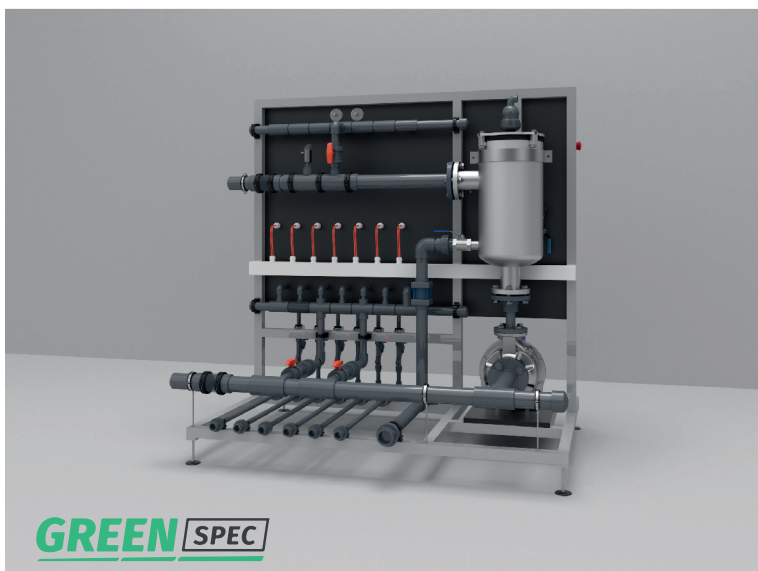


GSU-J



GREEN SPEC



GREEN SPEC

1. Pumps GSU-J

Item	Unit	Description	Features	Control	Capacity
1*	GSU - J	System Pump - P01	0,25 kW / 380 V / 50 Hz	VFD (Variable Freq.)	20 m3 / hr / 2,9 bar

*For more information about pumps capacities, are available on Special Request

2. Dosing System GSU-J

Item	Unit	Description	Features	Control	Capacity
1	GSU - J	Channel 1 - A	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.
2	GSU - J	Channel 2 - B	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.
3	GSU - J	Channel 3 - C	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.
4	GSU - J	Channel 4 - D	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.
5	GSU - J	Channel 3 - E	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.
6	GSU - J	Channel 4 - F	Venturi + Flowmeter	N/C 24 VDC - Pulse	20 - 200 lts/hr.

3. Automation GSU-J

Item	Unit	Description	Features	Control	Capacity
1	GSU - J	I/O Module	AFPD0202 + AFP LITE	In/Outs Unit	47 inputs/ 45outputs
2	GSU - J	EC - Sensor + transmitter	442120 - Inductice EC	EC - Fertilizer	1
3	GSU - J	pH - Sensor + transmitter	442201 - pH	pH - Fertilizer	2

4. Manual Filtration HNET DN50

Item	Unit	Description	Features	Control	Capacity
1	GSU - J	Pump P01	HNET 60- 100 mic	Manual	40 m3 / hr / 5,2 bar

6. Fertilizer Tanks

Item	Unit	Description	Features	Control	Capacity
1	GSU - J	Tk 01 FG-320	A	Filling / level alarm	320 lts
2	GSU - J	Tk 02 FG-320	B	Filling / level alarm	320 lts
3	GSU - J	Tk 03 FG-320	C	Filling / level alarm	320 lts
4	GSU - J	Tk 04 FG-320	D	Filling / level alarm	320 lts
5	GSU - J	Tk 05 FG-320	E	Filling / level alarm	320 lts
6	GSU - J	Tk 06 FG-320	F	Filling / level alarm	320 lts

7. Fresh Water Tank

Item	Unit	Description	Features	Control	Capacity
1	GSU - J	Tk 07 FG-2000	G	Filling / level alarm	2000 lts

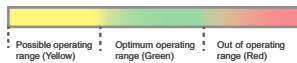
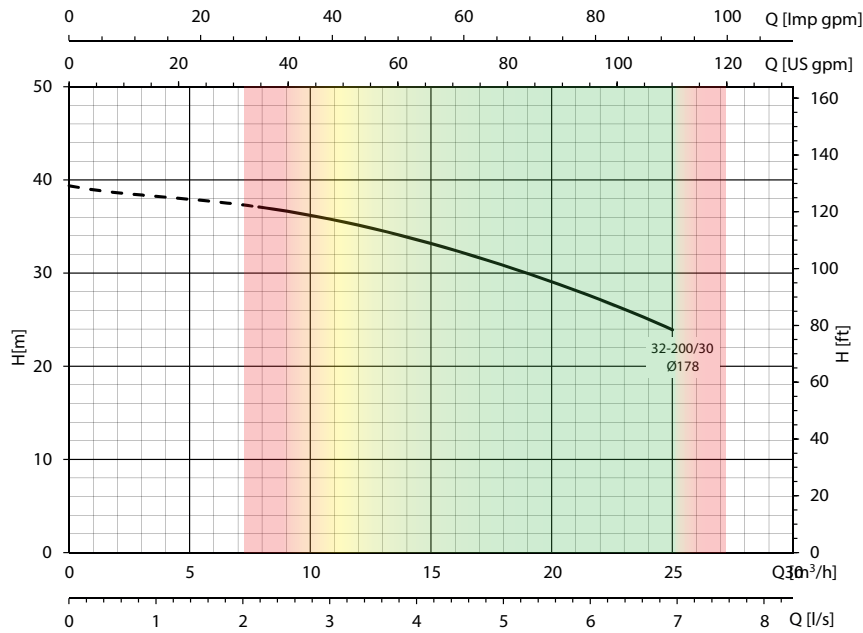
PUMPS (P01) - TECHNICAL DATA



Motor Data

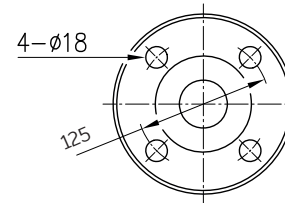
Item	Unit	Pumps	Power [Kw]	Voltage [V]	Frequency [Hz]	Efficiency	cos phi [%]	Full load current [A]
1	GSU-J	P01	3kW / 2 Poles	380 /3P	50	IE3	0,79	7.81

