SPECIFICATIONS

temperzone

Model	**OPA 1410RLTM4FPQD(-Z)** Econex Pro
Configuration	Horizontal Supply Air
Item No. (Standard / Opposite Hand)	876-141-701 / 876-141-710
Unit c/w Economiser (Standard / Opposite Hand)	877-141-701 / 877-141-710
Configuration	Downward Supply Air
Item No. (Standard / Opposite Hand)	876-141-723 / 876-141-732
Unit c/w Economiser (Standard / Opposite Hand)	877-141-723 / 877-141-732
Cooling capacity (net) [1]	146 kW
Cooling capacity (gross) range	11.8 ~ 189 kW
Heating capacity [1]	145 kW
Heating capacity (gross) range	12.9 ~ 181 kW
Electrical input - cooling	45.1 kW
Electrical input - heating	43.2 kW
EER / AEER (cooling) [1]	3.24 / 3.22
COP / ACOP (heating) [1]	3.35 / 3.34
Operating Range (outdoor ambient) - cooling	–10°C ~ 50°C
Operating Range (outdoor ambient) - heating	–10°C ~ 25°C
Master Controller	*c.pCO*
Slave Controllers	UC8 (x4)
Refrigerant	R32
Refrigerant Charge	7.1 kg/sys.
Minimum floor area (@2.4m/5m below ceiling diffuser)	27 m^2 / 6 m^2
Compressor oil type	POE-46 (NXG5020 or equivalent)
Compressor type	Inverter scroll (x4)
Power supply [2]	3 ph. 400V ac 50Hz + N + E
Compressor (3ph.) run amps at rating cond.	14.7 A/ph. (x4)
Compressor circuit breaker	32 A (x4)
Indoor fan motor size	EC Plug 3.65kW (x4)
Nominal air flow at rating conditions	8 100 l/s
Indoor fan motor (3ph.)	4.6 A/ph. (x4)
Outdoor fan motor (3ph.) - full load	1.9 A/ph. (x4)
Outdoor fan motor – max. ext. static pressure available	120 Pa (@12,100 l/s)
Control circuit breaker (internal)	4 A
Auxilary power outlet (1ph.) overload setting	10 A
Running amps (total system)	69 / 67 / 74 A
Max. running amps (total system)	116 / 111 / 121 A
RCD type recommended	type B, 30mA, 3 pole
Net weight	2064 kg
Shipping weight (excl. cowl)	2204 kg
Net weight c/w Economiser	2154 kg

Accessories:

Remote wired Service Interface Device (*pGD1*)	201-000-379
Filters - rated EU4/G4 disposable	019-400-005 600x500x50 (x3) [3] 019-400-007 600x600x50 (x6)
Filters - rated EU4/G4 washable (NZ only)	019-000-034 600x500x50 (x3) [3] 019-000-031 600x600x50 (x6)

[1] Tested in accordance with AS/NZS 3823

22029

[2] Voltage range: 380–440V

[3] Filter sizes are nominal; refer to Temperzone for actual measurements.

econex
nex gen R32 inverter

DIMENSIONS (mm)

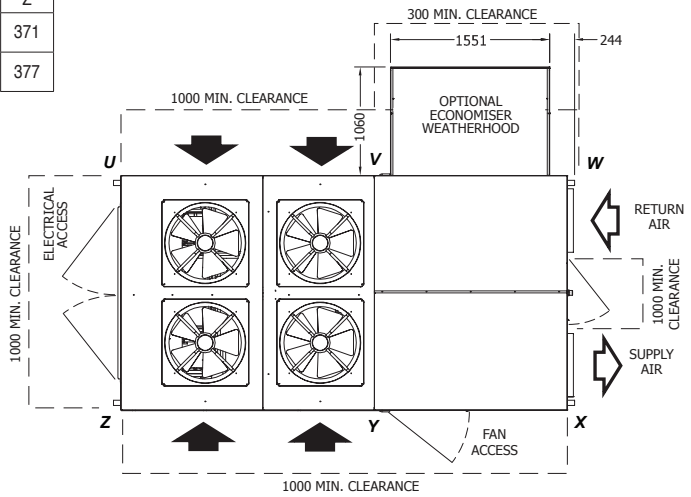
OPA 1410RLTM4FPQD01(-Z) Horizontal Supply / Standard Hand

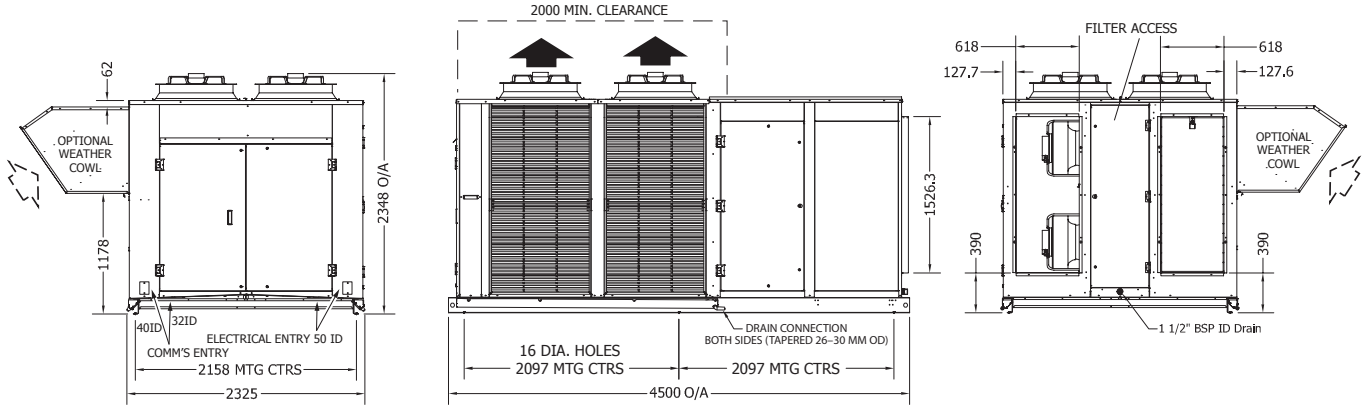
	POINT LOADS (kg)					
	U	V	W	X	Y	Z
Std	411	339	267	327	349	371
c/w Ec.	423	360	297	339	358	377

PROJECTION

Not to Scale

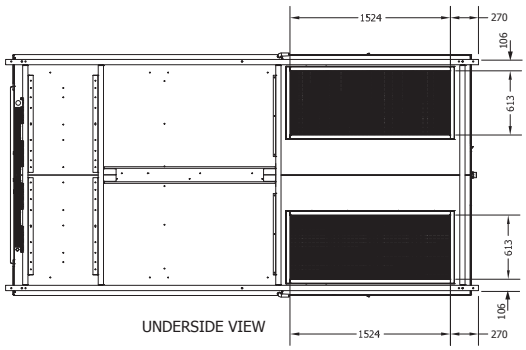
Multiple units side-by-side: Allow a minimum of 2m between coil faces.

