



CUSTOMER:

Customer Name: ALINVEST

PROJECT:

Project Code: E2558

Project Name: ALFAGEN

DOCUMENT INFORMATION:


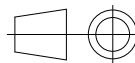
Document Title: Equipment Spider Diagram

Contractor File Name: 2558-3321-TMT-E-DWG-SPD

Contractor Revision Number: A

Customer File Name: -

Customer Revision Number: -

						CONTRACTOR		CONTRACTOR dwg number	Rev. A	Project Code E2558	Project Name ALFAGEN																													
								2558-3321-TMT-E-DWG-SPD		Document Title Equipment Spider Diagram			Scale 1:1																											
A	29/11/2025	INITIAL VERSION			RORI			RORI		RORI	CLIENT			CLIENT dwg number			Rev. -	DESIGNED: RORI			DRAWN: RORI			APPROVED: RORI			Format A3													
Rev.	Date	Revisions description			Designed	Draw	Approved	-				DATE: 18/11/2025			DATE: 18/11/2025			DATE: 18/11/2025			Sheet 1 OF x																			
1					2			3							4					5				6			7				8			9			10			11

POWER AND CONTROL PANEL

r43.31-3321-TMT-GEN01-PCP01

LEGEND

	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY

Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

CONTRACTOR



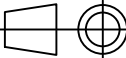
CONTRACTOR dwg number

2558-3321-TMT-E-DWG-SPD

Rev.
A

Project Code
E2558

Project Name
ALFAGEN



CLIENT

CLIENT dwg number

-

Rev.
-

Document Title
Equipment Spider Diagram

Scale
1:1

DESIGNED:

RORI

DRAWN:

RORI

APPROVED:

RORI

Format
A3

DATE:

18/11/2025

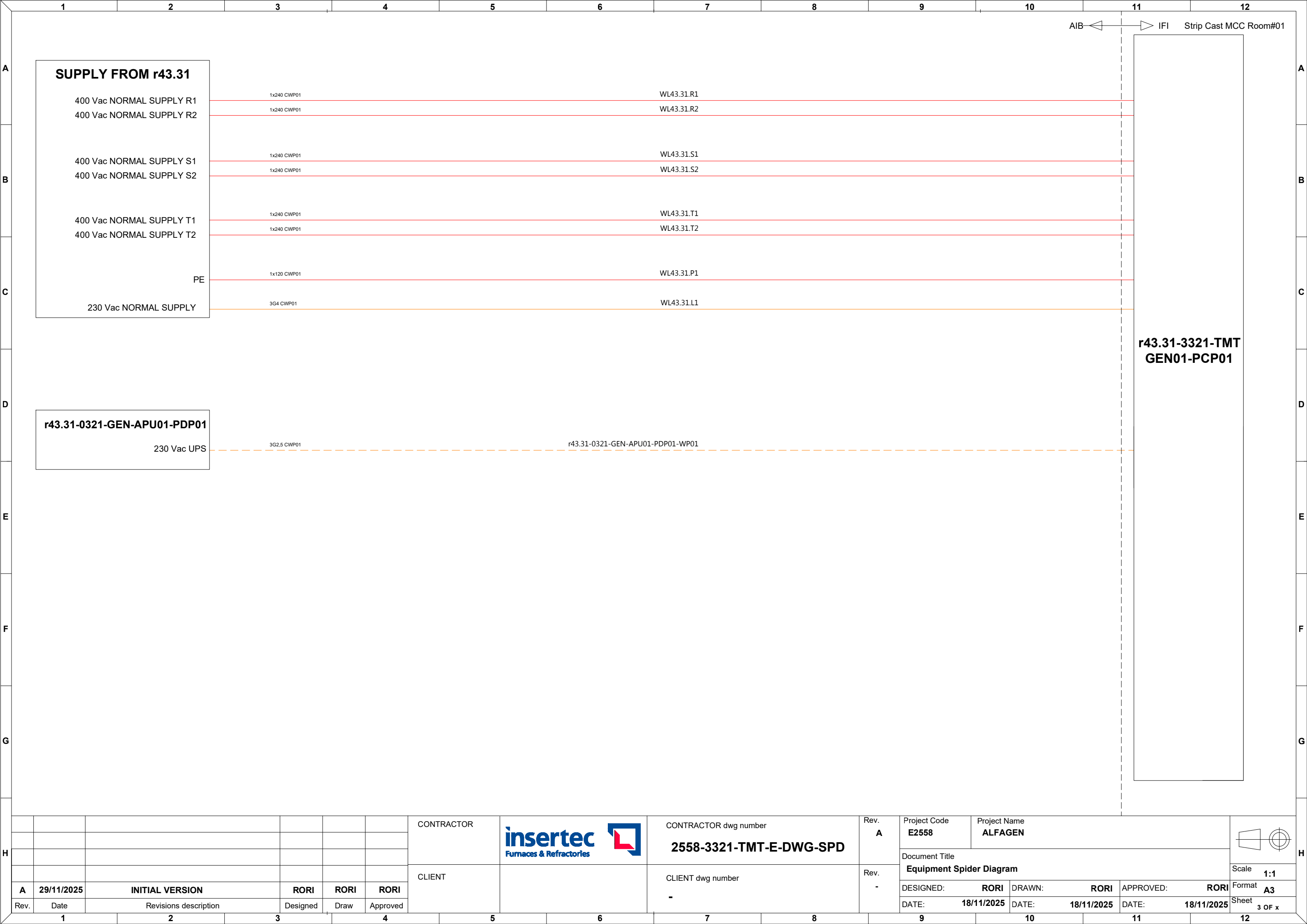
DATE:

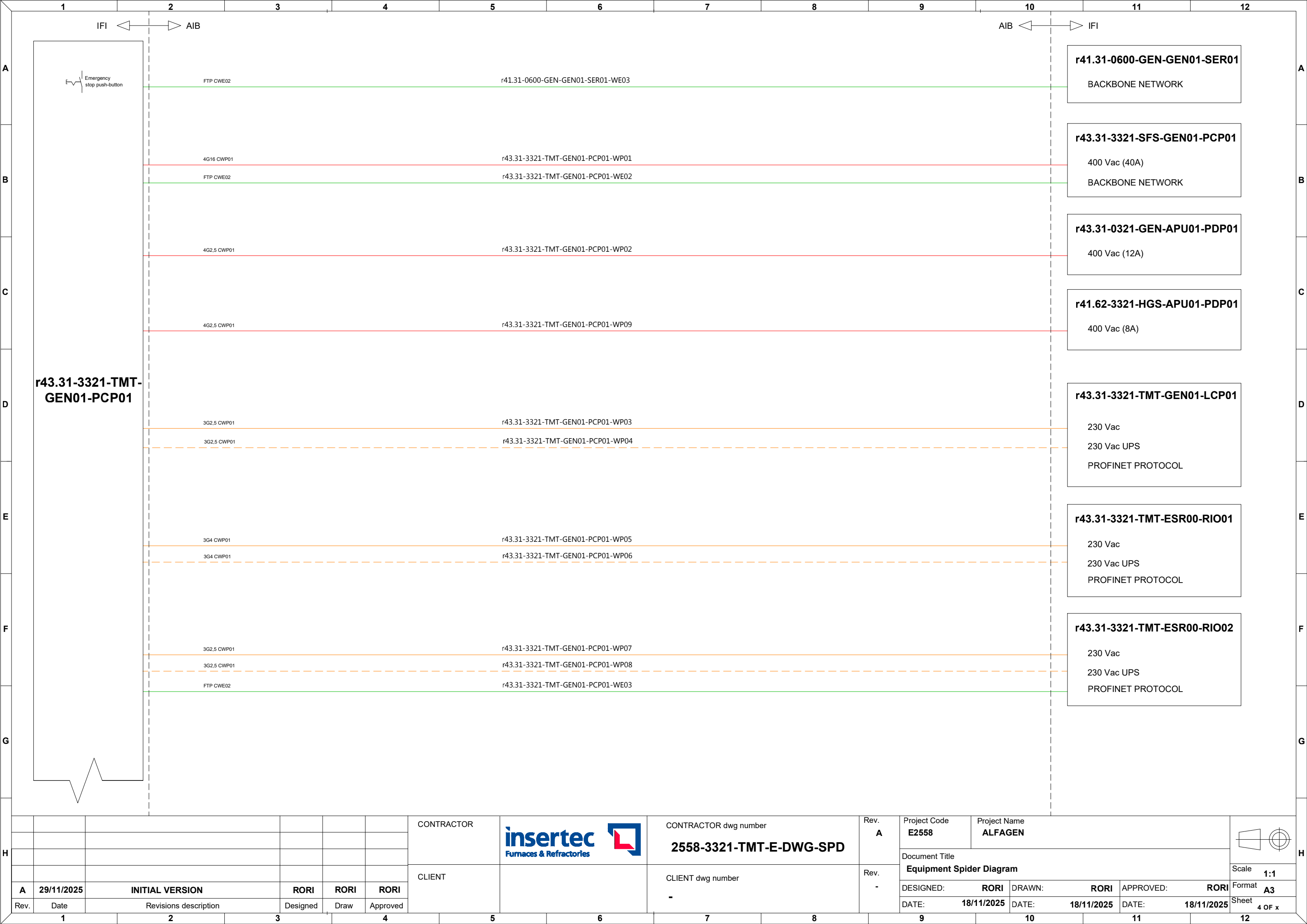
18/11/2025

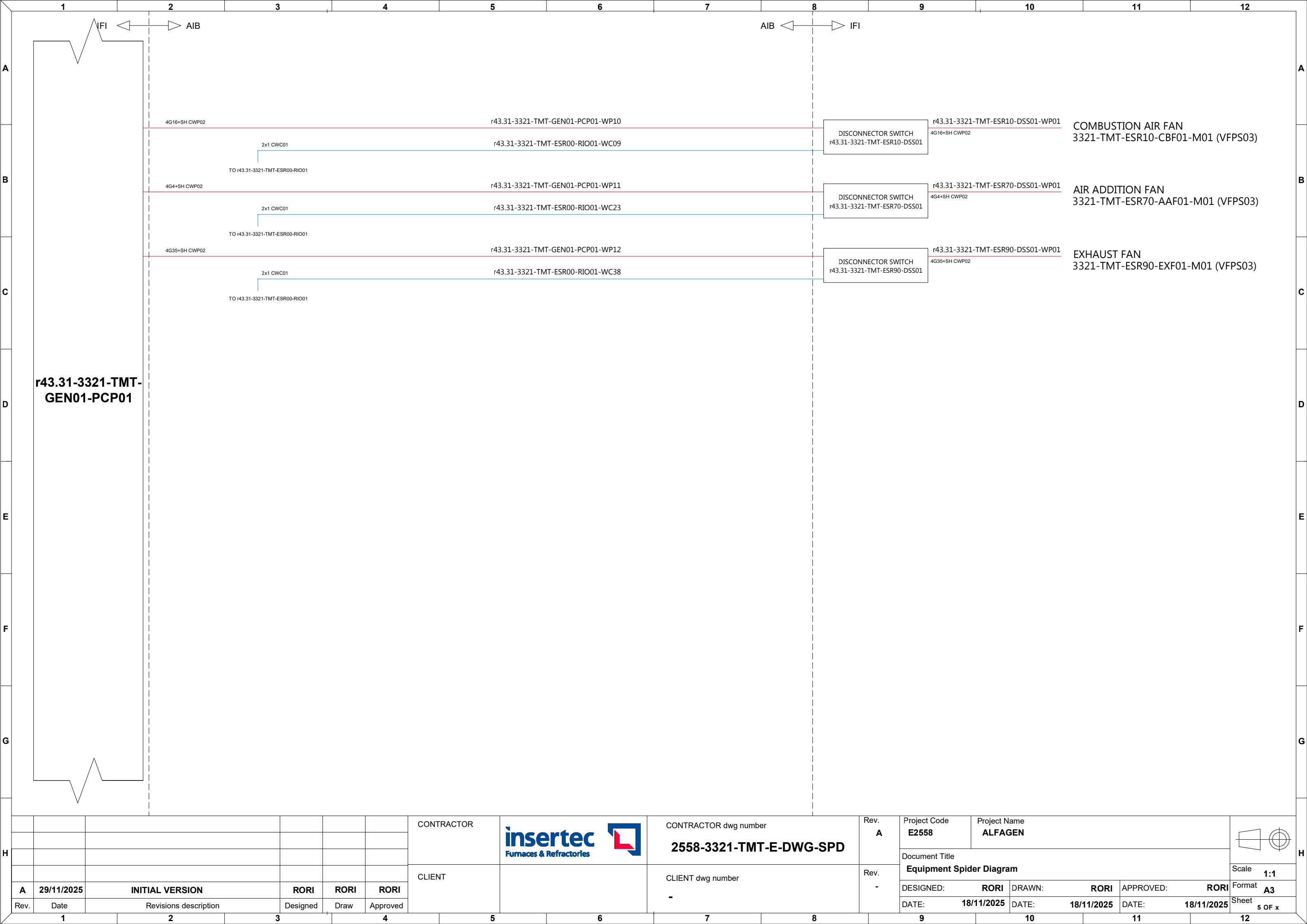
DATE:


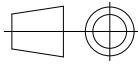
18/11/2025

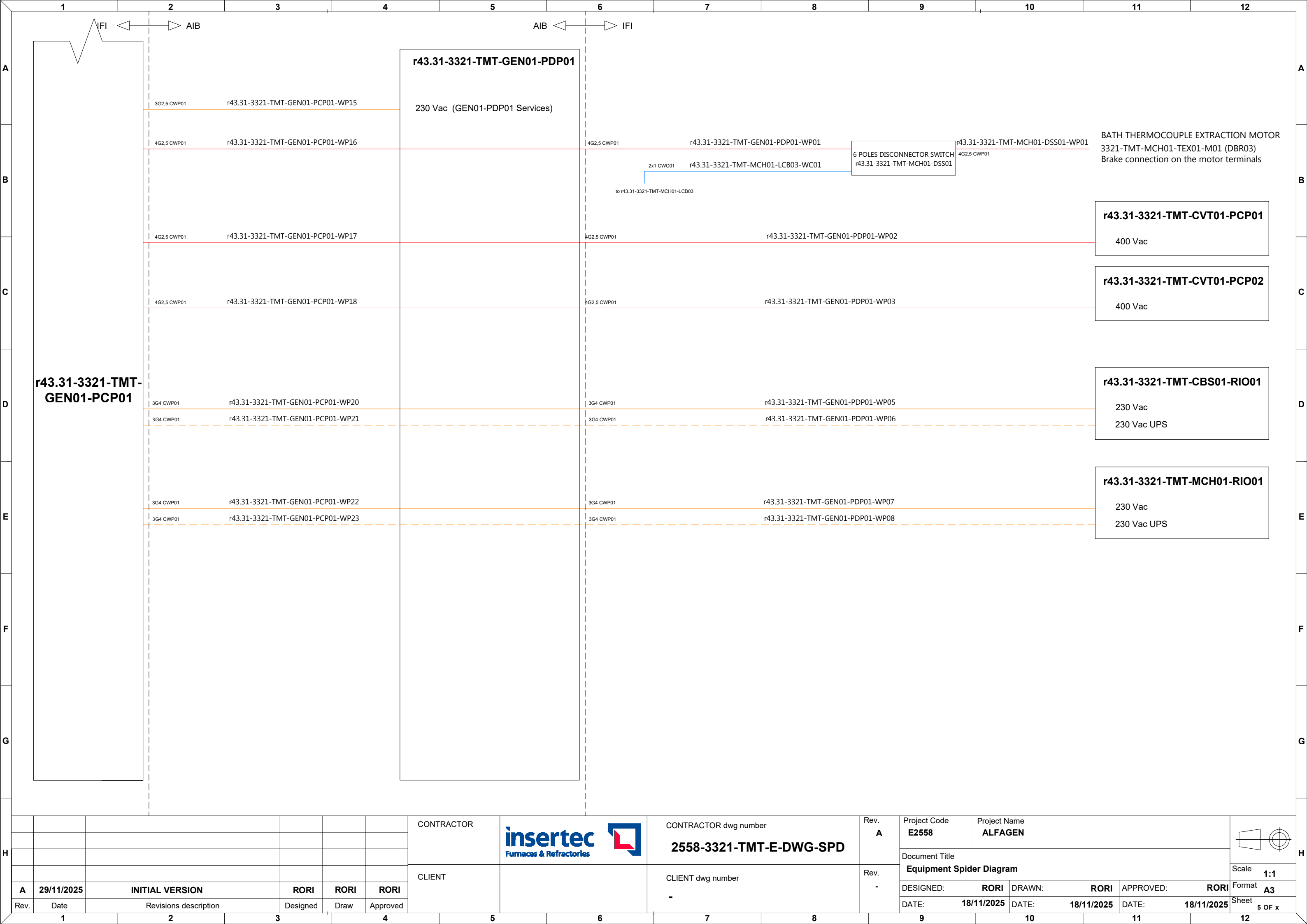
Sheet
2 OF x









H							CONTRACTOR		CONTRACTOR dwg number	Rev. A	Project Code E2558	Project Name ALFAGEN												
									2558-3321-TMT-E-DWG-SPD			Document Title Equipment Spider Diagram		Scale 1:1										
							CLIENT		CLIENT dwg number	Rev. -	DESIGNED: RORI	DRAWN: RORI		APPROVED: RORI	Format A3									
	A	29/11/2025	INITIAL VERSION			RORI	RORI	RORI	-		DATE: 18/11/2025	DATE: 18/11/2025		DATE: 18/11/2025	Sheet 5 OF x									
	Rev.	Date	Revisions description			Designed	Draw	Approved																
	1		2		3		4		5		6		7		8		9		10		11		12	











H							CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN				H							
												Document Title Equipment Spider Diagram					Scale 1:1						
							CLIENT		CLIENT dwg number -	Rev. -	DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3									
	A	29/11/2025	INITIAL VERSION			RORI					RORI	RORI	DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025		Sheet 5 OF x						
	Rev.	Date	Revisions description			Designed					Draw	Approved											
1		2		3		4		5		6		7		8		9		10		11		12	