- Performace Curve



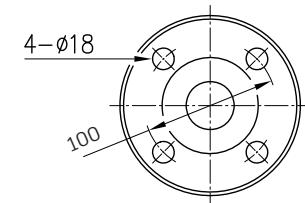
- Inlet & Outlet Dimensions

Inlet



DN 50

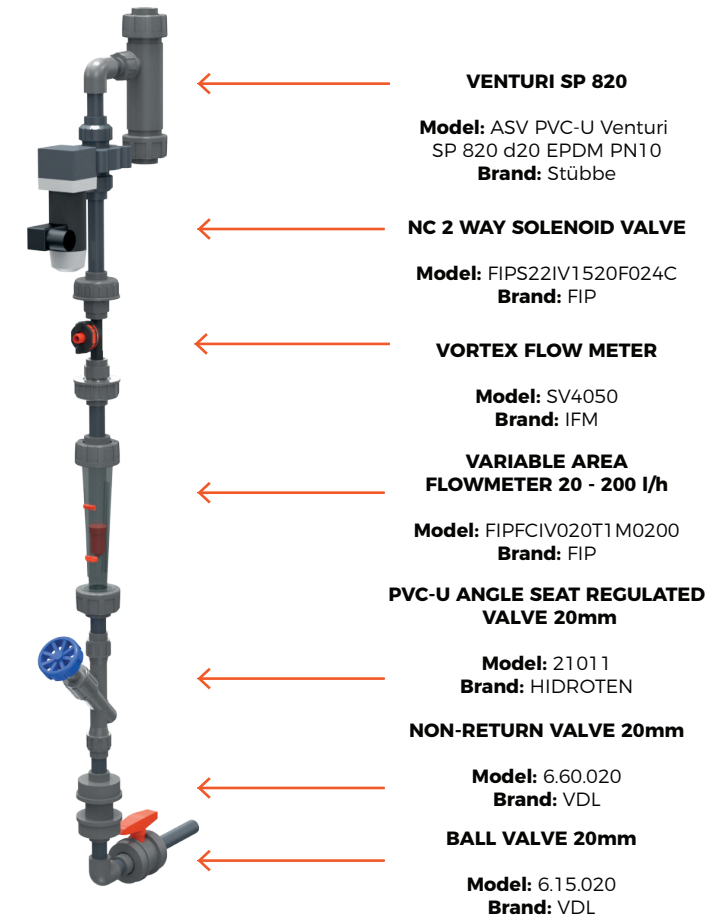
Outlet



DN 32

DOSING CHANNELS

DOSING CHANNELS D01/D06 - VS - 200



VENTURI SP 820

Model: ASV PVC-U Venturi SP 820 d20 EPDM PN10
Brand: Stübbe

NC 2 WAY SOLENOID VALVE

Model: FIPS22IV1520F024C
Brand: FIP

VORTEX FLOW METER

Model: SV4050
Brand: IFM

VARIABLE AREA FLOWMETER 20 - 200 l/h

Model: FIPFCIV020T1M0200
Brand: FIP

PVC-U ANGLE SEAT REGULATED VALVE 20mm

Model: 21011
Brand: HIDROTEN

NON-RETURN VALVE 20mm

Model: 6.60.020
Brand: VDL

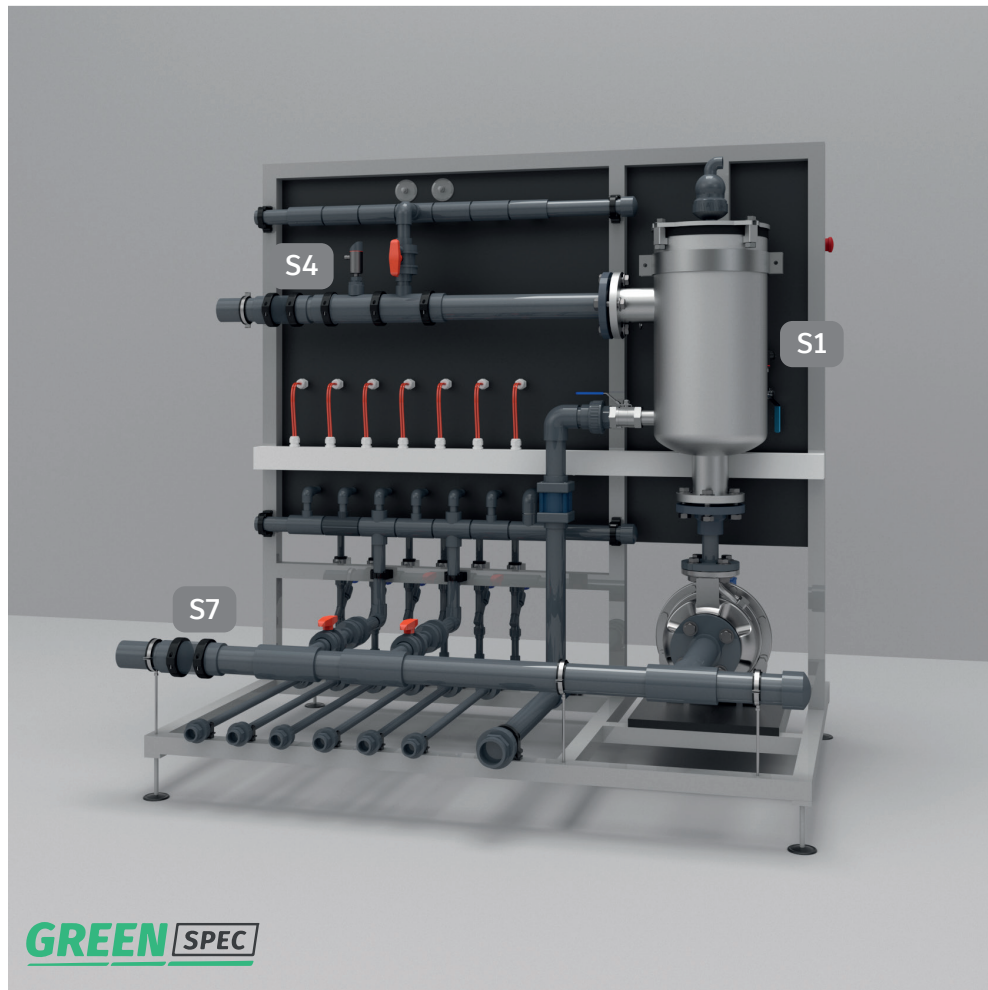
BALL VALVE 20mm

Model: 6.15.020
Brand: VDL

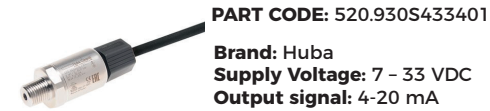
D01 / D06-VS-200		DOSING CHANNEL (A, B, Acid, Neutrox)		
Item	Capacity 20 - 200 l/hr.	PUMP FLOW		
1	Automatic Operation	✓	Included	N/C Valve
	EC Setpoint Based Program	✓		
	Consumption Counter by Time (day counter)	✓		
2	Default Range Calibration	✓	Included	Needle Valve
3	Digital Active Flow Measurement	✓	Included	lts/min FLS
4	Pulse Dosing	✓	Included	N/C Valve
5	Proportional Dosing	✓	Included	FLS + N/C
6	ORP/Redox Sensor Signal Control	⊘	Extra	Sensor
7	Manual Operation	✓	Included	N/C Valve

INSTRUMENTATION

INSTRUMENTATION PRESSURE, FLOW, EC, pH & LEVEL



S1 - Pressure Sensor



PART CODE: 520.930S433401

Brand: Huba
Supply Voltage: 7 - 33 VDC
Output signal: 4-20 mA

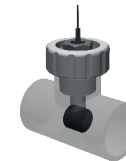
S2 - pH Sensor



PART CODE: 4401.1

Brand: Greenspec
Supply Voltage: 15 VDC
Output signal: 4-20 mA

S3 - EC Sensor



PART CODE: 4202.1

Brand: Greenspec
Supply Voltage: 15 VDC
Output signal: 4-20 mA

S4 - Flow Sensor



PART CODE: SA4100

Brand: ifm
Supply Voltage: 18 - 30 VDC
Output signal: 4-20 mA

S5 - Flow Sensor*



PART CODE: SV4050

Brand: ifm
Supply Voltage: 8 - 33 VDC
Output signal: 4-20 mA

S6 - Sample Valve



PART CODE: 21101

Brand: Hidroten
Input Size: 1/2"
Output Size: DN15

S7 - Check Valve

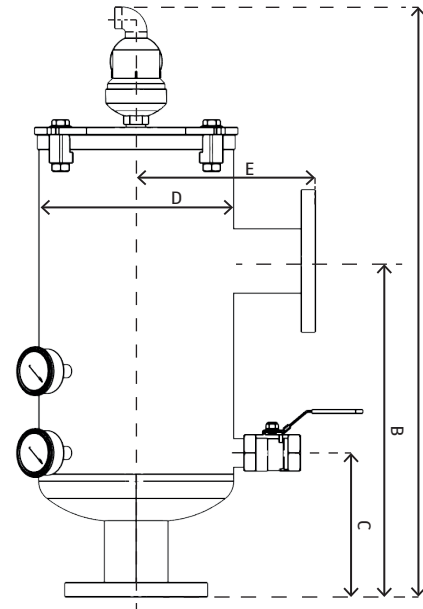
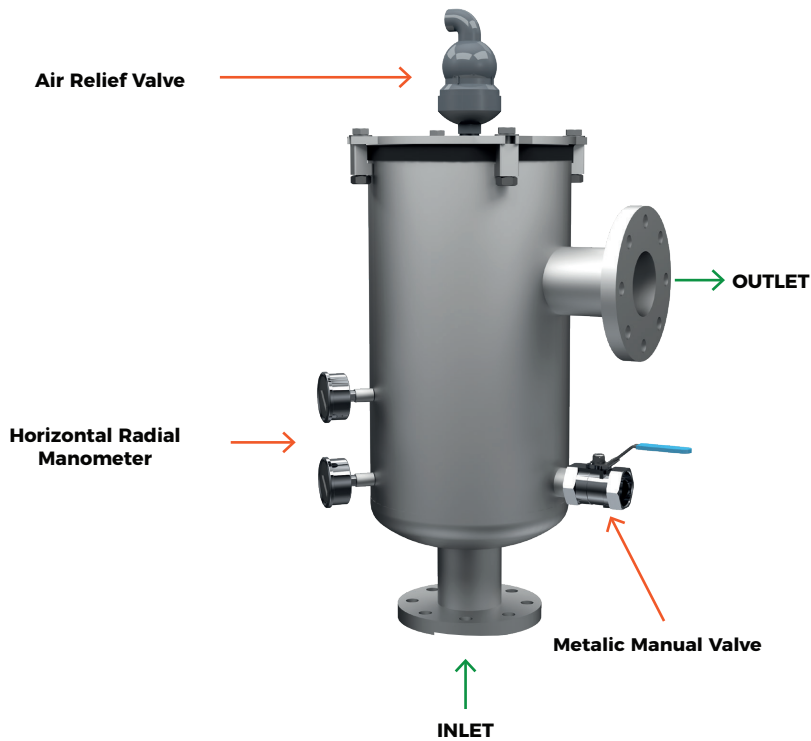


PART CODE: 15312

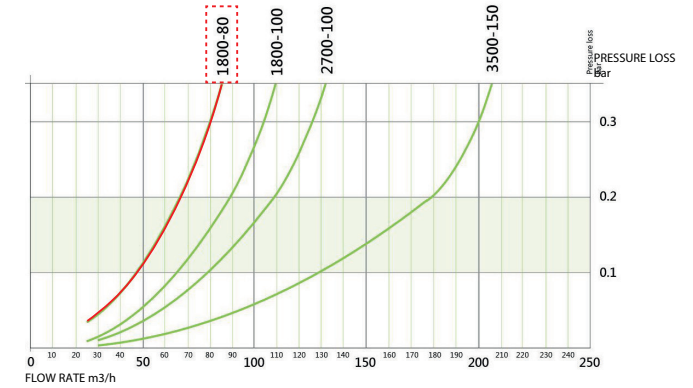
Brand: Hidroten
Ø Size: 63 mm

FILTRATION

MANUAL FILTER HNET (SCF01)



