



ABB Medium Voltage Drives ACS2000 4kV Frames 1, 2, & 3 Spare Parts Catalog

ACS 2000 Drive Manuals

General Manuals

ACS2000 User's Manual

- Safety
- Power Electronics and Cabinet Features
- Control System
- Transportation, Storage and Disposal
- Mechanical Installation
- Electrical Installation
- Commissioning
- Local Operation
- CDP Control Panel
- Troubleshooting and Maintenance

ACS2000 Appendices

- Maintenance Schedule
- Fieldbus Adapters
- Technical Data
- Mechanical Drawings
- Electrical Drawings
- Spare Parts Manual
- MV Switchgear Guide
- Cable Specification
- Induction Motor Specification
- Pulse Encoder
- Motor Temperature Supervision
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Safety

Meaning of safety instructions

Safety instructions are used to highlight a potential hazard when working on the equipment. Safety instructions must be strictly followed! Noncompliance can jeopardize the safety of personnel, the equipment and the environment.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

The safety instructions are derived from the following standards:

- ISO 3864-2:2004 (E)
Graphical symbols – Safety colors and safety signs – Part 2:
Design principles for product safety labels
- ANSI Z535.6
American National Standard for Product Safety Information in
Product Manuals, Instructions, and Other Collateral Materials

Drive Identification

To determine the proper spare parts, refer to the serial number nameplate attached to the inner door of the input/control section.

ABB Medium Voltage Conversion Equipment		Compliant to IEC 60146-1-1	
Type Code: ACS 2040-1L-AN1-a-0R+FAME0+FDPL05		4GZ9	
Rated input voltage	4160 V	Rated aux. voltage	480 V
Rated input current	108 A	Rated aux. current	7.0 A
Rated input frequency	50 / 60 Hz	Rated control	N/A V
Max. permissible short-circuit current	45 kA	Rated control	N/A A
Rated output voltage	0 ... 4160 V	Cooling / ambient	FA / max.104°F
Rated output current (ND/HD)	108/79 A	Enclosure class	TYPE 1 (IP21)
Rated output frequency	60 Hz	Weight	5600 lbs
Output frequency range	0 ... 75 Hz	Altitude	6500 feet
Duty class (ND)	Normal Duty (110% overload (1 min. every 10 min.))	ABB Serial No.	1112400285
Duty class (HD)	Heavy Duty (150% overload (1 min. every 10 min.))	MOR Serial No.	2UEA902000077
		Country of manufacture	
		USA	
		of foreign parts	

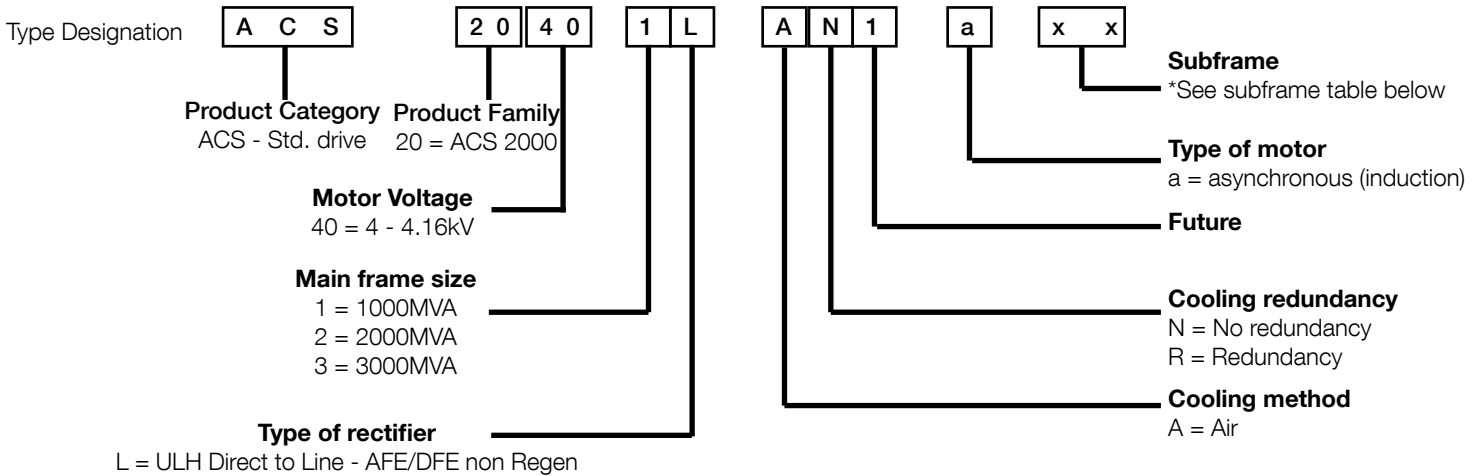
The ACS2000 is currently available in three frame sizes. Frame 1 is available beginning at 300HP and ranges up to 1000HP, while Frame 2 is available from 1250HP to 2000HP, and Frame 3 is available from 2250HP to 3000HP.

