEATING CIRCUIT RETURN TEMP SENSOR (P3)
- 042 — LPHW HEATING CIRCUIT FLOW TEMP SENSOR (P4)
- 043 — LPHW HEATING CIRCUIT RETURN TEMP SENSOR (P4)
- 044 — LPHW BUFFER VESSEL TEMP SENSOR
- 045 — LPHW BUFFER VESSEL OUTLET FLOW TEMP SENSOR
- 046 — LPHW BUFFER VESSEL OUTLET RETURN TEMP SENSOR
- 047 — DHWS FLOW TEMP SENSOR
- 048 — DHWS RETURN TEMP SENSOR
- 049 — DHWS HIGH LIMIT STAT
- 050 — MAINS WATER INCOMING METER (PULSED SIGNAL)
- 051 — COLD WATER METER TO HOT WATER HEATER
- 052 — LPG METER BOILER SUPPLY (PULSED SIGNAL) – OUTSIDE PLANT ROOM
- 053 — RUN ON TIMER – CIRCUIT 1
- 054 — RUN ON TIMER – CIRCUIT 2
- 055 — RUN ON TIMER – CIRCUIT 3
- 056 — RUN ON TIMER – CIRCUIT 4
- 057 — MODBUS INTERFACE TO ASHP – AT EXTERNAL HEAT PUMP
- 058 — ELECTRICAL SWITCHBOARD METERS (MODBUS) OVERALL SCHOOL METER AND HEAT PUMP METERS AT NEW INCOMING ESB METER SUPPLY
- 059 — FUTURE – POWER & CONTROL CABLE TO TEMP STATS (MODBUS)
  - SEE DETAIL A
  - MAX 30no. CONTROLLERS ON ONE MODBUS LOOP
  - MAX 10no. CONTROLLERS ON ONE 24v POWER SUPPLY

50% SPARE CAPACITY

NOTES:

ALL CABLES DETAILED ⌐O MUST BE SCREENED.

2 CORE CABLE AS PER CONTROL SPECIALISTS/MANUFACTURERS REQUIREMENTS
4 CORE CABLE AS PER CONTROL SPECIALISTS/MANUFACTURERS REQUIREMENTS
MODBUS CABLE AS PER CONTROL SPECIALISTS/MANUFACTURERS REQUIREMENTS

\\\\ DENOTES NUMBER OF CORES

EARTHING CABLES NOT INDICATED FOR CLARITY

FINAL CONNECTIONS TO BE COMPLETED BY ELECTRICAL CONTRACTOR

NOTE: THE CABLE TYPES LISTED ON THIS DRAWING ARE INDICATIVE AND TO CONVEY DESIGN INTENT. FINAL AND EXACT CABLE TYPES SHALL BE ADVISED BY THE BMS PANEL MANUFACTURER AND ALL ASSOCIATED ALLOWANCES MADE AT TENDER STAGE.

THIS DRAWING IS FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING WORKING DRAWINGS

GENERAL NOTES:

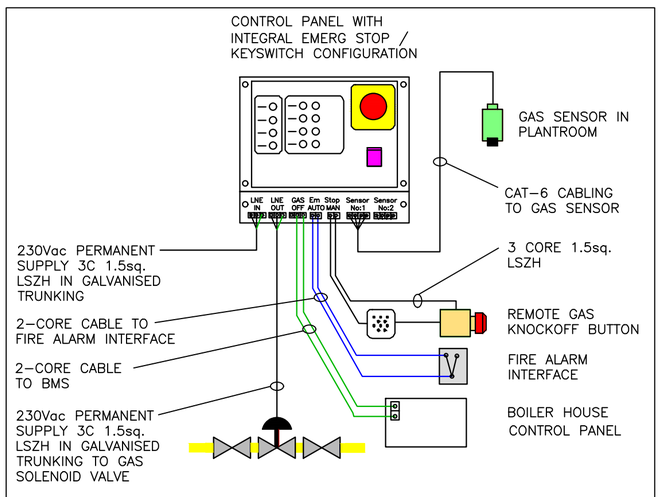
1. THE ELECTRICAL SUB–CONTRACTOR SHALL WIRE TO THE SCHEDULE OF WIRING DETAILS AS SUBMITTED BY THE SPECIALIST CONTRACTOR PROVIDING THE MECHANICAL CONTROL PANEL.
2. CONTRACTOR SHALL ALSO ALLOW FOR THE FOLLOWING:
3. ALL CIRCUITS/CONTROL CABLING TO BE INSTALLED IN GALVANISED CONDUIT/TRUNKING. MINIMUM SIZE OF CABLE SHALL BE 2.5MM UNLESS OTHERWISE INDICATED.
4. FINAL CONNECTIONS TO BE CARRIED OUT USING FLEXIBLE METALLIC CONNECTIONS AS PER KOPEX TO IP65. FLEXIBLE CONNECTIONS SHALL NOT EXCEED 1 METRE.
5. FLEXIBLE CONNECTIONS SHALL BE OF SUFFICIENT LENGTH TO PERMIT THEIR DISCONNECTION TO FACILITATE COMMISSIONING OF STATS ETC BY THE SPECIALIST CONTRACTOR.
6. ALL ISOLATORS EXTERNALLY LOCATED OR WITHIN THE BOILER plantroom SHALL BE OF THE ROTARY TYPE AS PER CRAIG AND DERRICOTT TO IP65 LOCKABLE AND SHALL BE RATED AT 20A.
7. THE ELECTRICAL SUB–CONTRACTOR SHALL DETERMINE THE EXACT NO. OF POLES REQUIRED PRIOR TO SUPPLY. ISOLATORS SHALL BE 20A UNLESS OTHERWISE INDICATED.
8. WHERE A CAT6A CABLE OUT IS DENOTED, THE ELECTRICAL SUB–CONTRACTOR SHALL PROVIDE A DATA POINT, CABLED BACK TO LOCAL HUB.

MECHANICAL CONTROLS WIRING INSTALLATION NOTES:

1. ALL POWER CABLING TO BE WIRED IN 4 CORE 2.5mm SQ LSZH AND SINGLE CORE 2.5mm SQ CPC, UNLESS OTHERWISE STATED. ALL WIRING TO BE INSTALLED IN GALVANISED STEEL CONDUIT/TRUNKING THROUGHOUT ENTIRE ROUTE.
2. ALL CONTROL WIRING AND SENSORS TO BE COMPLETED IN BELDON 0.75mm SQ (MIN) SQ SCREENED CABLE.
3. ALL CONTROL VALVE ACTUATORS, CONTROLLERS, TO BE COMPLETED IN BELDON 1.5mm SQ (MIN) SCREENED CABLE.
4. ALL WIRING TO EXTRACT FANS SHALL BE COMPLETED IN 1.5mm SQ LSZH.
5. MCC CONTROL PANEL AND ALL BEMS MECHANICAL FIELD EQUIPMENT INCLUDING BUT NOT LIMITED TO CONTROL VALVES, SENSORS, VALVES ACTUATORS, FANS, MHRV UNITS, CONTROLLERS, METERS ETC SHALL BE PROVIDED & INSTALLED BY THE MECHANICAL SERVICES CONTRACTOR BUT WIRED AND TERMINATED BY THE ELECTRICAL CONTRACTOR.
6. ALL CONTROL & POWER WIRING SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
7. ALL BEMS POWER & CONTROL WIRING TERMINATIONS AT THE MCC CONTROL PANEL SHALL BE CARRIED OUT BY THE ELECTRICAL CONTRACTOR.
8. ALL VENTILATION WORKS INDICATED (UNLESS OTHERWISE STATED) SHALL BE WIRED OFF LOCAL LIGHTING CIRCUIT VIA A FUSED NEON INDICATING CONNECTION UNIT (NOT INDICATED).
9. ALL MECHANICAL PLANT ITEMS SHALL BE LOCATED AND FIXED BY THE MECHANICAL SUB–CONTRACTOR PRIOR TO THE ELECTRICAL SUB–CONTRACTOR WIRING SAME.
10. ANY ITEMS NOT REFERRED TO AS FREE ISSUE ARE TO BE SUPPLIED BY THE ELECTRICAL SUB–CONTRACTOR.
11. FINAL LOCATION AND HEIGHTS OF ALL SENSORS AND THERMOSTATS, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH TGD PART M AND TO BE AGREED ONSITE WITH ENGINEER AND SPECIALIST SUB–CONTRACTOR PRIOR TO INSTALLATION.
12. THE ELECTRICAL CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR SUPPLY & INSTALL OF THE CONTROL CABLING BETWEEN DIRECT ACTING EQUIPMENT i.e. EXTRACT FANS TO PIR/LIGHTSWITCH/SPEED CONTROLLERS, HEATING CONTROL VALVES TO WALL TEMPERATURE SENSORS, MHRV UNITS TO DEMAND CONTROLLERS AND SENSORS ETC.