PRESSURE LOSS CURVE

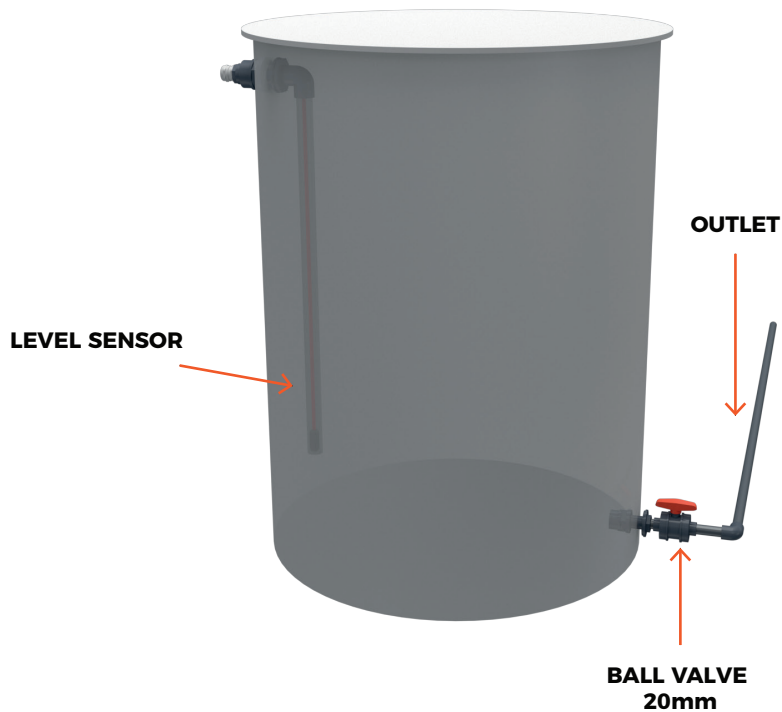


1. HNET 60 - 100 mic

Item	Unit	Description	Capacity
1	HNET-1800-2	Filtering Area	1800 cm ²
2	HNET-1800-2	Body and Lid	INOX AISI 304, 316, DUPLEX
3	HNET-1800-2	Steel Support Basket	INOX AISI 316
4	HNET-1800-2	Steel Filter Mesh	INOX AISI 316
5	HNET-1800-2	Gaskets	EPDM
6	HNET-1800-2	Drain Valve	Ball Valve
7	HNET-1800-2	Air Valve	Relief Valve
8	HNET-1800-2	Pressure Sensor Connection	INOX AISI 304, 316, DUPLEX
9	HNET-1800-2	Pressure Gauges	Glycerin
10	HNET-1800-2	Maximum Temperature [°C]	60
11	HNET-1800-2	Minimum Temperature [°C]	5
12	HNET-1800-2	Maximum Flow Range [m ³ /h]	40 - 220
13	HNET-1800-2	Filtration [µm]	20 - 800
14	HNET-1800-2	Power Supply	200 / 440 Vac, 50/60Hz
15	HNET-1800-2	Pressure	>= 4 bar
16	HNET-1800-2	Programming	ΔP, Δt, manual
17	HNET-1800-2	Class	IP 65

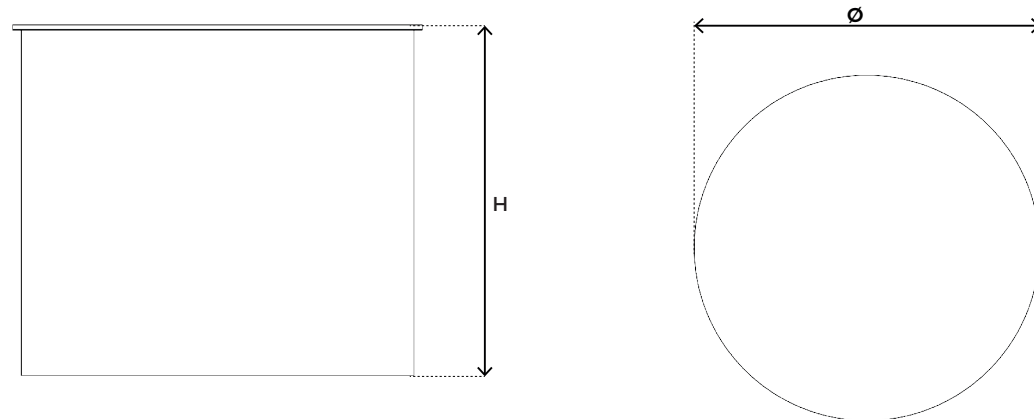
TANKS

6 tank x 320 liters - FERTILIZER TANKS
1 tank x 2000 liters - FRESH WATER TANK

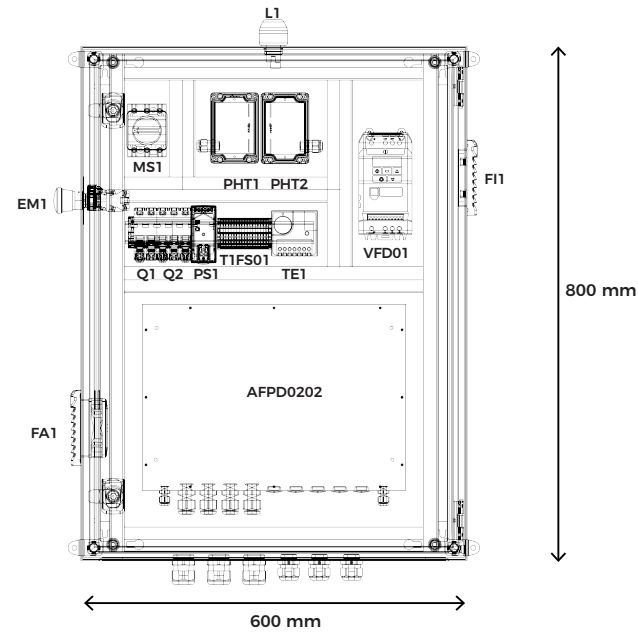


1. GSU - J 320L Fertilizer Tanks						
Item	Unit	Position	Description	Features	Control	Capacity
1	GSU - J	Fertilizer Tanks	Polyethylene cilindrical Tank. Dimensions: Ø 760mm x H 1040mm	- Chemical Resistance. - Abrasion Resistance.	Level control system and alarm in each tank	6 tank x 320 liters
2	GSU - J	Fertilizer Tanks	Manual Valve	Ball Valve	Ball Valve	20 mm
3	GSU - J	Fertilizer Tanks	Level Sensor	- Analog Level Sensor.	Pressure Sensor	0 - 0.25 bar

2. GSU - J 2000L Fresh Water Tanks						
Item	Unit	Position	Description	Features	Control	Capacity
1	GSU - J	Fresh Water Tank	Polyethylene cilindrical Tank. Dimensions: Ø 1540mm x H 1370mm	- Chemical Resistance. - Abrasion Resistance.	Level control system and alarm in each tank	1 tank x 2000 liters
2	GSU - J	Fresh Water Tank	Manual Valve	Ball Valve	Ball Valve	20 mm
3	GSU - J	Fresh Water Tank	Level Sensor	- Analog Level Sensor.	Hydrostatic Submersive Pressure Sensor	0 - 0.25 bar



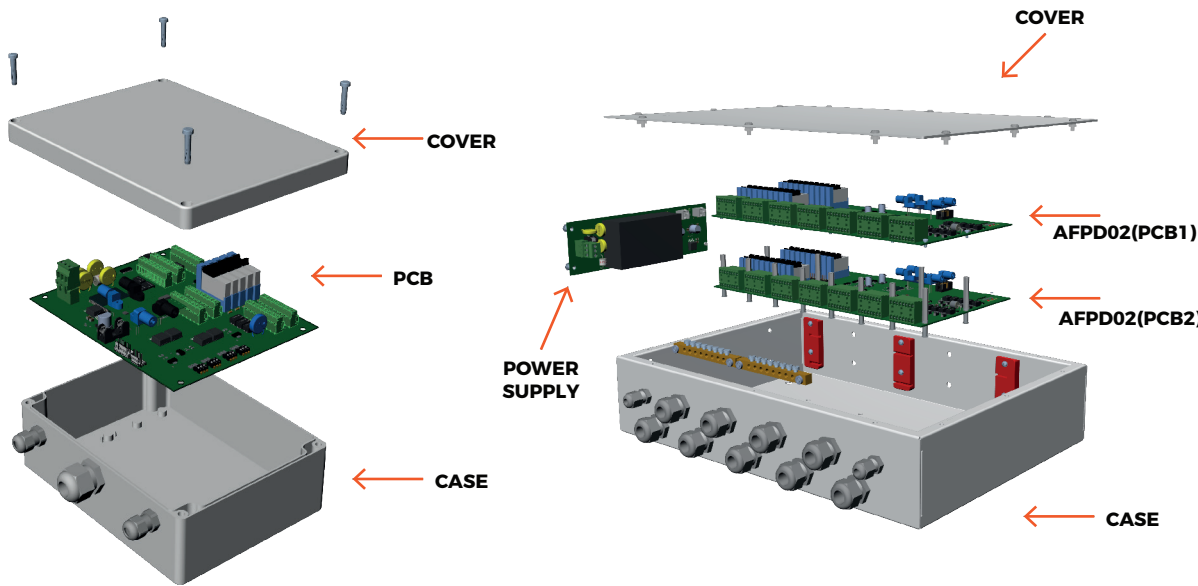
CONTROL PANEL - I/O MODULE (AFPD)