The chart below shows the rated input current and kW relative to the specific horse power rating for all drives in all frame sizes.

Base Type Code	Frame	Rated Input Current	[kW]	[hp]
ACS 2040-1x-AN1-a-0C	F1	40	224	300
ACS 2040-1x-AN1-a-0D	F1	47	261	350
ACS 2040-1x-AN1-a-0E	F1	54	298	400
ACS 2040-1x-AN1-a-0F	F1	61	336	450
ACS 2040-1x-AN1-a-0H	F1	67	373	500
ACS 2040-1x-AN1-a-0L	F1	81	447	600
ACS 2040-1x-AN1-a-0Q	F1	94	522	700
ACS 2040-1x-AN1-a-0R	F1	108	597	800
ACS 2040-1x-AN1-a-0T	F1	121	671	900
ACS 2040-1x-AN1-a-0V	F1	135	746	1,000
ACS 2040-2x-AN1-a-0Z	F2	185	933	1,250
ACS 2040-2x-AN1-a-1C	F2	222	1,119	1,500
ACS 2040-2x-AN1-a-1F	F2	260	1,306	1,750
ACS 2040-2x-AN1-a-1H	F2	269	1,492	2,000
ACS 2040-3x-AN1-a-1J	F3	303	1,679	2,250
ACS 2040-3x-AN1-a-1N	F3	337	1,856	2,500
ACS 2040-3x-AN1-a-2A	F3	370	2,052	2,750
ACS 2040-3x-AN1-a-2B	F3	404	2,238	3,000

Drive Identification

Use the following chart to interpret the type code found on the serial number nameplate.



*ACS2000 Subframe Table

Type	Maximum shaft power (no overload) [hp (Kw)] 4kV main frames			
	Subframe Code	1 (1 MVA)	2 (2 MVA)	3 (3 MVA)
0 C		300 (224)		
0 D		350 (261)		
0 E		400 (298)		
0 F		450 (336)		
0 H		500 (383)		
0 L		600 (447)		
0 Q		700 (522)		
0 R		800 (597)		
0 T		900 (671)		
0 V		1000 (746)		
0 Z			1250 (932)	
1 C			1500 (1119)	
1 F			1750 (1305)	
1 H			2000 (1491)	
1 J				2250 (1671)
1 N				2500 (1864)
2 A				2750 (2050)
2 B				3000 (2237)