LOCAL CONTROL PANEL


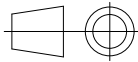
r43.31-3321-TMT-GEN01-LCP01

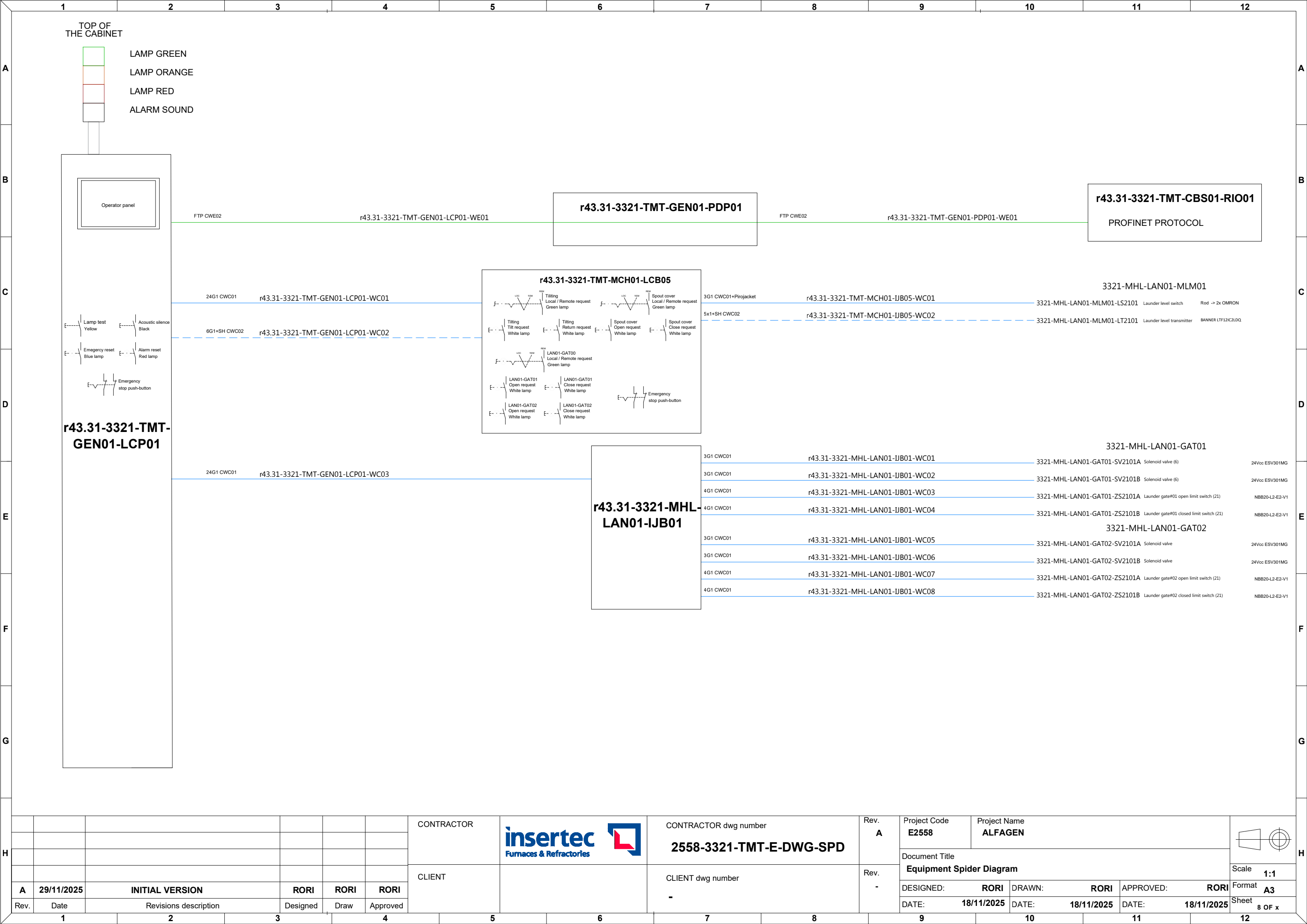
LEGEND



	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY

Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN			
										Document Title Equipment Spider Diagram			Scale 1:1	
A	29/11/2025	INITIAL VERSION		RORI	RORI					DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3	
Rev.	Date	Revisions description		Designed	Draw	Approved	CLIENT	CLIENT dwg number -	Rev. -	DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 7 OF x	
1	2	3	4	5	6	7	8	9	10	11	12			



						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN			
										Document Title Equipment Spider Diagram				
A	29/11/2025	INITIAL VERSION		RORI	RORI	RORI	CLIENT	CLIENT dwg number -	Rev. -	DESIGNED: RORI		DRAWN: RORI	APPROVED: RORI	Scale 1:1
Rev.	Date	Revisions description		Designed	Draw	Approved				Format A3				
										DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 8 OF x	

ENERGY SOURCE REMOTE IO


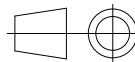
r43.31-3321-TMT-ESR00-RIO01

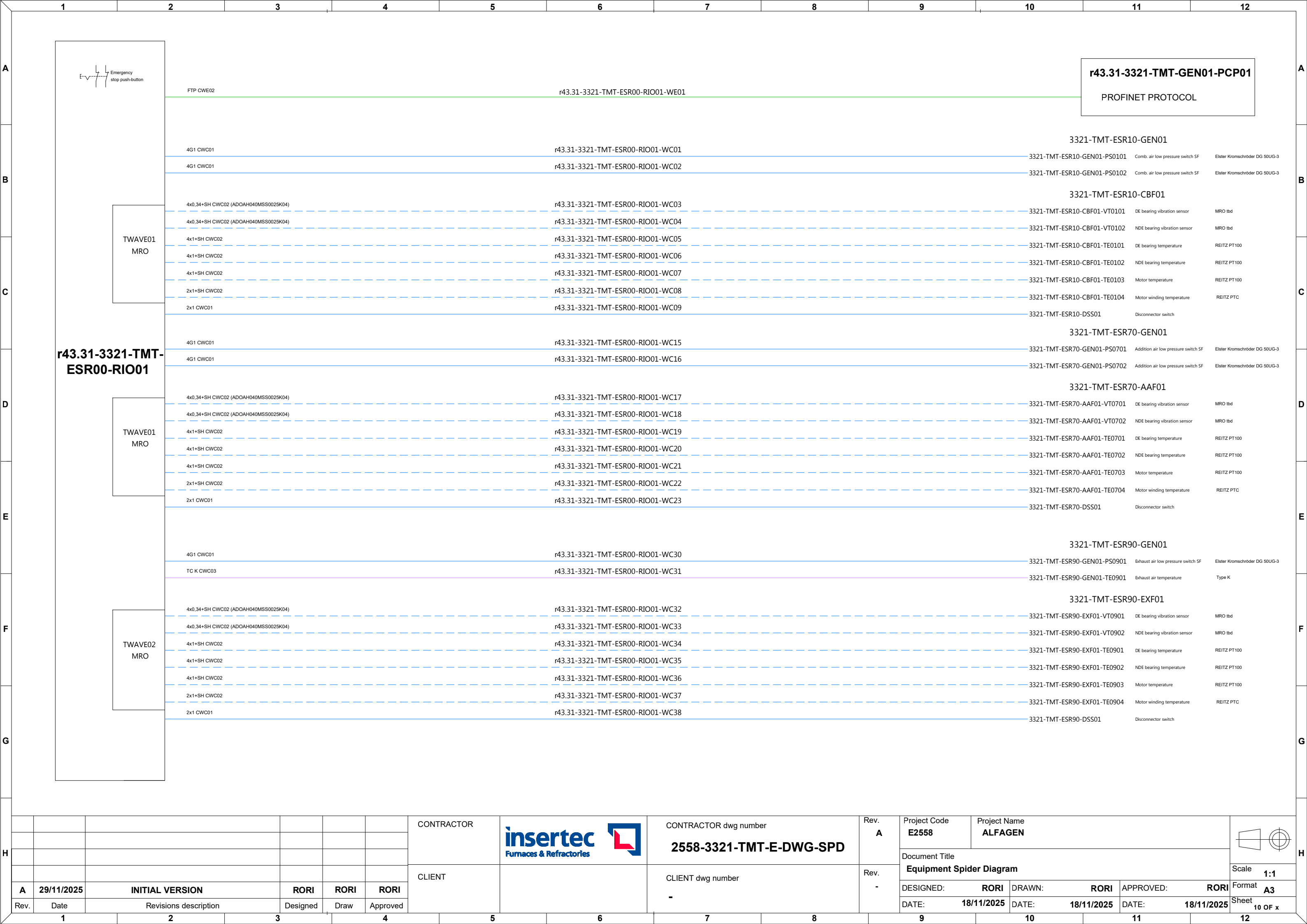
LEGEND

	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY

Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN			
										Document Title Equipment Spider Diagram			Scale 1:1	
A	29/11/2025	INITIAL VERSION		RORI	RORI	RORI	CLIENT dwg number -	Rev. -	DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3		
Rev.	Date	Revisions description		Designed	Draw	Approved			DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 9 OF x		