1. Control Panel GSU

Item	Unit	Position	Description	Brand	Control	Capacity
1	GSU - J	L1	Ligh status ON/OFF/Alarm	Auer Signal	Ligh status ON/OFF/Alarm	N/A
2	GSU - J	EM1	Emergency Stop Button	Schneider Electric	General Emergency Stop	N/A
3	GSU - J	MS1	Main Switch	Schneider Electric	380 VAC Main Switch Protection	12 / 380 VAC
4	GSU - J	Q1	Breaker 2P 6A	Schneider Electric	220 VAC DC Power Supply Protection	6 A / 220 VAC
5	GSU - J	Q2	Breaker 3P 10A	Schneider Electric	380 VAC Pump Protection	10 A / 380 VAC
6	GSU - J	T1	Terminal Block	Phoenix Contact	Terminal Block for conections	N/A
7	GSU - J	TE1	Thermostat	Rittal	220 VAC Fan Unit	220 VAC
8	GSU - J	PS1	Power Supply 24 VDC	Mean Well	220 VAC Power Supply 24VDC	4 A / 24 VDC
9	GSU - J	VFD01	Variable Frequency Driver 4kW Pump	Invertek	Pump Control P01 - 4 kW	4 kW / 380VAC
10	GSU - J	AFPD0202	I/O Module	GSC	24 VDC AFP Lite	N/A
11	GSU - J	FI1	Filter Unit	Rittal	Filter Unit	N/A
12	GSU - J	FA1	Fan Unit	Rittal	220 VAC Fan Unit	220VAC / 50 m3/h
13	GSU - J	PHT1	pH Transmitter	GSC	pH Transmitter	N/A
14	GSU - J	PHT2	pH Transmitter	GSC	pH Transmitter	N/A
15	GSU - J	FS02	Fuse Holder	Phoenix Contact	Fuse Holder	N/A

I/O MODULE CONFIGURATION



AFP LITE

AFPD0202

1. I/O MODULE (AFP)

I/O Module	Description	Analog Input	Digital Input	Digital Output	
AFPD0202	pH Control	1			
	pH Monitor	1			
	EC Control	1			
	Main Flow	1			
	Filter inlet pressure	1			
	Filter Outlet pressure	1			
	Dosing channel 1	1			
	Dosing channel 2	1			
	Dosing channel 3	1			
	Dosing channel 4	1			
	Dosing channel 5	1			
	Dosing channel 6	1			
	Water Tank level	1			
	Fertilizer tank level 1	1			
	Fertilizer tank level 2	1			
	Fertilizer tank level 3	1			
	Fertilizer tank level 4	1			
	Fertilizer tank level 5	1			
	Fertilizer tank level 6	1			
	Switch pump temperature			1	
	Pump start				1
	Dosing channel 1				1
	Dosing channel 2				1
	Dosing channel 3				1
	Dosing channel 4				1
	Dosing channel 5				1
	Dosing channel 6				1
Water tank inlet valve open				1	
Water tank inlet valve close				1	
Cabinet light				3	
AFP LITE	CO2 sensor	1			
	Light sensor	1			
	Temperature	1			
	Relative Humidity	1			
TOTAL		23	1	12	
		Analog Input	Digital Input	Digital Output	

CLIMATE SENSORS

CO₂ Sensor



1. Sensor RPCO2

Item	Description	Capacity
1	Power Supply	24 VAC/DC
2	Data Points	Carbon dioxide (CO ₂)
3	Operating Range, Humidity	0...98% r.H., pollutant-free, non-precipitating air
4	Measuring Range, CO ₂	multi-range switching (selectable via DIP switches) 0...2000 ppm; 0...5000 ppm; 0...10000 ppm
5	Sensor CO ₂	optical NDIR sensor (non-dispersive infra-red technology) with automatic and manual calibration
6	Measuring Range	0...2000 ppm / 0...5000 ppm / 0...10000 ppm
7	Output	0 - 10V/ 4-20mA, 3-wire connection
8	Dimensions	90,9 x 80 x 48mm

Temperature + Humidity Sensor



2. Sensor RPFTF

Item	Description	Capacity
1	Power Supply	24 V AC (± 20 %); 15...36 V DC for U variant 15...36 V DC for I variant
2	Sensors	Digital humidity sensor with integrated temperature sensor
3	Measuring Range, Humidity	0...100 % RH
4	Output, Humidity	0 -10 V or 4...20 mA
5	Measuring Range, Temperature	multi-range switching with temperature: 4 switchable measuring ranges -35...+35 °C; -35...+75 °C; 0...+50 °C; 0...+80 °C
6	Output, Temperature	0 -10 V or 4...20 mA or Ohm value

Apogee ePAR

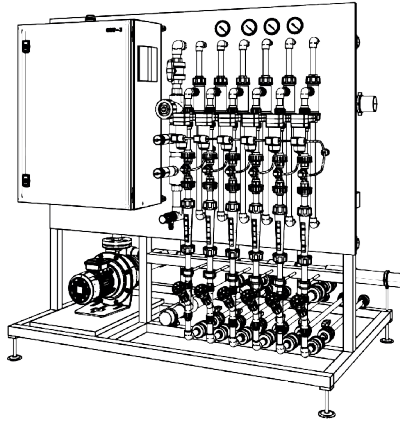


3. APOGEE ePAR

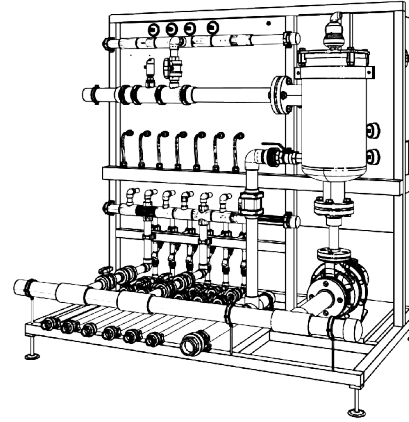
Item	Description	Capacity
1	Power Supply	12 to 24 VDC
2	Sensitivity	0.004 mA per μmol m ⁻² s ⁻¹
3	Output Type	4 to 20 mA
4	Resolution	0.1 μmol m ⁻² s ⁻¹
5	Measuring Range	0 to 4000 μmol m ⁻² s ⁻¹
6	Response Time	Less than 1 ms
7	Spectral Range	383 to 757 nm ± 5 nm (wavelengths where response is greater than 50 % of maximum)
8	Dimensions	30.5 mm diameter, 37 mm height