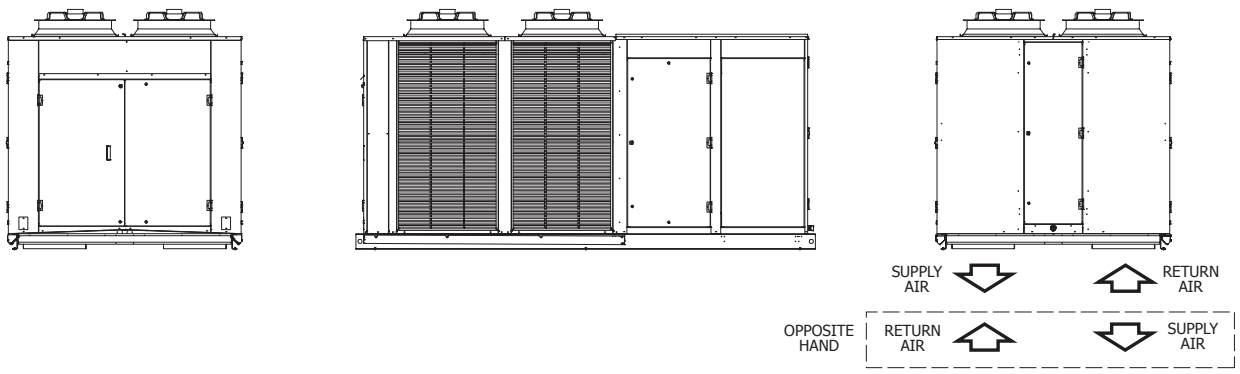




OPA 1410RLTM4FPQD23(-Z) Downward Supply / Standard Hand

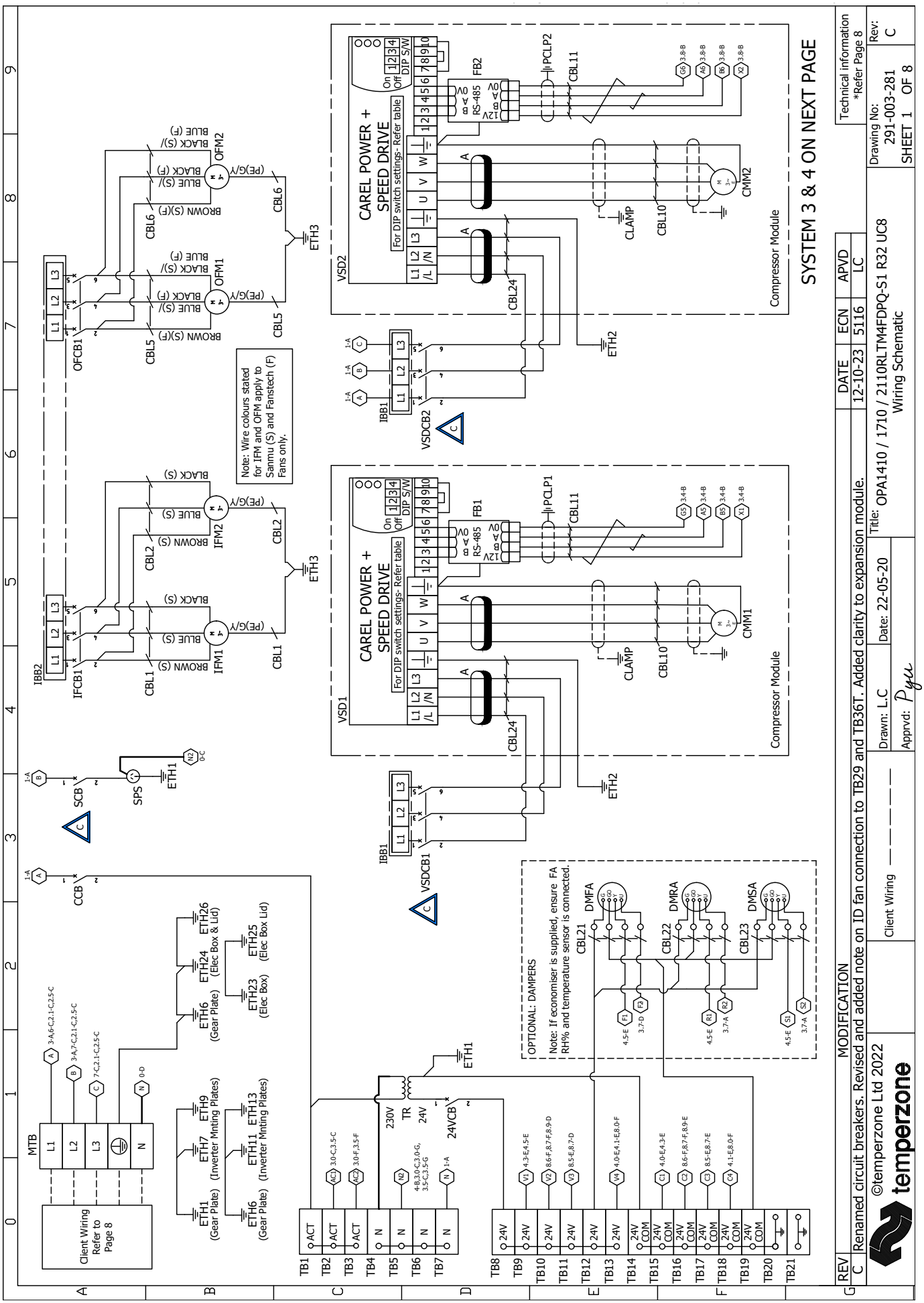
Clearances as above





NOTE
Specifications are subject to change without notice due to the manufacturer's ongoing research and development programme.