ENERGY SOURCE REMOTE IO


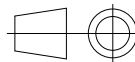
r43.31-3321-TMT-ESR00-RIO02

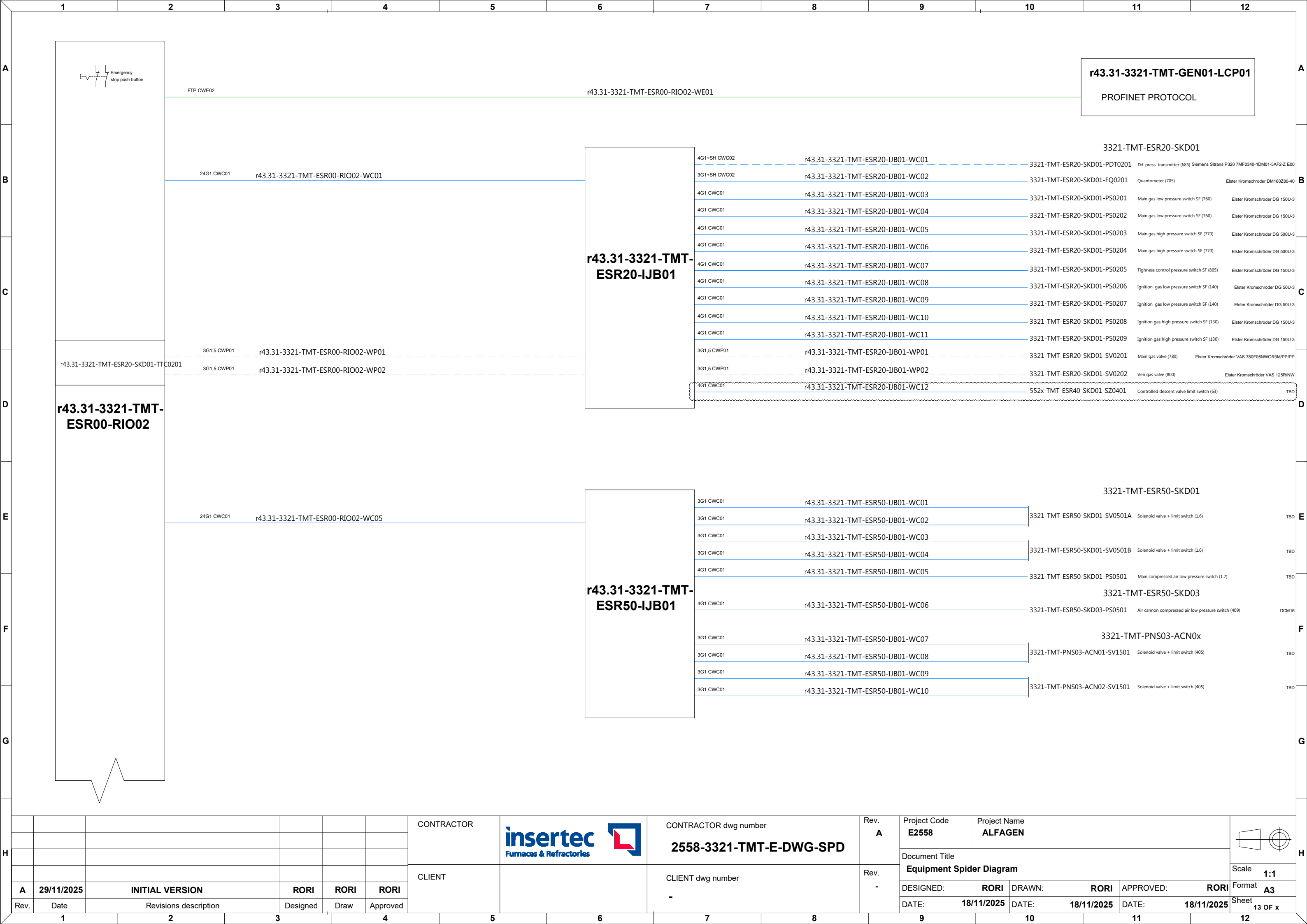
LEGEND

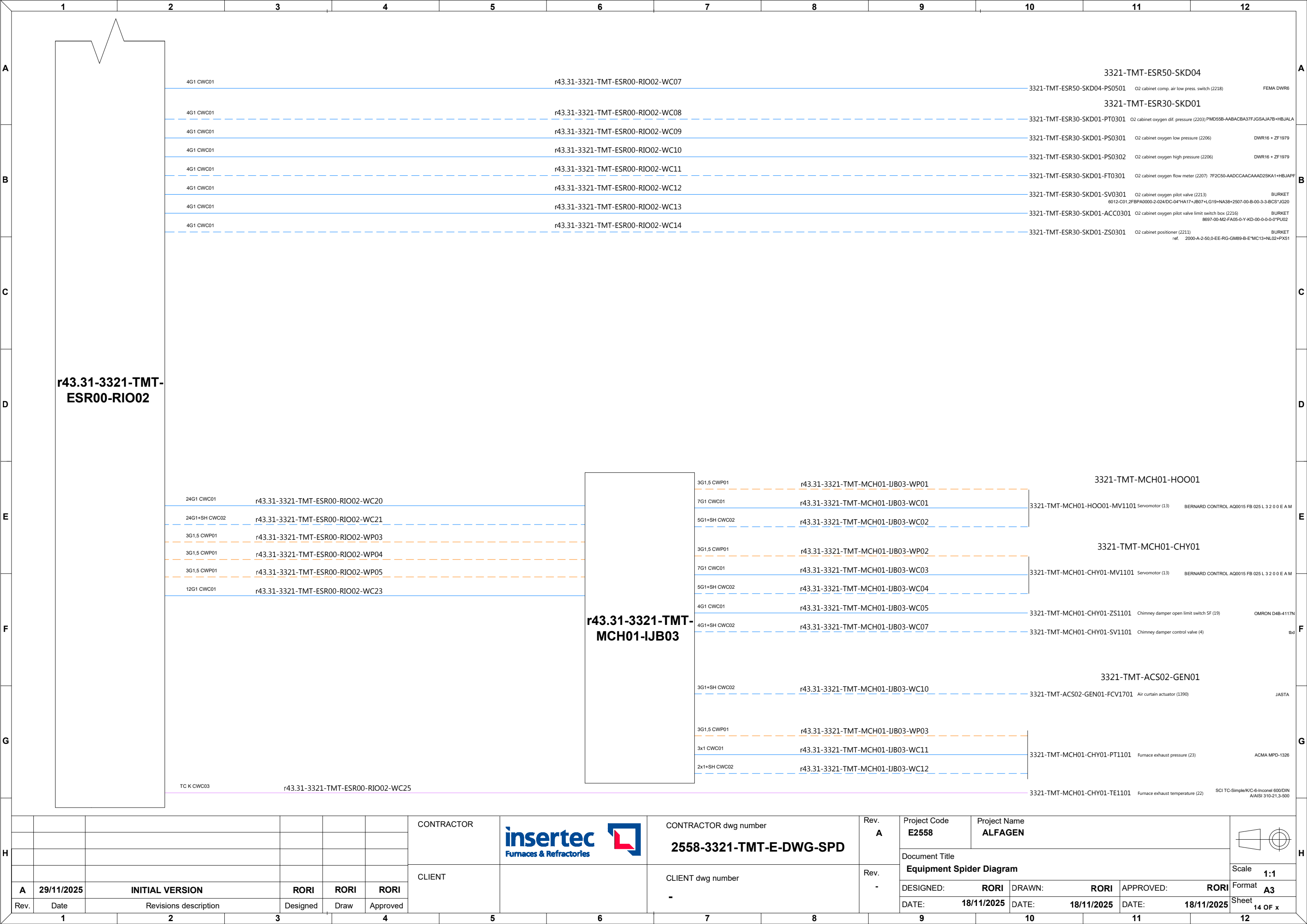
	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY

Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number	Rev. A	Project Code E2558	Project Name ALFAGEN			
								2558-3321-TMT-E-DWG-SPD		Document Title Equipment Spider Diagram				
								CLIENT dwg number		Rev. -	DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	
A	29/11/2025	INITIAL VERSION		RORI	RORI	RORI	-				Format A3			
Rev.	Date	Revisions description		Designed	Draw	Approved					DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 12 OF x





COMBUSTION SYSTEM REMOTE IO


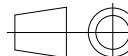
r43.31-3321-TMT-CBS01-RIO01

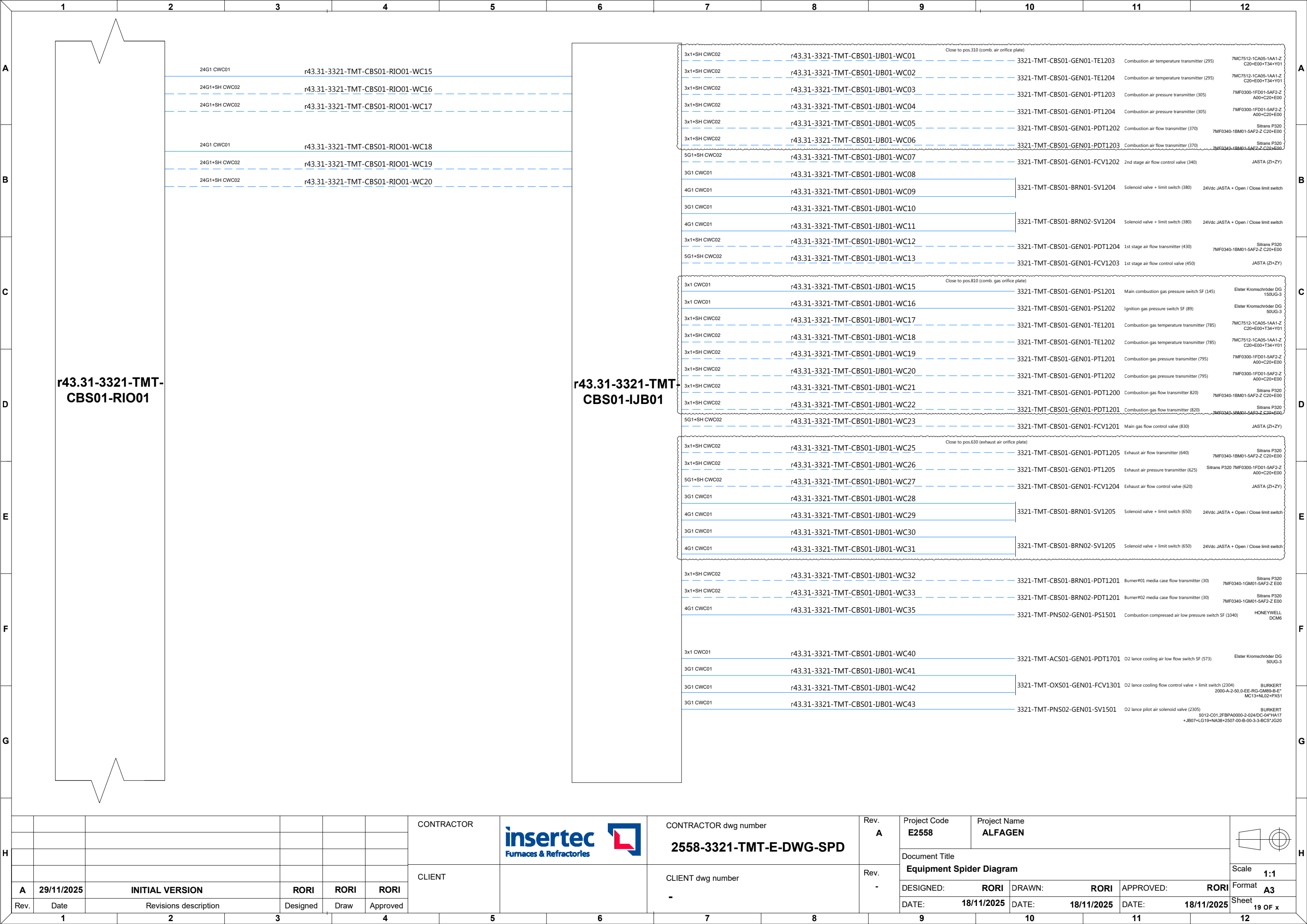
LEGEND


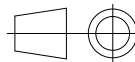
- 400Vac Power supply
- 400Vac UPS power supply
- 230Vac Power supply
- 230Vac UPS power supply
- Regular control signals
- Analog & shielded signals
- T/C connection
- Communication connection

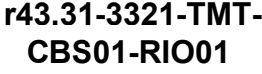
CATEGORY

- Power cables
- CWP01: Regular power cables
 - CWP02: Shielded power cable
 - CWP03: Flexible power cables
 - CWP04: Regular high temperature power cables
 - CWP05: Shielded high temperature power cables
 - CWP06: General use power cable
- Instrumentation and control cables
- CWC01: Regular instrumentation control cables
 - CWC02: Shielded instrumentation control cables
 - CWC03: Thermocouple cable
 - CWC04: Flexible instrumentation control cables
 - CWC05: High voltage cables for ignition transformers
 - CWC06: Regular high temperature instrumentation control cables
 - CWC07: Shielded high temperature instrumentation control cables
- Communication cables
- CWE01: Fieldbus communication cable (Inside cabinets)
 - CWE02: Fieldbus communication cable (Outside cabinets)
 - CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN					
										Document Title Equipment Spider Diagram						
A	29/11/2025	INITIAL VERSION		RORI	RORI	RORI	CLIENT		CLIENT dwg number -	Rev. -	DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI		Scale 1:1	
Rev.	Date	Revisions description		Designed	Draw	Approved					Format A3					
											DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025		Sheet 15 OF x	