ACS2000 4kV spare parts

Master list

Category	ACS2000 4KV Part	Type	Description	F1	F2	F3	Disc	Page
Power electronics								
Semiconductors								
	2UEA001345	Phase Module Kit	Phase Module with Removal Tool	x				21
	2UEA002570	Phase Module Kit	Phase Module with Removal Tool		x			32
	2UEA003021	Phase Module Kit	Phase Module and Removal Tool			x		34, 41
	2UEA003051	Crowbar Stack Assembly	Crowbar Assembly	x				22
	2UAE003063	Crowbar Stack Assembly	Crowbar Assembly		x			26
	2UEA003031	Crowbar Stack Assembly	Crowbar Assembly			x		35
	2UEA000911	Diode Clamp	Diode Clamp	x	x	x		22, 31, 42
Resistors								
	3BHB024326R0001	NP Grounding Filter Assembly	Filter	x	x	x		19, 27, 39
	2UEA000360	Resistor, Clamp	Clamp Resistor	x	x			22, 31
	2UEA001469	Resistor, Clamp	Clamp Resistor			x		42
	2UEA000893	Resistor, DC Link	Symmetry Resistor	x				22
	2UEA001348	Resistor, DC Link	Symmetry Resistor		x			26
	2UEA001470	Resistor, DC Link	Symmetry Resistor			x		38
	2UEA000993	Resistor, IFU	IFU Resistor	x				19
	2UEA001350	Resistor, IFU	IFU Resistor		x			29
	2UEA001467	Resistor, IFU	IFU Resistor			x		40
	2UEA000711	Resistor, CM Filter	IFU Resistor	x				19
	2UEA001407	Resistor, CM Filter	IFU Resistor		x	x		25, 40
	2UEA000004	Resistor, EMC Filter	EMC Resistor	x				19
	2UEA001505	Resistor, EMC Filter	EMC Resistor		x			29
	2UEA001472	Resistor, EMC Filter	EMC Resistor			x		40
Capacitors								
	2UEA000005	Capacitor, EMC Filter	EMC Capacitor	x				19
	2UEA001404	Capacitor, EMC Filter	EMC Capacitor		x			28
	2UEA001464	Capacitor, EMC Filter	EMC Capacitor			x		
	2UEA000358	Capacitor, DC Link	DC Link	x				21
	2UEA001406	Capacitor, DC Link	DC Link		x			26
	2UEA001466	Capacitor, DC Link	DC Link			x		34
	2UEA000357	Capacitor, Clamp	Clamp	x				22
	2UEA001405	Capacitor, Clamp	Clamp		x			31
	2UEA001465	Capacitor, Clamp	Clamp			x		35
	2UEA000992	IFU Capacitor	IFU Capacitor	x				19
	2UEA001352	IFU Capacitor	IFU Capacitor		x			27, 28
	2UEA001463	IFU Capacitor	IFU Capacitor			x		35, 38
	3BHB020698R0010	NP Grounding Capacitor	Grounding Capacitor	x	x	x		19,27,39
Inductors								
	2UEA001899	Transformer	Transformer, 4160V to 480V; 15KVA	x	x		x	47
	2UEA001900	Transformer	Transformer, 4160V to 480V; 20KVA			x	x	47
	2UEA002611	Transformer	Transformer 480V to 120V; 2KVA	x	x	x	x	
	2UEA002918	Inductor Stack Kit	Inductor Stack kit with Base	x				20
	2UEA003159	Inductor Stack Kit	Inductor Stack kit with Base		x			28
	2UEA003164	Inductor Stack Kit	Inductor Stack kit with Base			x		38
	2UEA000883	Inductor, Clamp	Clamp Inductor	x				22
	2UEA001403	Inductor, Clamp	Clamp Inductor		x			31
See Note 2 on page 49	2UEA003213	Inductor, Clamp	Clamp Inductor			x		42
See Note 2 on page 49	2UEA002974	Inductor, Clamp	Clamp Inductor			x		42