temperzone


SYSTEM 3 & 4 ON NEXT PAGE
CAREL POWER + SPEED DRIVE
For DIP switch settings- Refer table
DIP S/W
Compressor Module
VSD1
VSD2
VSDCB1
VSDCB2
IBB1
IBB2
IFCB1
OFCB1
IFM1
IFM2
OFM1
OFM2
CMM1
CMM2
FB1
FB2
RS-485
PCLP1
PCLP2
CBL11
CBL10
CBL24
CLAMP
ETH1
ETH2
ETH3
SCB
SPS
CCB
MTB
TB1
TB2
TB3
TB4
TB5
TB6
TB7
TB8
TB9
TB10
TB11
TB12
TB13
TB14
TB15
TB16
TB17
TB18
TB19
TB20
TB21
TR
230V
24V
24VCB
DMFA
DMRA
DMSA
CBL21
CBL22
CBL23
OPTIONAL: DAMPERS
Note: If economiser is supplied, ensure FA RH% and temperature sensor is connected.
Client Wiring
Refer to Page 8
Note: Wire colours stated for IFM and OFM apply to Sanmu (S) and Fanstech (F) Fans only.
Technical information *Refer Page 8
Drawing No: 291-003-281
SHEET 1 OF 8
Rev: C
Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8 Wiring Schematic
Drawn: L.C
Date: 22-05-20
Apprvd:
DATE 12-10-23
ECN 5116
APVD LC
REV C
MODIFICATION
Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.
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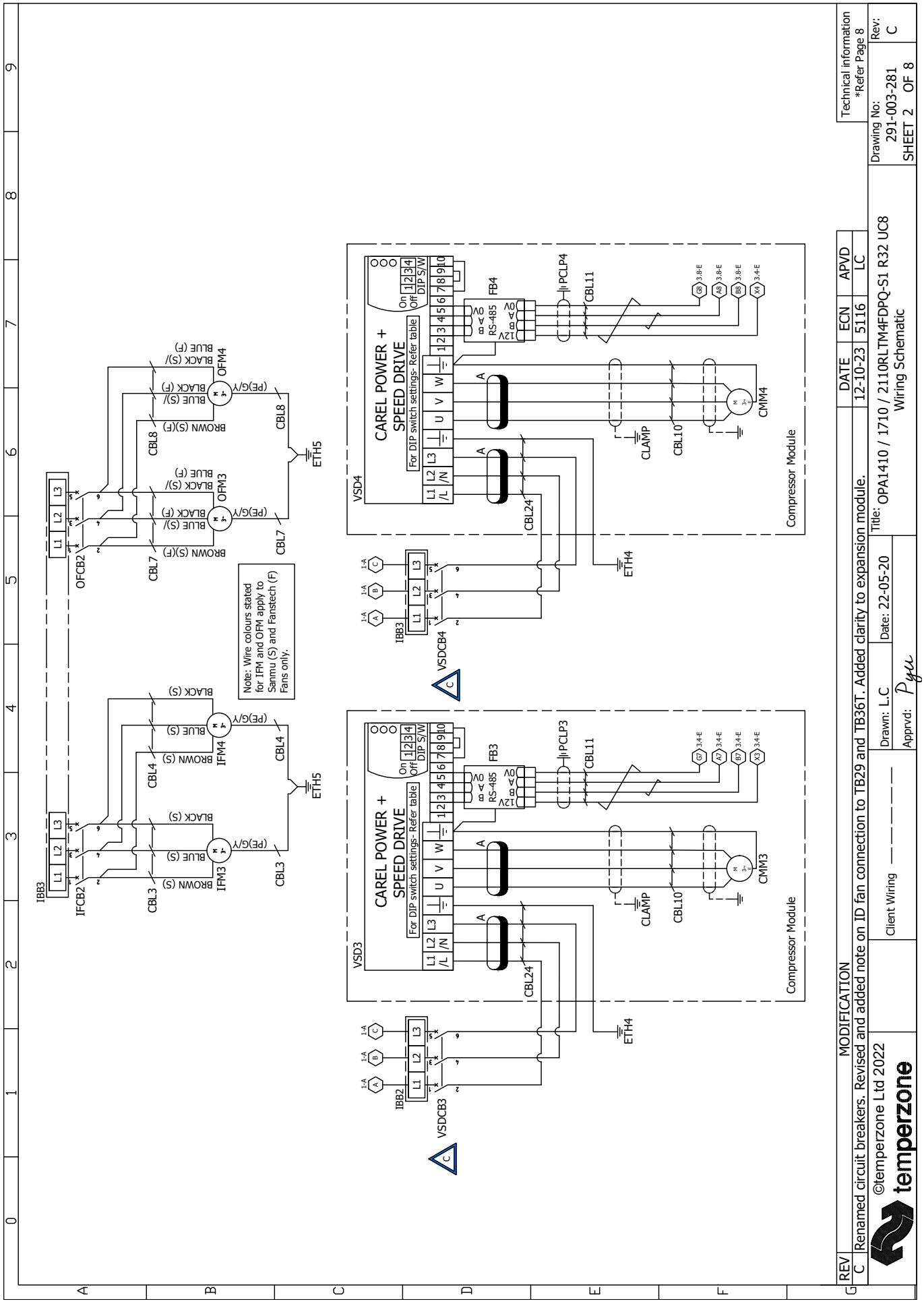
IBB3
IFCB2
OFCB2
IFM3
IFM4
OFM3
OFM4
CBL3
CBL4
CBL7
CBL8
ETH5
BROWN (S)
BLUE (S)
BLACK (S)
BROWN (S)(F)
BLUE (S)/
BLACK (S)/
BLUE (F)
(PE)G/Y
Note: Wire colours stated for IFM and OFM apply to Sanmu (S) and Fanstech (F) Fans only.
VSD3
VSD4
CAREL POWER + SPEED DRIVE
For DIP switch settings- Refer table
DIP S/W
FB3
FB4
RS-485
PCLP3
PCLP4
CBL11
CBL24
CBL10
CLAMP
CMM3
CMM4
ETH4
Compressor Module
IBB2
IBB3
VSDCB3
VSDCB4
Technical information
*Refer Page 8
REV
MODIFICATION
DATE
ECN
APVD
C
Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.
12-10-23
5116
LC
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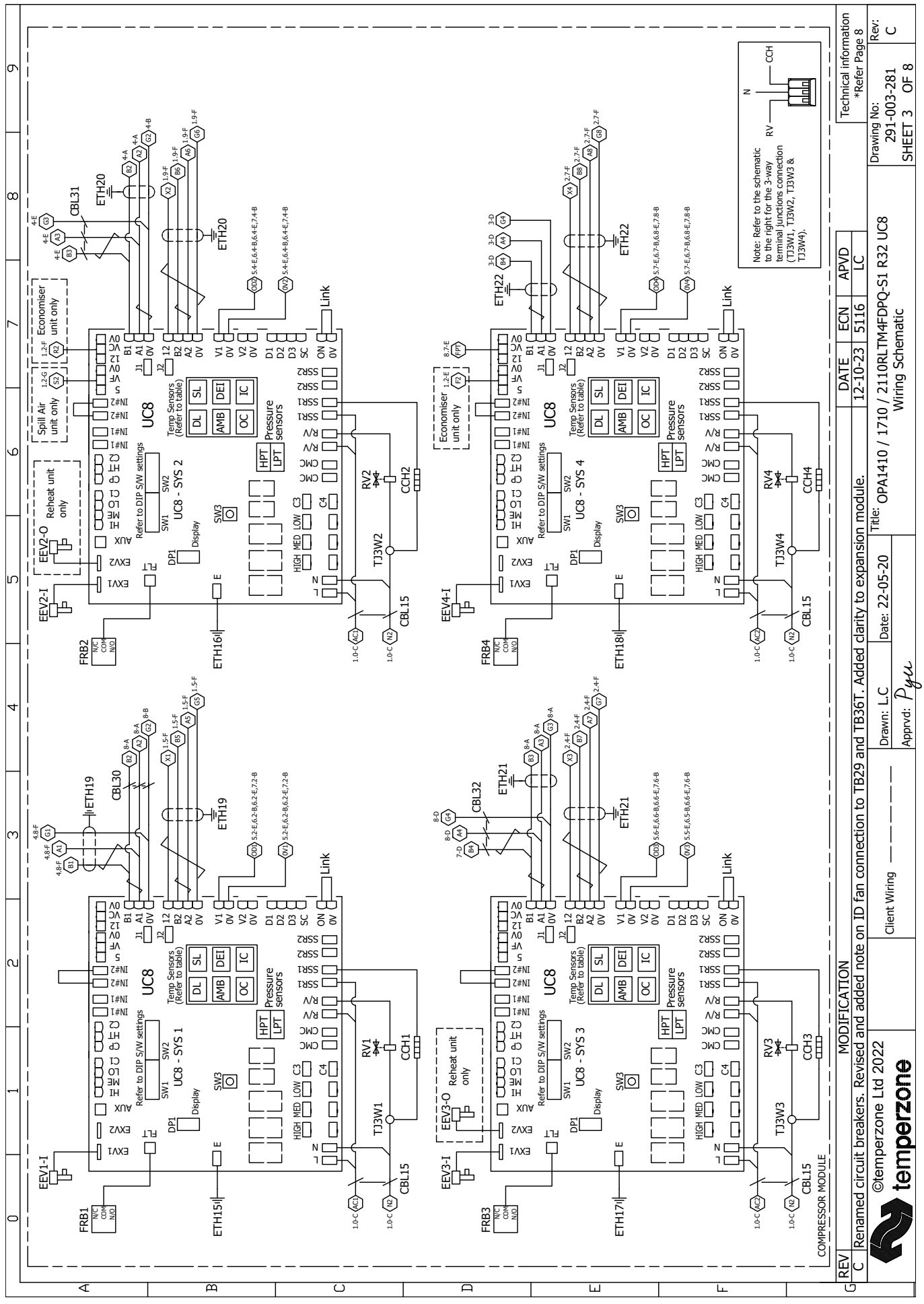
temperzone
Client Wiring
Drawn: L.C
Date: 22-05-20
Apprvd: Pyu
Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8
Wiring Schematic
Drawing No: 291-003-281
Rev: C
SHEET 2 OF 8