						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN												
										Document Title Equipment Spider Diagram			Scale 1:1										
A	29/11/2025	INITIAL VERSION		RORI	RORI					RORI	CLIENT	CLIENT dwg number -	Rev. -		DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3					
Rev.	Date	Revisions description		Designed	Draw	Approved	DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 19 OF x													
1		2		3		4		5		6				7		8		9		10		11	



1/2025	INITIAL
--------	---------

MELTING CHAMBER REMOTE IO


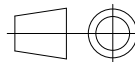
r43.31-3321-TMT-MCH01-RIO01

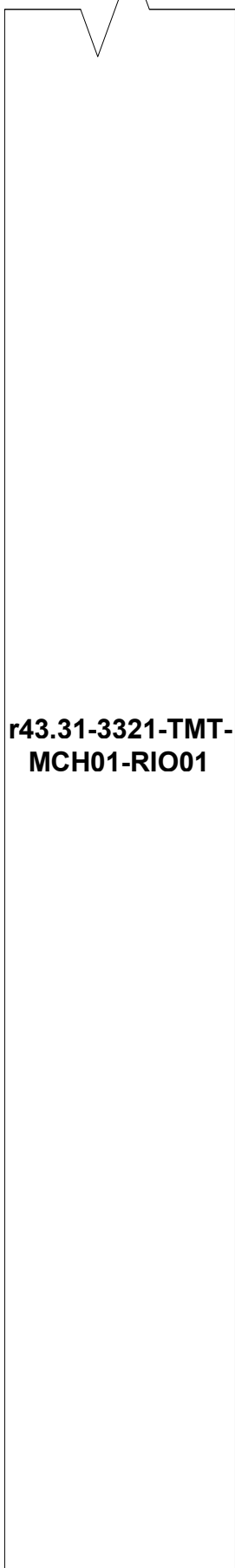
LEGEND

	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY

Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN			
										Document Title Equipment Spider Diagram			Scale 1:1	
A	29/11/2025	INITIAL VERSION		RORI	RORI					RORI	DESIGNED: RORI	DRAWN: RORI		
Rev.	Date	Revisions description		Designed	Draw	Approved	CLIENT	CLIENT dwg number -	Rev. -	DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 17 OF x	











A	29/11/2025	INITIAL VERSION	RORI	RORI	RORI
Rev.	Date	Revisions description	Designed	Draw	Approved

CVS POWER AND CONTROL PANEL


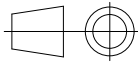
r43.31-3321-TMT-CVT01-PCP01

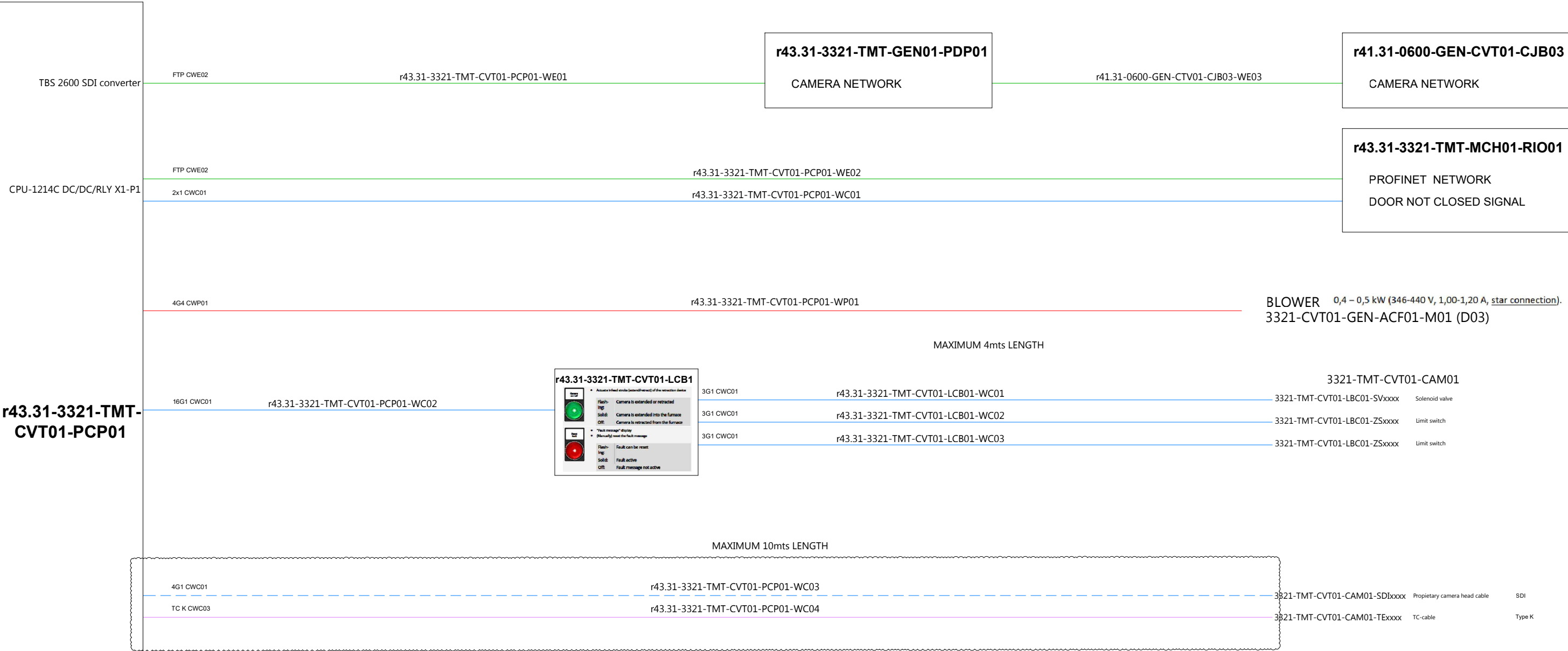
LEGEND

	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY



Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN			
										Document Title Equipment Spider Diagram			Scale 1:1	
A	29/11/2025	INITIAL VERSION		RORI	RORI					DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3	
Rev.	Date	Revisions description		Designed	Draw	Approved		CLIENT dwg number -	Rev. -	DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 20 OF x	
1	2	3	4	5	6	7	8	9	10	11	12			



Legend:

- Flash:** Camera is extended or retracted
- Flg:** Camera is extended into the furnace
- Solid:** Camera is extended into the furnace
- Off:** Camera is retracted from the furnace
- Flash:** Switching on side channel compressor
- Flg:** Side channel compressor switched on
- Solid:** Side channel compressor switched on
- Off:** Side channel compressor switched off
- Flash:** Fault can be reset
- Flg:** Fault active
- Solid:** Fault active
- Off:** Fault message not active
- Flash:** Fault can be reset
- Flg:** Fault active
- Solid:** Fault active
- Off:** Fault message not active