ACS2000 4kV spare parts list

Master list

Category	ACS2000 4KV Part	Type	Description	F1	F2	F3	Disc	Page
	2UEA003165	Inductor, Common Mode	Common Mode Inductor			x		34, 37
	2UEA000886	Inductor, EMC Filter Inductor	EMC Filter Inductor (SN<2124903744)	x				20
	2UEA003160	Inductor, EMC Filter Inductor	EMC Filter Inductor		x			28
	2UEA003166	Inductor, EMC Filter Inductor	EMC Filter Inductor			x		34, 37
	2UEA002349	Inrestor	Inrestor	x				20
	2UEA003150	Inrestor	Inrestor		x			26
	2UEA002348	Inrestor	Inrestor			x		34
Charging unit								
	2UEA000967	High Voltage Relay	High Voltage Relay	x	x	x		19,27,39
	2UEA000138	Charging transformer 400/460V, 4200V	Charging Transformer	x	x	x		19,28,38
Circuit Protection								
	2UEA001267	Fuse 70 Amp	Power Fuse (300 - 400 HP)	x			x	17,47
	2UEA001268	Fuse 140 Amp	Power Fuse (450 - 700; 1250 HP)	x	x		x	17,24,47
	2UEA002203	Fuse, 160 Amp	Power Fuse (1500-1750 HP)		x		x	24,47
	2UEA000093	Fuse 200 Amp	Power Fuse (800 - 1000; 2000 HP)	x	x		x	17,24
	2UEA001947	Fuse 230 Amp	Power Fuse (2250 - 3000 HP)			x	x	36
	2UEA002431	Fuse	Fuse, MV, 4A				x	47
	2UEA001927	Fuse	Fuse, 3.2A				x	48
	2UEA000149	Surge Arrestor	Surge Arrestor	x	x	x		17,24,36
Control electronics								
Printed circuit boards								
	3BHE024577R0101	PP C907 BE: AMC 34 - PCB Varnished	Application and Motor Control	x	x	x		15
	3BHE024855R0101	UF C921 A101: INT-2 Board Varnished	Interface board	x	x	x		15
	3BHE024747R0101	Crowbar Board	Crowbar Board	x	x	x		22,26
	3BHE032285R0102	HVD Board Varnished.	High Voltage Divider	x	x	x		19,27,39
	3BHE009017R0102	VLSCD-Board, Coated, Type XV C724 BE	Short Circuit Detection	x	x	x		22,31,42
	3BHE005555R0101	LD SYN-01	Sync Board	x	x	x		19,27,39
	3BHE020959R0127	IPS Single Voltage 27V	IGBT Power Supply	x	x	x		19,27,39
	3BHE006373R0101	OEI-Board	Optical Electrical Interface	x	x	x		19,27,39
I/Os								
	3BHB003041R0101	IOEC IO	IO Module	x	x	x		15
	2UEA000843	IOEC Connector-3 Position	IO Module	x	x	x		15
	2UEA000861	IOEC Connector-7 Position	IO Module	x	x	x		15
	2UEA000845	IOEC Connector-10 Position	IO Module	x	x	x		15
*Long lead item	2UEA003570	Intellivac	Intellivac	x	x	x	x	48
	2UEA001919	Motor Management Relay	Motor Management Relay	x	x	x	x	
	2UEA003092	Motor Management Relay	Motor Management Relay	x	x	x	x	
Transducers								
	2UEA000988	Current Transducer	LEM CT	x				19
	2UEA001456	Current Transducer	LEM CT		x			25
	2UEA002111	Current Transducer	LEM CT			x		38
	2UEA001894	Current Transducer	Current Transducer (500A) Frame 1&2	x	x		x	45
	2UEA003040	Current Transducer	Current Transducer (1000A) Frame 3			x	x	45
Power supplies								
	2UEA002224	Power Supply	+24VDC Main Power Supply, 40A 480AC	x	x	x		15
	2UEA002709	Power Supply	+24VDC Main Power Supply, 120/240AC (+SPC01)	x	x	x		15