REV	MODIFICATION	DATE	ECN	APVD
C	Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.	12-10-23	5116	LC

Technical information *Refer Page 8

Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8 Wiring Schematic

Drawing No: 291-003-281

Rev: C

SHEET 3 OF 8

Drawn: L.C

Date: 22-05-20

Apprvd: Pyun

Client Wiring

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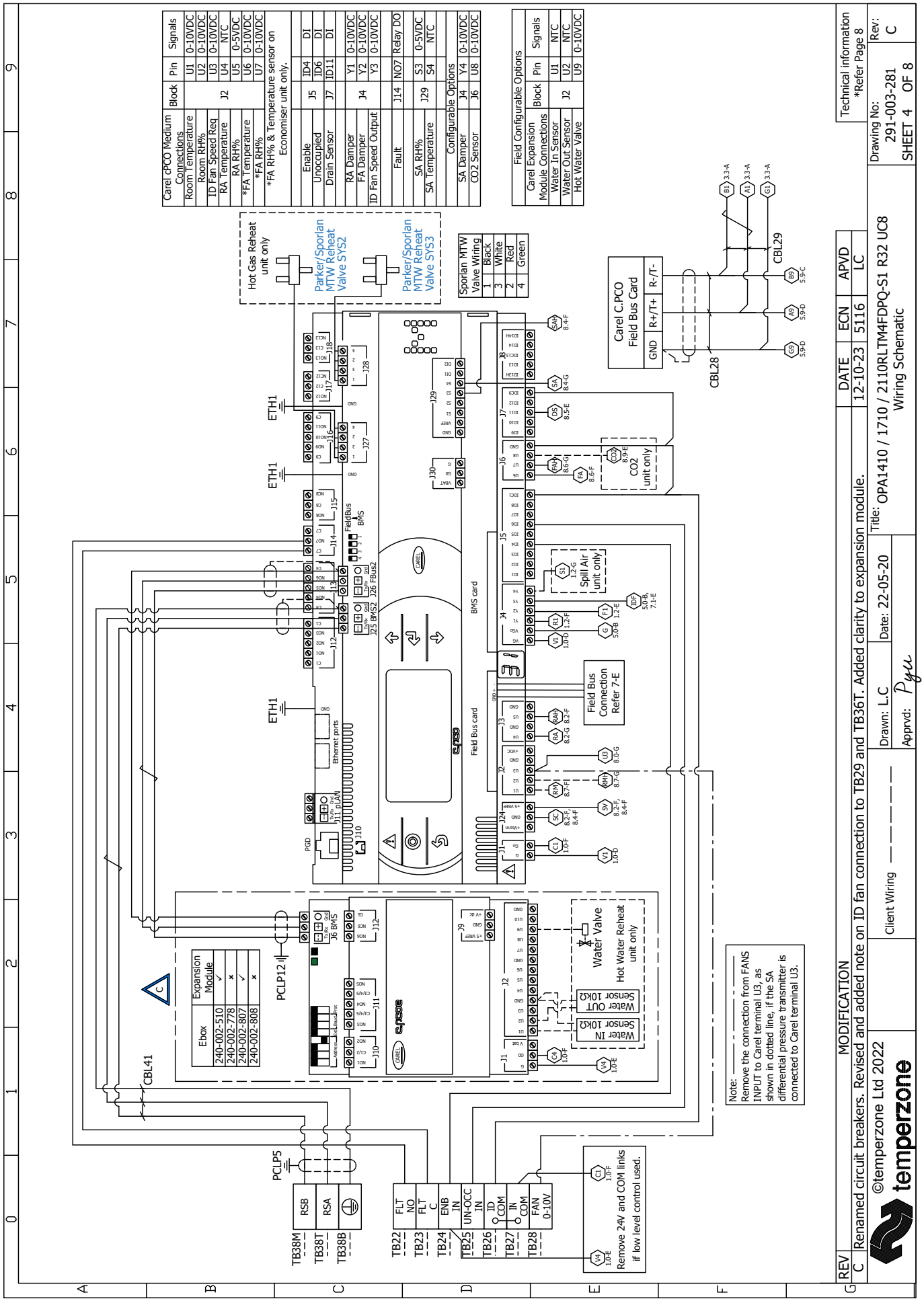
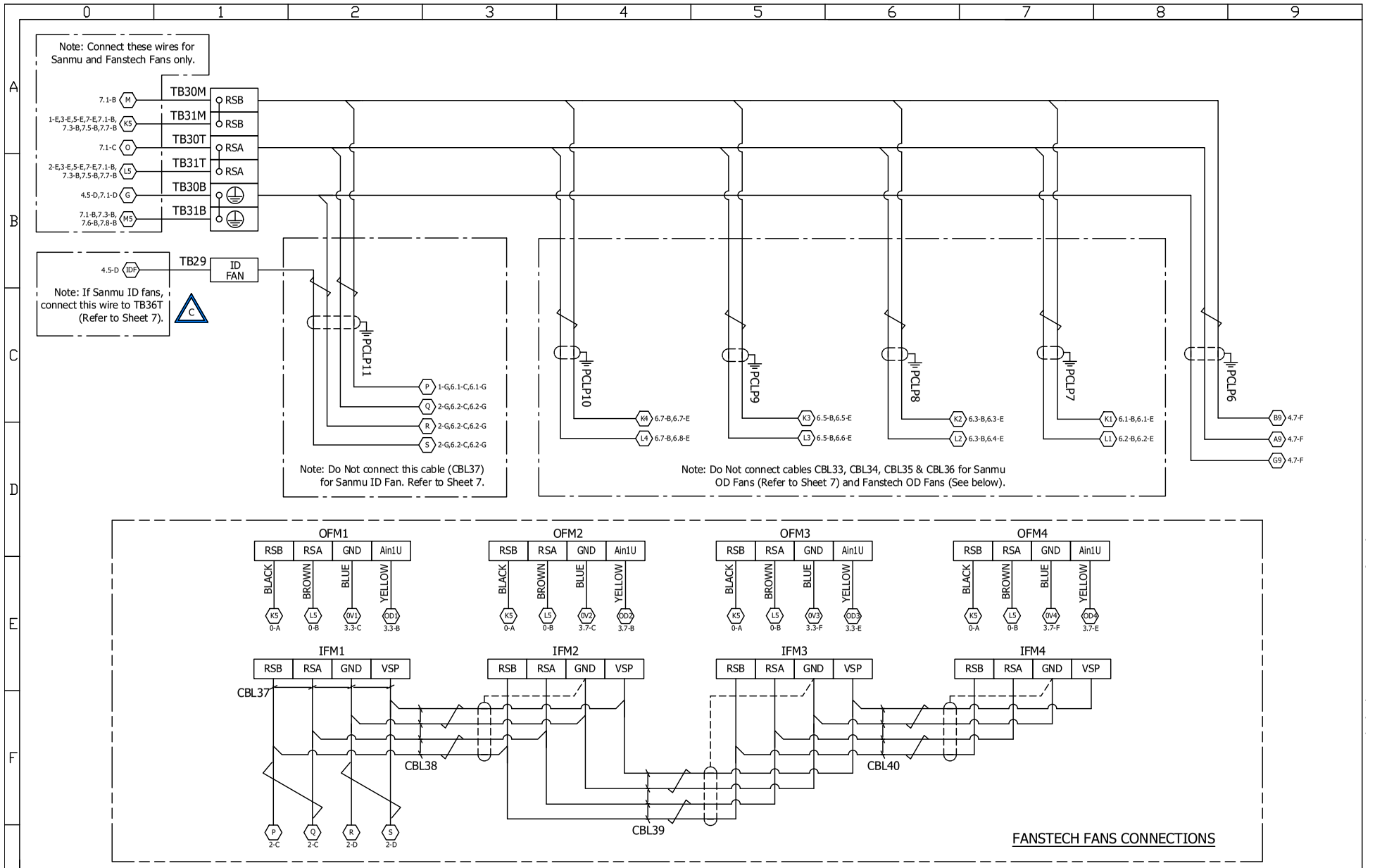

Carel cPCO Medium Connections
Block
Pin
Signals
Room Temperature
U1
0-10VDC
Room RH%
U2
0-10VDC
TD Fan Speed Req
U3
0-10VDC
RA Temperature
J2
U4
NTC
RA RH%
U5
0-5VDC
*FA Temperature
U6
0-10VDC
*FA RH%
U7
0-10VDC
*FA RH% & Temperature sensor on Economiser unit only.
Enable
J5
ID4
DI
Unoccupied
ID6
DI
Drain Sensor
J7
ID11
DI
RA Damper
Y1
0-10VDC
FA Damper
J4
Y2
0-10VDC
ID Fan Speed Output
Y3
0-10VDC
Fault
J14
NO7
Relay DO
SA RH%
S3
0-5VDC
SA Temperature
J29
S4
NTC
Configurable Options
SA Damper
J4
Y4
0-10VDC
CO2 Sensor
J6
U8
0-10VDC
Field Configurable Options
Carel Expansion Module Connections
Block
Pin
Signals
Water In Sensor
U1
NTC
Water Out Sensor
J2
U2
NTC
Hot Water Valve
U9
0-10VDC
Hot Gas Reheat unit only