DIMENSIONS

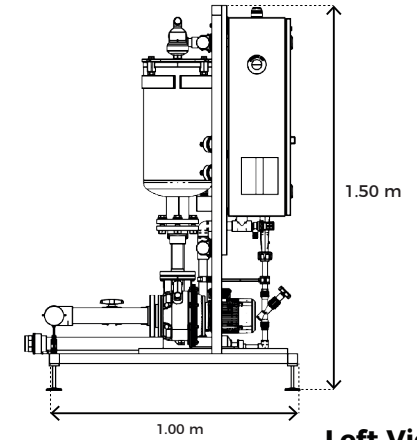
GSU-J



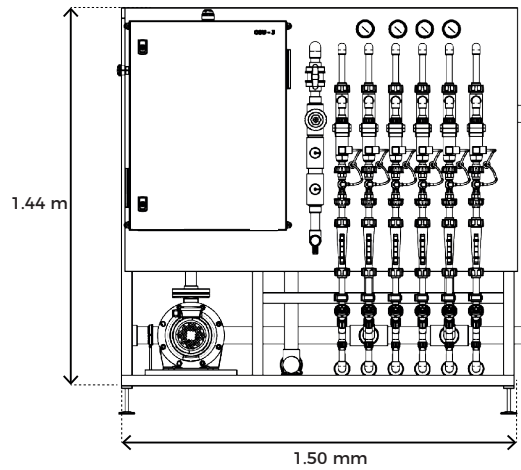
Isometric View 1



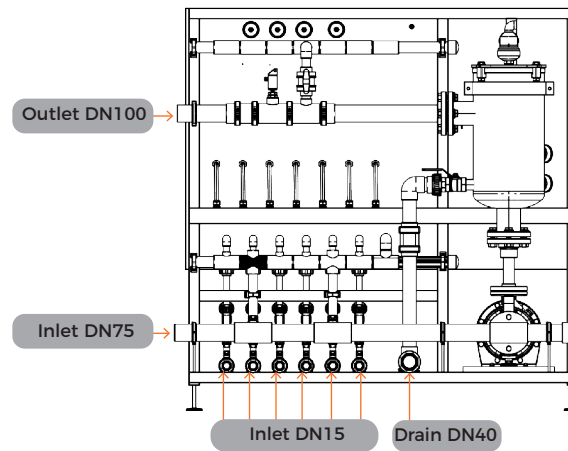
Isometric View 2



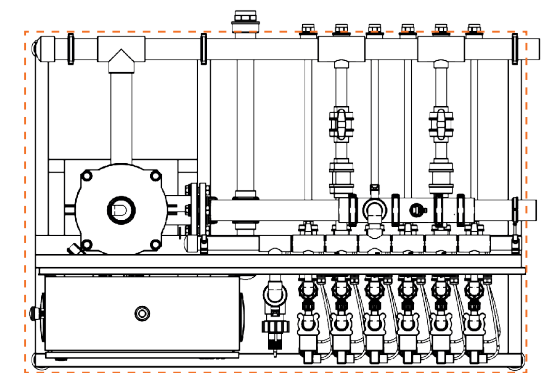
Left View



Front View



Rear View

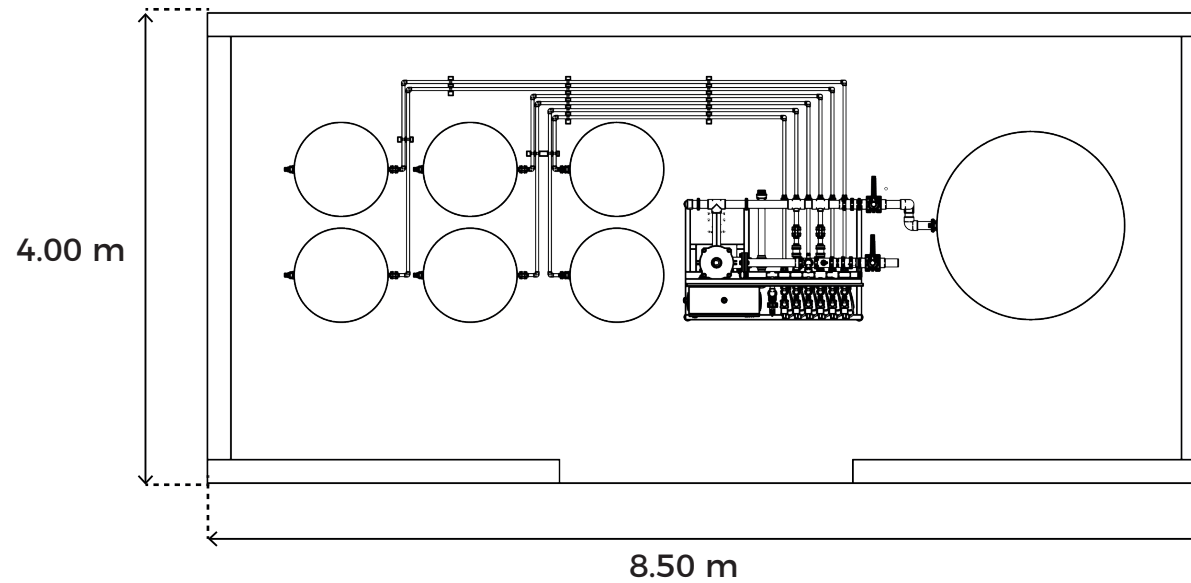
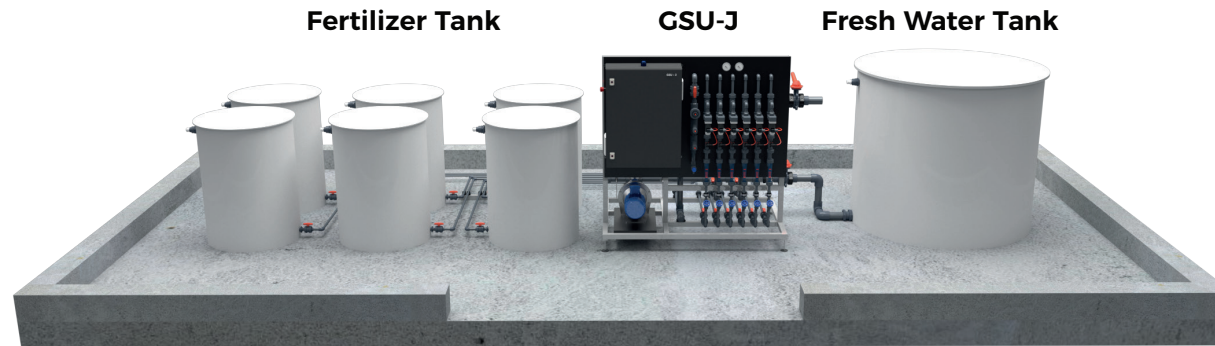


Footprint: 1.50 m²

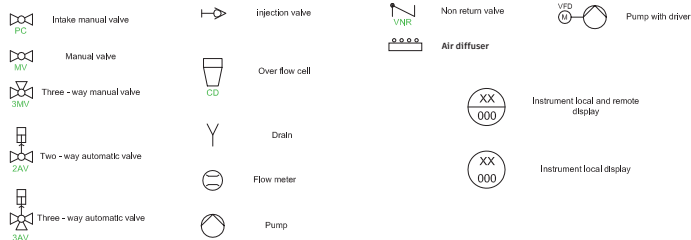
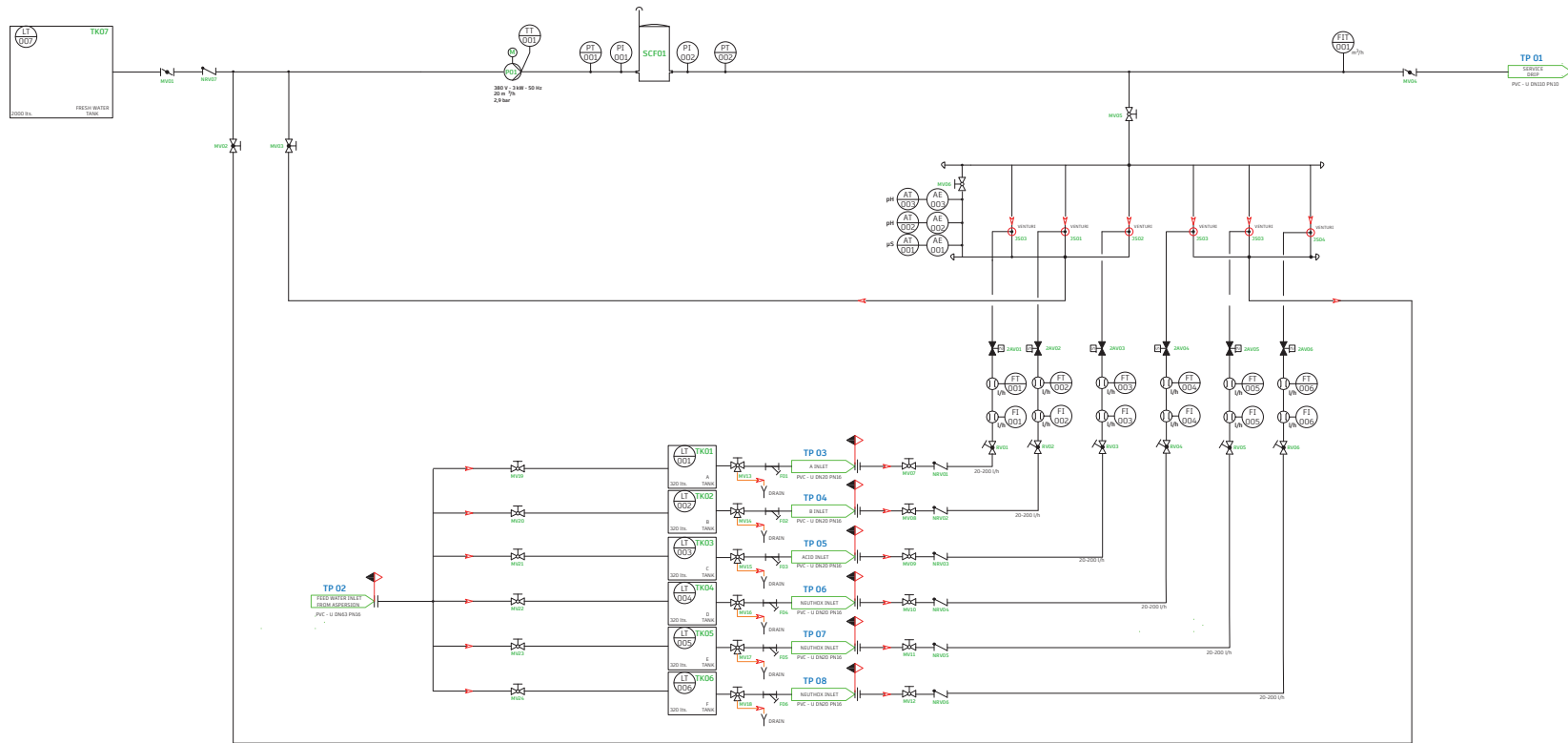
Plant View