ACS2000 4kV spare parts

Master list

Category	ACS2000 4KV Part	Type	Description	F1	F2	F3	Disc	Page
	2UEA000936	20A 3 Phase Buffer Module	Power Supply	x	x	x		15
	2UEA001961	UPS, 24VDC, 40 Amp	Power Supply (+CPR02)	x	x	x		15
	3BHE032593R0002	IPS Power Supply	IGBT Power Supply	x	x	x		19,26,34
	2UEA001960	Battery, 24VDC, 12 Ah	UPS Battery 24VDC (+CPR02)	x	x	x		15
	2UEA000762	Autotransformer	Cont. Voltage Transformer (+AUX40, +AUX60)	x				
	2UEA002959	Autotransformer	Cont. Voltage Transformer (+AUX40, +AUX60)		x			
	2UEA002977	Autotransformer	Cont. Voltage Transformer (+AUX40, +AUX60)			x		
User interface								
	2UEA000987	Control Panel, CDP312R	Control Panel	x	x	x		13
	3BHL000764P0001	Control Panel Interface, NDPI-02	Control Panel	x	x	x		13
	2UEA000986	Control Panel	Keypad Frame	x	x	x		13
	2UEA000570	CDP312 Connector plug	CDP312 Connector plug	x	x	x		13
	2UEA000572	Y-Connector, RJ12	Control Panel	x	x	x		13
	2UEA000950	Operator pushbutton, white	Push Button, White 30MM	x	x	x		13
	2UEA000958	Contact and lamp block with holder kit	Adapter	x	x	x		13
	2UEA000962	LED, white	Led	x	x	x		13
	2UEA000951	Operator pushbutton, green	Push Button, Green 30MM	x	x	x		13
	2UEA000963	LED, green	Led	x	x	x		13
	2UEA002665	LED, green	Led				x	45
	2UEA001520	Operator, green	Push Button, Green				x	45
	2UEA000952	Operator, yellow	Push Button, Yellow 30MM	x	x	x		13
	2UEA000959	lamp block with holder kit	Adapter	x	x	x	x	13,47
	2UEA000964	LED, yellow	Led	x	x	x		13
	2UEA000953	Operator, blue	Push Button, Blue 30MM	x	x	x		13
	2UEA000965	LED, blue	Led	x	x	x		13
	2UEA000956	Operator, Red	Lens, Red 30MM (+FDPL05)	x	x	x	x	47
	2UEA000966	LED, Red	LED, red (+FDPL05)	x	x	x		
	2UEA002666	LED, Red					x	45
	2UEA000957	Potentiometer	Operator Potentiometer (+FDSP01)	x	x	x		
	2UEA000961	Adaptor	Potentiometer Contact Block (+FDSP01)	x	x	x		
	2UEA000954	Switch	Switch Contact Block (+FDSP01)	x	x	x		
	2UEA000960	Adaptor	Switch Contact Block (+FDSS01, +FDSS02)	x	x	x		
	2UEA000131	Emergency Stop	Emergency Stop Protective Collar	x	x	x		13
	2UEA000130	Emergency Stop	Emergency Stop Pushbutton	x	x	x		13
	2UEA000126	Emergency Stop	Contact Block Holder	x	x	x		13
	2UEA001312	Emergency Stop	Contact Block	x	x	x		13
*Long lead item	2UEA003571	Disconnect	Grounding Disconnect				x	47
Electrical general								
	2UEA000761	Fuse, 4A	Control Fuse	x	x	x		15
	2UEA001336	Charging Circuit Breaker	Circuit Breaker, 2 Pole 10A 480V	x	x			15
	2UEA002646	Charging Circuit Breaker	Circuit Breaker, 2 Pole 13A 480V			x		
	2UEA000791	Circuit Breaker, 3 Pole 4A 480V	Circuit Breaker, 3 Pole 4A 480V	x	x	x		15
	2UEA002101	Circuit Breaker, IPS Supply	Circuit Breaker, 2 Pole 20A 24VDC	x	x	x		
	2UEA001289	Circuit Breaker	Main Power Supply Breaker 120V/240V (+SPC01)	x	x	x		