Parker/Sporlan MTW Reheat Valve SYS2
Parker/Sporlan MTW Reheat Valve SYS3
Sporlan MTW Valve Wiring
1 Black
3 White
2 Red
4 Green
Carel C.PCO Field Bus Card
GND
R+/T+
R-/T-
CBL28
CBL29
CBL41
PCLP5
PCLP12
TB38M
TB38T
TB38B
RSB
RSA
TB22
TB23
TB24
TB25
TB26
TB27
TB28
FLT NO
FLT C
ENB IN
UN-OCC IN
ID COM
IN COM
FAN 0-10V
Remove 24V and COM links if low level control used.
Ebox
Expansion Module
240-002-510
240-002-778
240-002-807
240-002-808
Water Valve
Hot Water Reheat unit only
Water IN Sensor 10K2
Water OUT Sensor 10K2
Field Bus Connection Refer 7-E
Spill Air unit only
CO2 unit only
BMS card
Field Bus card
Ethernet ports
FieldBus
BMS
FBus2
BMS2
Note:
Remove the connection from FANS INPUT to Carel terminal U3, as shown in dotted line, if the SA differential pressure transmitter is connected to Carel terminal U3.
REV
MODIFICATION
DATE
ECN
APVD
C
Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.
12-10-23
5116
LC
Technical information
*Refer Page 8
©temperzone Ltd 2022
temperzone
Client Wiring
Drawn: L.C
Date: 22-05-20
Apprvd:
Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8
Wiring Schematic
Drawing No:
291-003-281
SHEET 4 OF 8
Rev:
C