FOOT PRINT

IRRIGATION SYSTEM



Footprint: 34.00 m²



GREEN SPEC Greenspec BV
Zernikepark 129747 AN
Groningen,
The Netherlands

Contact:
+(41) 765851837
info@greenspec.nl

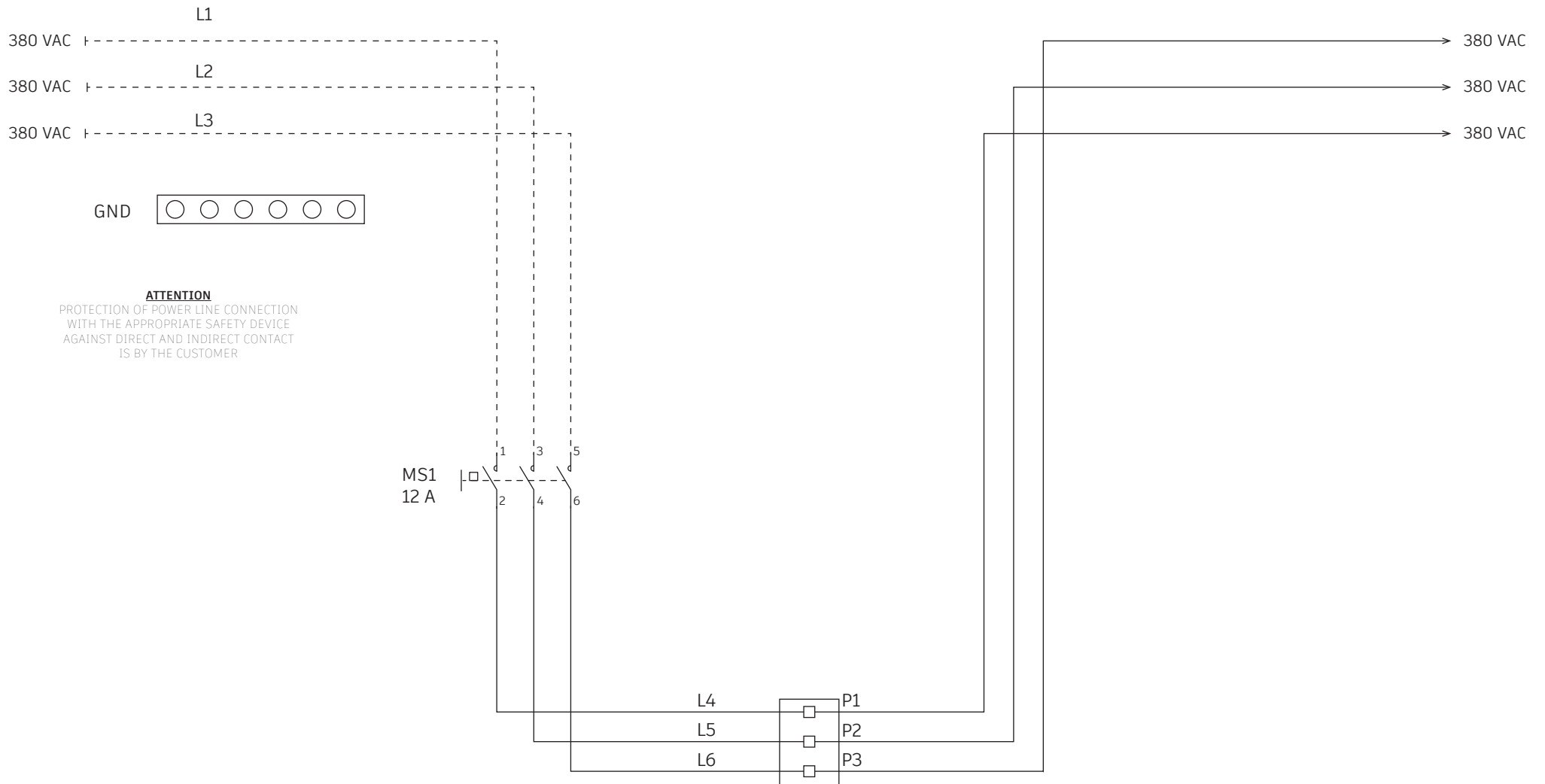
OWNER:
LOCATION:
PROJECT:
SYSTEM: GSU - J
CONTENT: DIAGRAMA P&ID
BOARD: TDP - IPM
DESIGNER: D. L.
CHECKED BY: M. Y.
DATE: 15/03/2024
UPDATE: 15/03/2024

REV.	DATE	MODIFICATION	SIGN.	PAGE:
				1 / 1

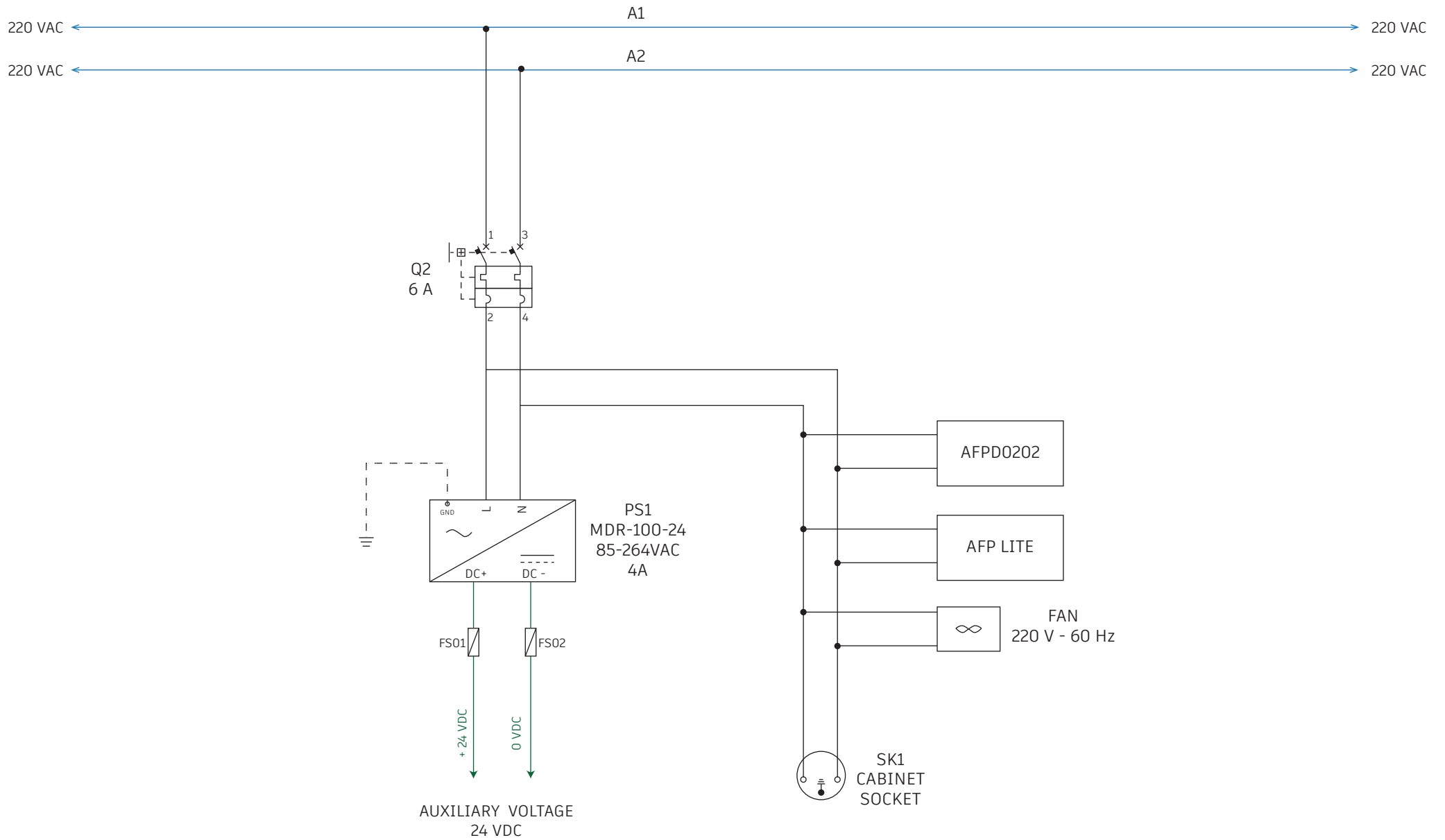
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Symbol	Root	Function
	QF	SEZIONATORE AUTOMATICO DI POTENZA AUTOMATIC POWER DISCONNECTING SWITCH SECTIONNEUR AUTOMATIQUE DE PUISSANCE SECCIONADOR AUTOMATICO DE POTENCIA AUTOMATISCHEN LEISTUNG TRENNSCHALTER
	QM	INTERRUTTORE GENERALE AUT MAGNETICO AUT MAIN GENERAL SWITCH INTERRUPTEUR GENERAL AUT MAGNETIQUE INTERUPTOR GENERAL AUT MAGNETICO GENERSCHALTER AUT MAGNETISCH
	QF	INTERRUTTORE AUTOMATICO DI POTENZA POWER SUPPLY SWITCH INTERRUPTEURAUTOMATIQUE DE PUISSANCE INTERUPTOR AUT. DE POTENCIA LEISTUGSSCHALTER AUTO
	QM	INTERRUTTORE AUT MAGNETICO DIFFERENZIALE AUT DIFFERENTIAL MAGNETIC SWITCH INTERRUPTEUR AUT MAGNETIQUE DIFFERENTIEL INTERUPTOR AUT MAGNETICO DIFFERENCIAL AUT DIFFERENTIALEN MAGNETISCHEN SCHALTER
	KM	BOBINA CONTATTORE POTENZA POWER CONTACTOR REEL BOBINE CONTACTEUR PUISSANCE BOBINA CONTACTOR POTENCIA LEISTUNGSKONTAKTOR ROLLE
	KA	RELE' AUSILIARIO AUX RELAY RELE AUX RELE AUXILIAR NEBENRELAIS
	YV	ELETTROVALVOLA SOLENOID VALVE ELECTROVANNE ELECTROVALVULA ELEKTROVENTIL
	K	CONTATTO AUSILIARIO NORMALMENTE CHIUSO AUX CONTACT NORMALLY CLOSED CONTACT AUX NORMALMENT FERME CONTACTOS AUX NORMALMENTE CIERRE NEBENKONTAKT NC
	K	CONTATTO AUSILIARIO NORMALMENTE APERTO AUX CONTACT NORMALLY OPENED CONTACT AUX NORMALMENT OUVERT CONTACTOS AUX NORMALMENTE ABIERTO NEBENKONTAKT NO
	KM	CONTATTI CONTATTORE DI POTENZA POWER CONTACT CONTACT CONTACTEUR PUISSANCE CONTACTOR POTENCIA LEISTUNGSKONTAKT
	K	CONTATTI AUSILIARI IN SCAMBIO RELE' RELAY EXCHANGE AUX CONTACTS CONTACT AUX EN ECHANGE CONTACTS AUX EN CAMBIO NEBENKONTAKTE RELAIS
	SP	PRESSOSTATO PRESSURE GAUGE PRESSOSTAT PRESOSTATO DRUCKWÜCHTER
	SQ	FINECORSA NC NO LIMIT SWITCH NC FIN DE COUSE NF TOPA DE RECORDIDA NC ENDAUSCHALTER NC