MECHANICAL/ELECTRICAL SYMBOLS

SPN 20A	SINGLE PHASE & N ISOLATOR (RATING AS INDICATED) SUPPLIED AND FITTED BY ELECTRICAL SUB–CONTRACTOR
TPN 20A	3 PHASE & N ISOLATOR (RATING AS INDICATED) SUPPLIED AND FITTED BY ELECTRICAL SUB–CONTRACTOR
	SWITCHED FUSED–CONNECTION OUTLET WITH NEON (SUPPLIED AND FITTED BY ELECTRICAL SUB–CONTRACTOR)
FAN 3P	3–POLE FAN ISOLATING SWITCH SUPPLIED AND FITTED BY ELECTRICAL CONTRACTOR
'REF'	MAIN–SWITCH BOARD
'REF'	SUB–DISTRIBUTION BOARD
IF	INTERFACE UNIT & POWER SUPPLY
	DUAL DATA OUTLET – RJ45
Ts	TEMP STAT / SENSOR
	2–PORT CONTROL VALVE
	3–PORT CONTROL VALVE
M	BEMS METER
HM	BEMS HEAT METER
	GAS DETECTION PANEL
	GAS SOLENOID VALVE
S	LPG GAS SENSOR MOUNTED AT LOW LEVEL
	PUMP
	EXTRACT FAN
PIR	PRESENCE DETECTOR
	WALL MOUNTED CO2 SENSOR
SC	FAN SPEED CONTROLLER
DC	MHRV UNIT DEMAND CONTROLLER
	COLD WATER BOOSTER PUMP



Ⓑ GAS DETECTION SYSTEM SCHEMATIC WIRING DIAGRAM

REV	DESCRIPTION	DRN	CKD	DATE
T01	TENDER ISSUE	CM	SF	20-04-2026
P01	TA ISSUE	CM	SF	10-04-2026

ISSUE: TENDER STAGE

semple mckillop
NATURALLY INNOVATIVE **CONSULTING ENGINEERS**
ISO 9001 ISO 14001 OHSAS 18001 Registered
Belfast +44 (0)28 90331700
Castleblayney +353 (0)42 9749570
www.semplemckillop.com admin@semplemckillop.com

PROJECT TITLE: SCHOOLS ENERGY PATHFINDER - 8.7 St. Olivers

DRAWING TITLE: BEMS & MECHANICAL WIRING CONTROL PANEL & WIRING DETAILS

DRAWING REFERENCE	DRN	SCALE
3232-SMK-8.7-ZZ-DR-ME-5801 (Project - Originator - Volume - Level - Type - Role - Number)	CM	A1 NTS