REV	MODIFICATION	DATE	ECN	APVD
C	Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.	12-10-23	5116	LC

temperzone

Client Wiring

Drawn: L.C Date: 22-05-20

Apprvd: Pyu

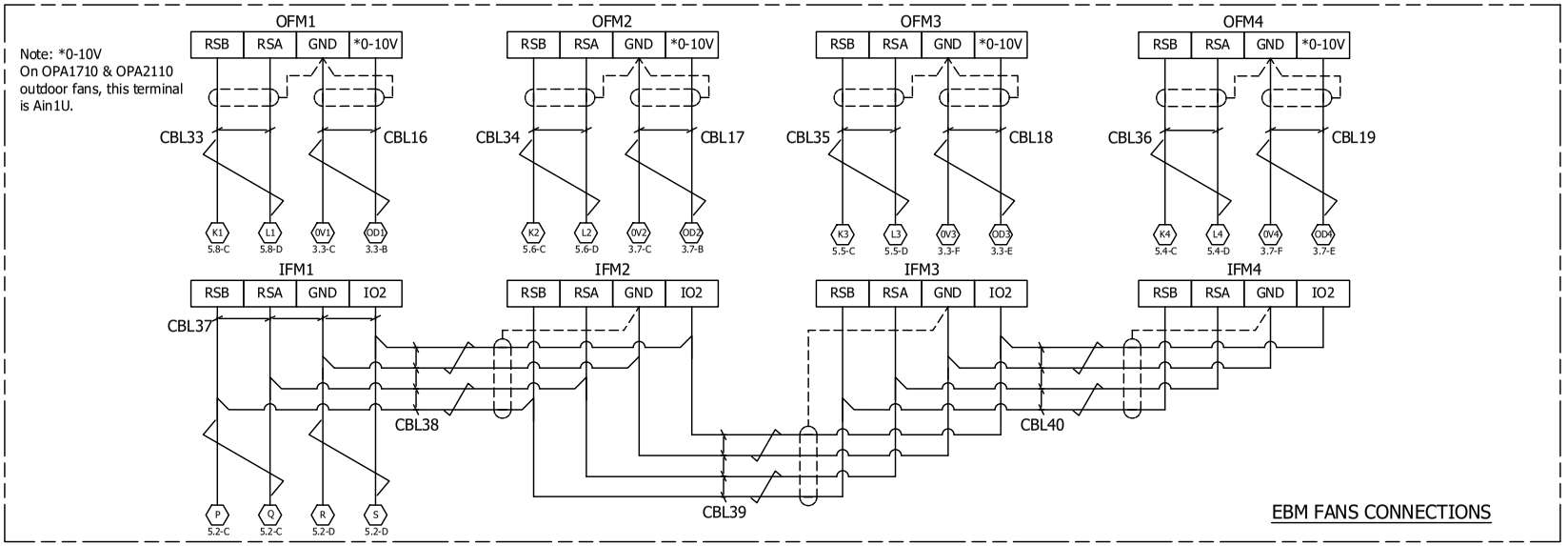
Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8 Wiring Schematic

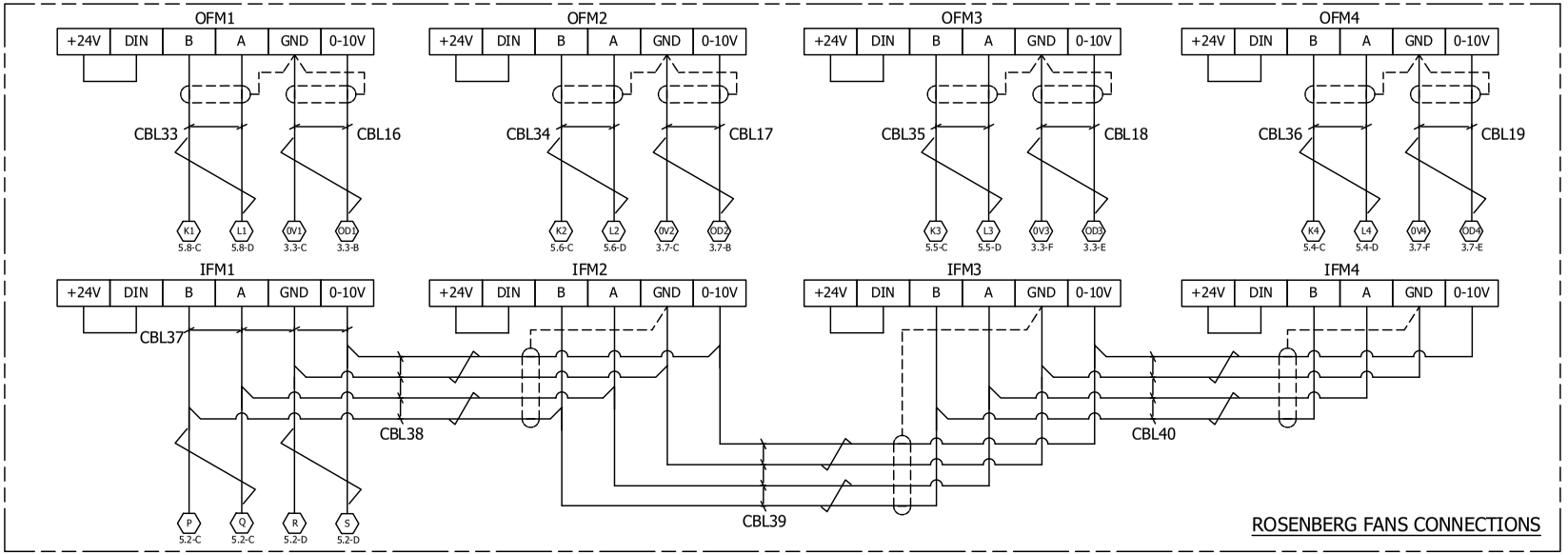
Drawing No: 291-003-281

SHEET 5 OF 8

Rev: C

NOTE: THE FOLLOWING FANS CONNECTIONS APPLY, DEPENDING ON THE MAKE OF FANS INSTALLED IN THE UNIT.