Symbol	Root	Function
	SQ	SENSORE INDUTTIVO QUADRATO SQUARE INDUCTIVE SENSOR SENSEUR INDUCTIF CADRAT SENSOR INDUCTIVO CUADRATO QUADRATISCHER INDUKTIVSENSOR
	L	INDUTTANZA INDUCTOR INDUCTANCE INDUCTANCIA INDUKTIVITÄT
	S	PULSANTE MANUALE NORMALMENTE APERTO MANUAL PUSH BUTTON NORMALLY OPENED POUSSOIR MANUEL NORMALMENT OUVERT BOTON MANUAL NORMALMENTE ABIERTO HANDKNOPF NO
	S	PULSANTE MANUALE NORMALMENTE CHIUSO MANUAL PUSH BUTTON NORMALLY CLOSED POUSSOIRE MANUEL NORMALMENT FERME BOTON MANUAL NORMALMENTE CIERRE HANDKNOPF NC
	SB	PULSANTE EMERGENZA EMERGENCY PUSH BUTTON POUSSOIR URGENCE BOTON EMERGENCIA FESTER NOTKNOPF
	SA	SELETTORE A CHIAVE DUE POSIZIONI TWO POSITION SWITCH KEY SELECTEUR CLE DEUX POSITION SELECTOR LLAVE DOS POSICION SCHLÜSSELSCHALTUNG ZWEI STELLUNGEN
	HL	LAMPADA LAMP LAMPE LAMPARA LÄMPCHEN
	HL	SEGNALAZIONE QUADRO IN TENSIONE ELECTRIC PANEL VOLTAGE SIGNALING SIGNALISATION TABLEAU ELECTRIQUE SENALACION CUADRO EN TENSION SPANNUNGSANZEIGE SCHALTFELD
	M	MOTORE TRIFASE THREE PHASE MOTOR MOTEUR TRIPHASE MOTOR TRIFASE DREIPHASIGER MOTOR
	M	MOTORE CORRENTE CONTINUA DC MOTOR MOTEUR COURANT CONTINU GLEICHSTROM MOTOR MOTOR CORRIENTE CONTINUA
	XP	PRESA SERVIZIO SOCKET SERVICE PRISE SERVICE TOMA DE SERVICIO BETRIEBSDOSE
	X	MORSETTO TERMINAL BLOCK ETAU ABRAZADERA KLEMME
	XC	MORSETTO CONNETTORE CONNECTOR CONTACT ETAU ABRAZADERA CONECTOR ANSCHLUSSKLEMME

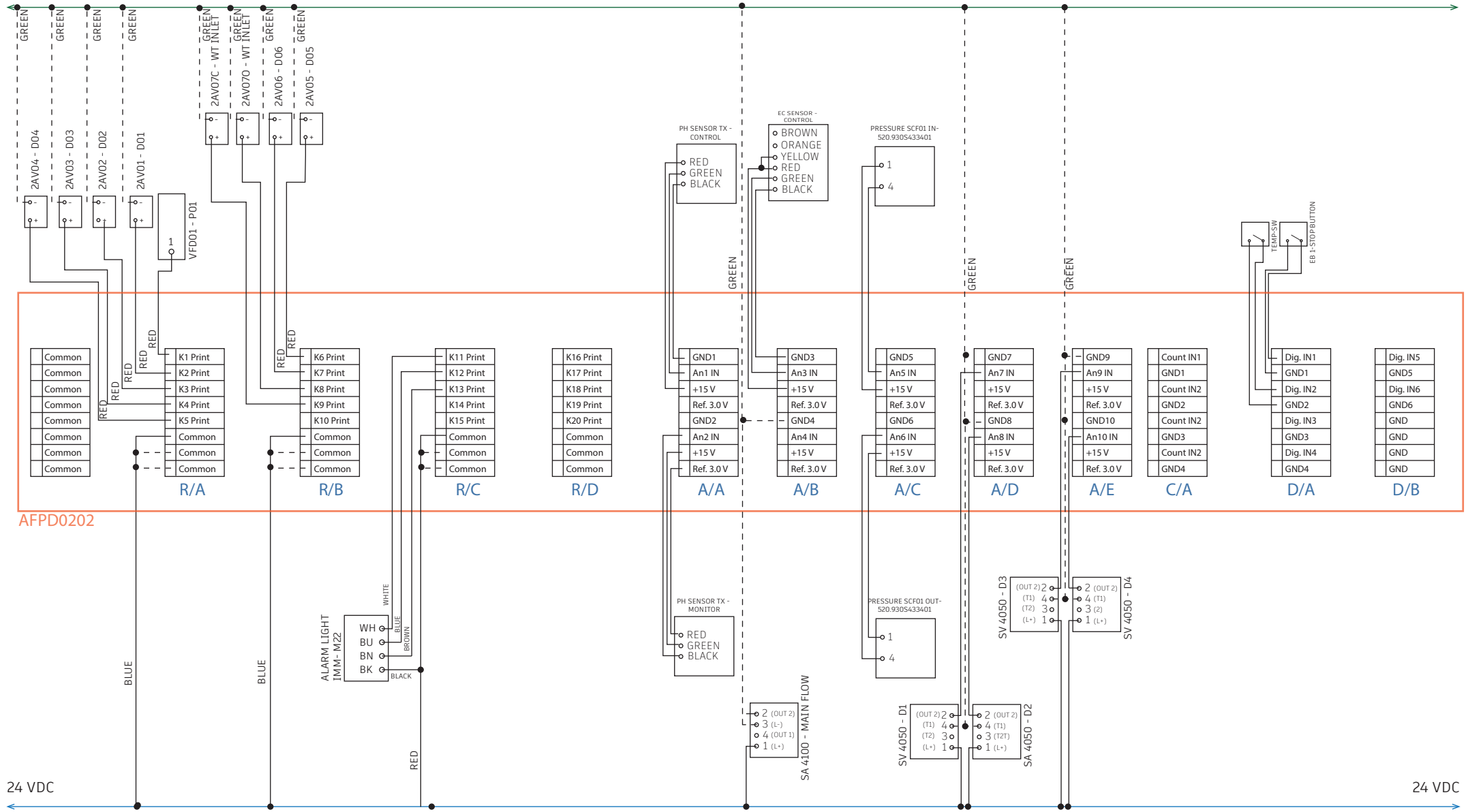


ATTENTION
 PROTECTION OF POWER LINE CONNECTION
 WITH THE APPROPRIATE SAFETY DEVICE
 AGAINST DIRECT AND INDIRECT CONTACT
 IS BY THE CUSTOMER