						CONTRACTOR		CONTRACTOR dwg number	Rev. A	Project Code E2558	Project Name ALFAGEN					
								2558-3321-TMT-E-DWG-SPD		Document Title						
										Equipment Spider Diagram						
A	29/11/2025	INITIAL VERSION			RORI	RORI	RORI	CLIENT		Rev. -	CLIENT dwg number			Scale 1:1		
												DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI	Format A3	
Rev.	Date	Revisions description			Designed	Draw	Approved					DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025	Sheet 21 OF x	

CVS POWER AND CONTROL PANEL



r43.31-3321-TMT-CVT01-PCP02

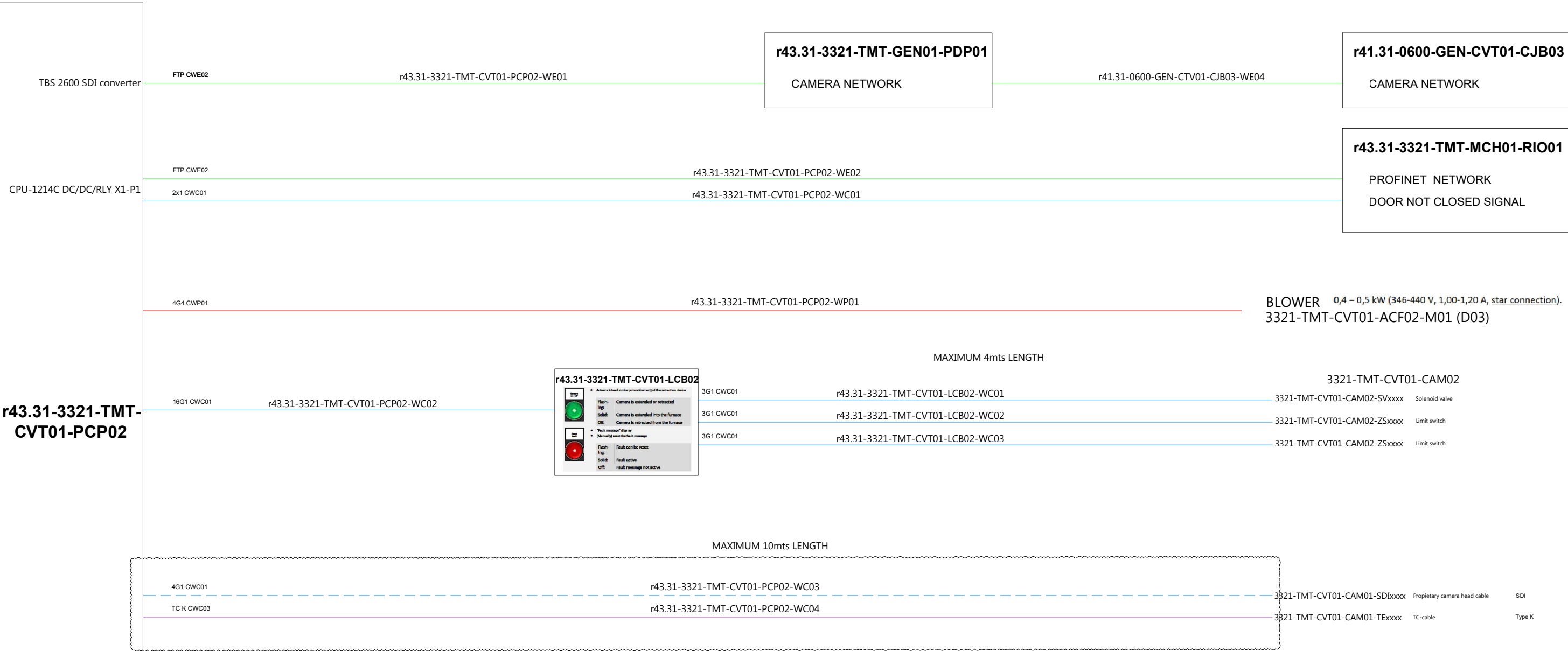
LEGEND

	400Vac Power supply		Regular control signals
	400Vac UPS power supply		Analog & shielded signals
	230Vac Power supply		T/C connection
	230Vac UPS power supply		Communication connection

CATEGORY



Power cables
CWP01: Regular power cables
CWP02: Shielded power cable
CWP03: Flexible power cables
CWP04: Regular high temperature power cables
CWP05: Shielded high temperature power cables
CWP06: General use power cable
Instrumentation and control cables
CWC01: Regular instrumentation control cables
CWC02: Shielded instrumentation control cables
CWC03: Thermocouple cable
CWC04: Flexible instrumentation control cables
CWC05: High voltage cables for ignition transformers
CWC06: Regular high temperature instrumentation control cables
CWC07: Shielded high temperature instrumentation control cables
Communication cables
CWE01: Fieldbus communication cable (Inside cabinets)
CWE02: Fieldbus communication cable (Outside cabinets)
CWE03: Optic fibre communication cable

						CONTRACTOR		CONTRACTOR dwg number 2558-3321-TMT-E-DWG-SPD	Rev. A	Project Code E2558	Project Name ALFAGEN					
										Document Title Equipment Spider Diagram						
										Scale 1:1						
A	29/11/2025	INITIAL VERSION		RORI	RORI	RORI	CLIENT		CLIENT dwg number -	Rev. -	DESIGNED: RORI		DRAWN: RORI	APPROVED: RORI	Format A3	
Rev.	Date	Revisions description		Designed	Draw	Approved					DATE: 18/11/2025		DATE: 18/11/2025	DATE: 18/11/2025	Sheet 23 OF x	



Legend for the diagram:

- Camera extended/retracted:** Flash (Camera extended or retracted), Ing (Camera extended into the furnace), Solid (Camera extended into the furnace), Off (Camera retracted from the furnace).
- Side channel compressor:** Flash (Switching on side channel compressor), Ing (Side channel compressor switched on), Solid (Side channel compressor switched on), Off (Side channel compressor switched off).
- Fault message:** Flash (Fault can be reset), Ing (Fault can be reset), Solid (Fault active), Off (Fault message not active).
- Indicator lights:** This function is used to test all operating indicator lights, turn-on push buttons and other visual and acoustic signals.

						CONTRACTOR	<div><div>insertec</div><div>Furnaces & Refractories</div></div> <div></div>	CONTRACTOR dwg number	Rev. A	Project Code E2558	Project Name ALFAGEN			
								Document Title			Scale 1:1			
								Equipment Spider Diagram						
A	29/11/2025	INITIAL VERSION			RORI	RORI	RORI	CLIENT	Rev. -	CLIENT dwg number			Format A3	
								-						
Rev.	Date	Revisions description			Designed	Draw	Approved			DATE: 18/11/2025				Sheet 24 OF x
										DESIGNED: RORI	DRAWN: RORI	APPROVED: RORI		
										DATE: 18/11/2025	DATE: 18/11/2025	DATE: 18/11/2025		