REV	MODIFICATION	DATE	ECN	APVD
C	Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.	12-10-23	5116	LC

temperzone

Client Wiring

Drawn: L.C

Date: 22-05-20

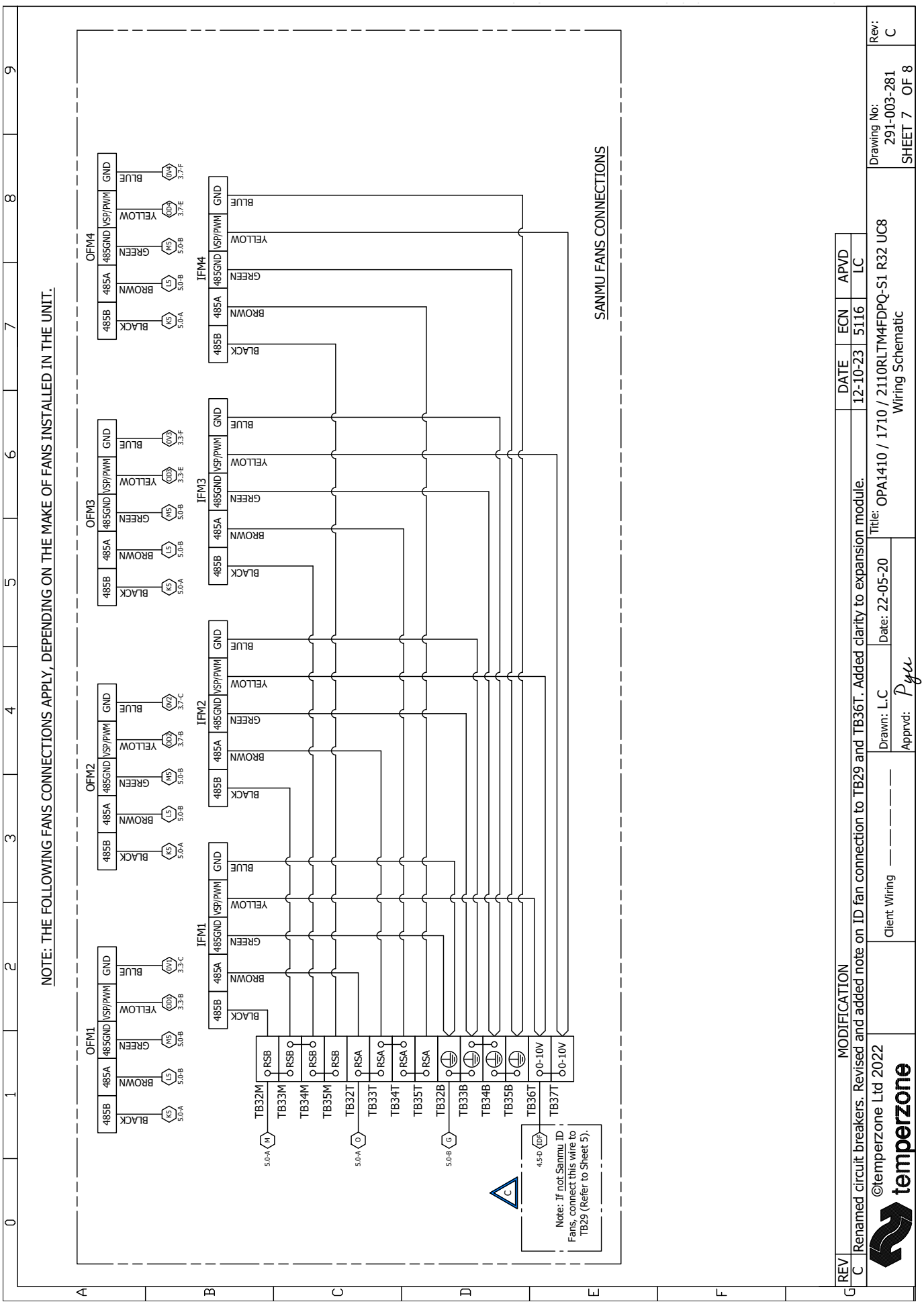
Apprvd: Pyu

Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8 Wiring Schematic

Drawing No: 291-003-281

SHEET 6 OF 8

Rev: C


NOTE: THE FOLLOWING FANS CONNECTIONS APPLY, DEPENDING ON THE MAKE OF FANS INSTALLED IN THE UNIT.
SANMU FANS CONNECTIONS
OFM1
OFM2
OFM3
OFM4
IFM1
IFM2
IFM3
IFM4
485B
485A
485GND
VSP/PWM
GND
BLACK
BROWN
GREEN
YELLOW
BLUE
TB32M
TB33M
TB34M
TB35M
TB32T
TB33T
TB34T
TB35T
TB32B
TB33B
TB34B
TB35B
TB36T
TB37T
RSB
RSA
0-10V
Note: If not Sanmu ID Fans, connect this wire to TB29 (Refer to Sheet 5).
REV
MODIFICATION
DATE
ECN
APVD
C
Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.
12-10-23
5116
LC
©temperzone Ltd 2022
temperzone
Client Wiring
Drawn: L.C
Date: 22-05-20
Apprvd:
Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8
Wiring Schematic
Drawing No:
291-003-281
SHEET 7 OF 8
Rev:
C

Important Notes:

24 Hour power required (on L1) for control circuit and crankcase heaters

Portable RCD shall be used with single phase socket.

Sensor(S) / Transducers (T) to UC8			
	Name	Type	Colour
DL	Discharge	S	Grey
SL	Suction	S	White
AMB	Ambient	S	Black
DEI	Deice	S	Blue
LPT	Suction Pressure	T	Grey
HPT	High Pressure	T	Grey

Modbus Devices Address	
UC8	44, 45, 46, 47
VSD	10
IFM	21, 22, 23, 24
OFM	31, 32, 33, 34

Sensor to Carel c.PCO		
	Name	Type
*Room	Room Air	RH% & Temp
RA	Return Air	RH% & Temp
SA	Supply Air	RH% & Temp
**FA	Fresh Air	RH% & Temp
*Room sensor supplied loose.		
**FA sensor on Economiser unit only.		