0 VDC

0 VDC



AFPD0202



Address:
Zernikepark 129747 AN
Groningen,
The Netherlands

Contact:
✉ info@greenspec.nl
☎ +(41) 765851837

OWNER:	
LOCATION:	
PROJECT:	
SYSTEM:	GSU - J
ONTENT:	WIRING DIAGRAM

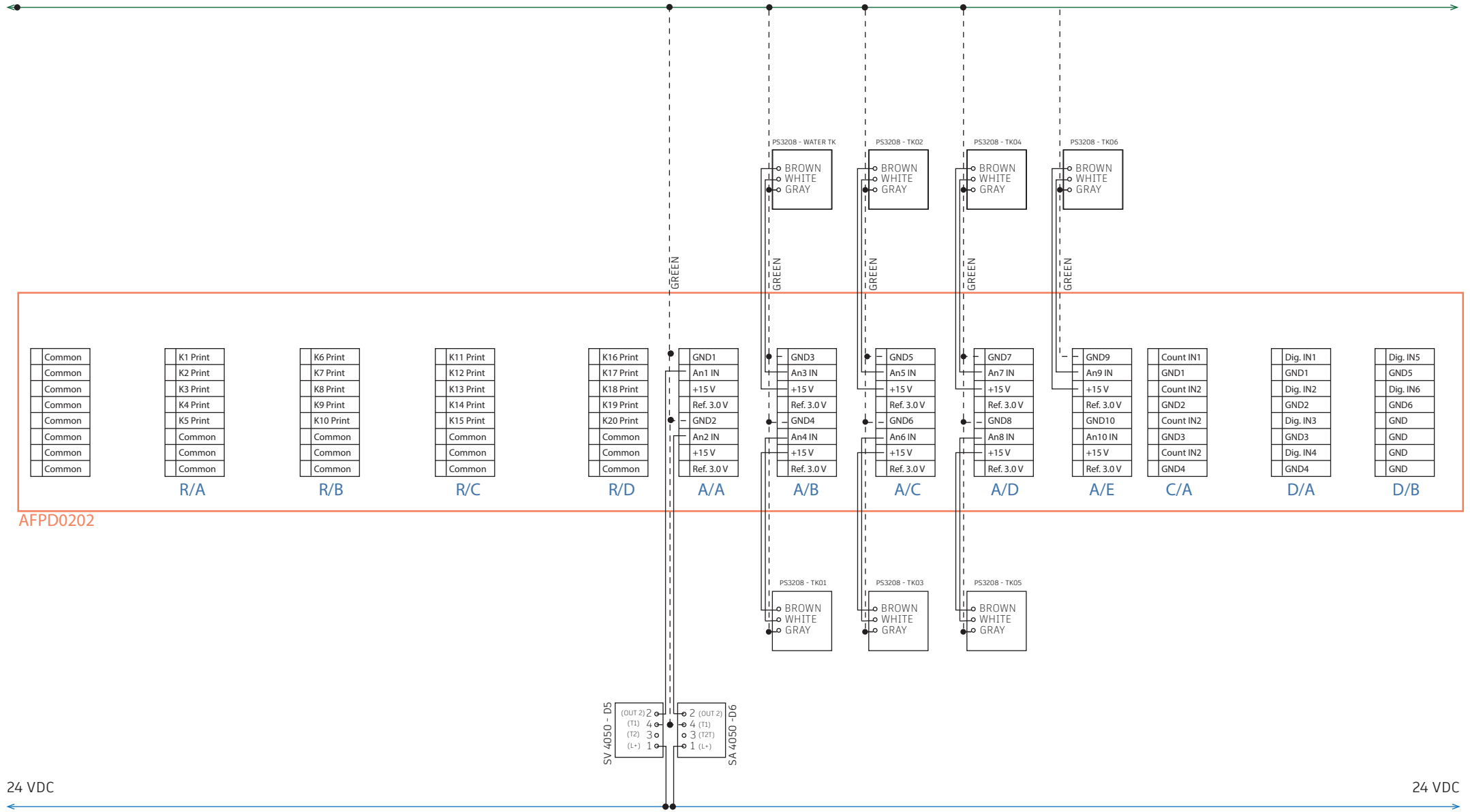
BOARD:	TDP - IPM
DESIGNER:	D. L.
CHECKED BY:	M. Y.
DATE:	
UPDATE:	

REV.	DATE	MODIFICATION	SIGN.

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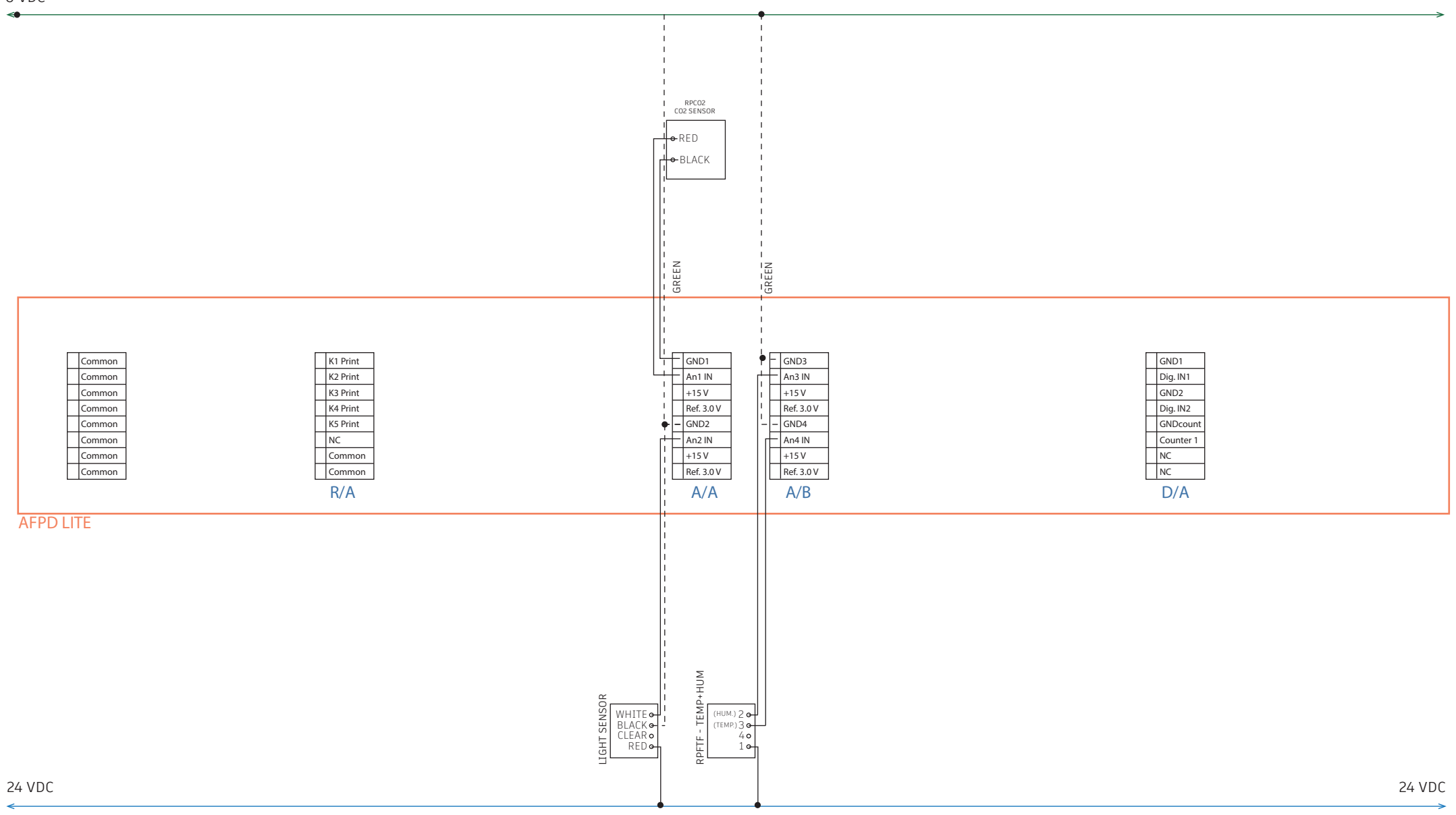
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DESIGNER:	D. L.
CHECKED BY:	M. Y.
DATE:	
UPDATE:	

REV.	DATE	MODIFICATION	SIGN.

AGE :	7 / 7
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