VSD DIP switch settings	
DIP switch	↑ On/Off ↓
1,4	On
2,3	Off

Ferrites			
	Part Number	Frequency Type	Number of Turns
A	012-001-074	High	1

Unit with No Reheat
* 1 x EEV per system
* Carel c.pCO Medium version with built-in EVD
* 1 x Carel Field Bus Card

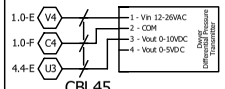
	Compressor	UC8 DIP SWITCHES
		ON
ALL SYSTEMS	INVERTER	1, 4, 6, 7, 10, 14

Unit with Reheat
* 1 x EEV on System 1 & 4
* 2 x EEV on System 2 & 3
* 1 x reheat coil
* 2 x Sporlan / Parker modulating valves
* Carel c.pCO Medium version with built-in EVD
* 1 x Carel Field Bus Card

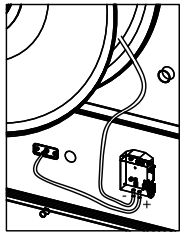
	Compressor	UC8 DIP SWITCHES
		ON
ALL SYSTEMS	INVERTER	1, 4, 6, 7, 10, 14

Dwyer Differential Pressure Transmitter 616KD-13-V-TC Wiring and Tubes Connections (0-10VDC output)

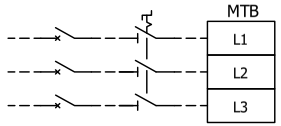
Tubes Connections:
Connect static pressure tip to "+".
Connect inlet ring nipple to "-".



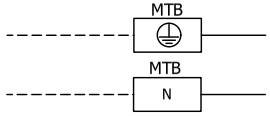
CBL45



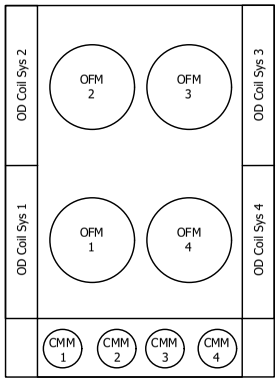
Client Wiring



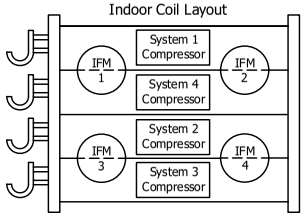
Client External Protection and Isolator Switch



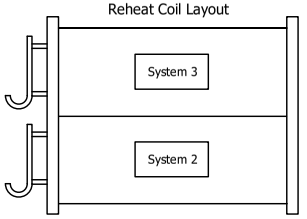
Overall System Layout



Indoor Coil Layout

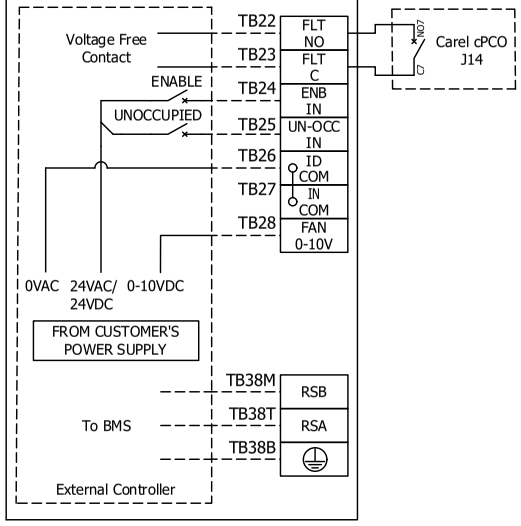


Reheat Coil Layout

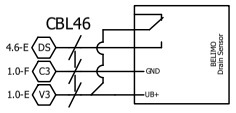


24VCB	24 Volt Circuit Breaker
CBL	Cable
CCB	Control Circuit Breaker
CCH	Crankcase Heater
CMM	Compressor Motor
cPCO	Carel Programmable Logic Controller
DMFA	Damper Motor Fresh Air
DMRA	Damper Motor Return Air
DMSA	Damper Motor Spill Air
EVD	Electronic Expansion Valve Driver
EEV	Electronic Expansion Valve
ETH	Earth
FB	Filter Board
FRB	Fault Relay Board
IBB	Insulated Busbar
IFCB	Indoor Fan Circuit Breaker
IFM	Indoor Fan Motor
MTB	Mains Terminal Block
OFCB	Outdoor Fan Circuit Breaker
OFM	Outdoor Fan Motor
PCLP	P-CLIP
RS	Radio Signal
RV	Reversing Valve
SCB	Socket Circuit Breaker
SPS	Single Phase Socket
TB	Terminal Block
TJ3W	Terminal Junction 3 Way
TR	Transformer
UC8	Unit Controller 8
VSD	Variable Speed Drive
VSDCB	Variable Speed Drive Circuit Breaker

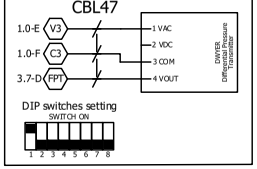
Client Wiring



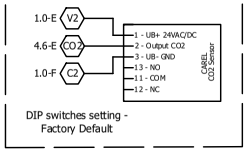
Belimo Drain Sensor EXT-TN-1071375 Wiring NO output



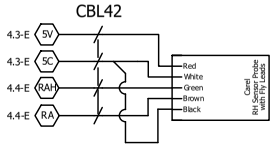
Dwyer Filter Differential Pressure Transmitter MSX-W12-PA Wiring 0-10VDC output



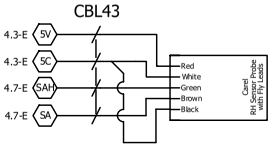
OPTIONAL:
Carel CO2 Sensor DPWQ402000 Wiring 0-10VDC output
Refer to Sheet 4 for connections to Carel controller.



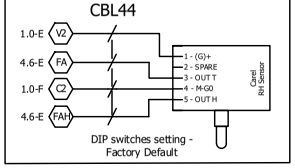
RA Sensors - Carel RH/Temp Sensor DPRC13A000 Wiring (0-5VDC & NTC output)



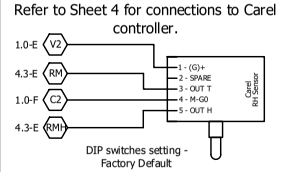
SA Sensors - Carel RH/Temp Sensor DPRC13A000 Wiring (0-5VDC & NTC output)



FA Sensor - Carel RH/Temp Sensor DPPC112000 (0-10VDC output)



Room Sensor - Carel RH/Temp Sensor DPPC112000 (Supplied Loose)
Refer to Sheet 4 for connections to Carel controller.



REV	MODIFICATION	DATE	ECN	APVD
C	Renamed circuit breakers. Revised and added note on ID fan connection to TB29 and TB36T. Added clarity to expansion module.	12-10-23	5116	LC

temperzone

Client Wiring

Drawn: L.C
Date: 22-05-20
Apprvd: Pyu

Title: OPA1410 / 1710 / 2110RLTM4FDPQ-S1 R32 UC8 Wiring Schematic

Drawing No: 291-003-281
SHEET 8 OF 8

Rev: C