ACS2000 4kV spare parts list

Master List

Category	ACS 2000 4KV Part	Type	Description	F1	F2	F3	Disc	Page
	2UEA002192	Circuit Breaker	Motor Heater Circuit Breaker 6A (+MPH01)	x	x	x	x	48
	2UEA001978	Aux Contact	Motor Heater Aux contact(+MPH01)	x	x	x		
	2UEA002193	Relay, Motor Heater	Motor Heater Relay (+MPH01)	x	x	x		
	2UEA000733	Relay, Run Lamp	Run Lamp Relay (+FDPL05)	x	x			
	2UEA000793	Relay, Fan Motor	480V Fan Relay, 24VDC Coil, NO Aux	x	x	x		15
	2UEA001449	Manual Starter, Fan	Manual Fan Starter, 6.3A	x	x	x		15
	2UEA001450	Contact, Fan	Fan Contactor 21A	x	x	x		15
	2UEA001453	Fan Aux Contact	Fan Aux Contact	x	x			15
	2UEA003500	Overload, Fan	Manual Motor Starter				x	
	2UEA003503	Fan	MP2 Cooling Fan				x	48
	2UEA000790	Circuit Breaker	Cabinet Heater Circuit Breaker 8A (+SHT01)	x	x	x		
	2UEA002194	Aux Contact	Cabinet Heater CB Aux contact (+SHT01, +SHT01)	x	x	x		
	2UEA001562	Circuit Breaker	Cabinet Heater Circuit Breaker 4A (+SHT02)	x	x	x		
	2UEA002156	Circuit Breaker	25A Circuit Breaker Frame 1&2	x	x		x	48
	2UEA003039	Circuit Breaker	32A Circuit Breaker Frame 3			x	x	48
	2UEA001565	Aux Contact	Cabinet Heater Aux Contact (+SHT01)	x	x	x		
	2UEA001556	Cabinet Heater	230V Cabinet Heater (+SHT01, +SHT02)	x	x	x		
	2UEA001301	Cabinet Heater	110V Cabinet Heater (+SHT01, +SHT02)	x	x	x		
	2UEA001292	Motor RTD Power Block	PT100 Power Block (+TSM05, +TSM08)	x	x	x		
	2UEA001293	Motor RTD Bridge Block	PT100 Power Block (+TSM05, +TSM08)	x	x	x		
	2UEA000846	RTD transmitter	RTD transmitter (+TSM05, +TSM08)	x	x	x		
	2UEA001338	RTD Plug	RTD Plug	x	x	x		
	2UEA001136	RTD Sensor	RTD Sensor	x	x	x		
	2UEA001138	RTD Socket	RTD Socket	x	x	x		
	2UEA000630	Terminal Block	Terminal Block	x	x	x		15
	2UEA000632	Terminal Block	Terminal Block	x	x	x		15
	2UEA000633	Terminal Block, Fuse Clip	Terminal Block, Fuse Clip	x	x	x		15
	2UEA000772	Terminal Block	Terminal Block	x	x	x		
	2UEA001133	Terminal Block	Terminal Block	x				
	2UEA001451	Terminal Block, Circuit Breaker Feed	Terminal Block, Circuit Breaker Feed	x	x	x		15
	2UEA000142	Terminal Block	Terminal Block, Earthing	x	x	x		
	2UEA000145	Terminal Block	Terminal Block, Earthing	x	x	x		15
	2UEA001920	Terminal Block	CT Terminal Block	x	x	x	x	48
	2UEA000651	64 Conductor Ribbon Cable	Ribbon Cable	x	x	x		15
	2UEA002037	EMI Filter	EMI Filter	x	x	x	x	48
*Long lead item	2UEA003572	MV Contactor Assembly	MV Contactor				x	47
	2UEA002620	Cam Switch	3PDT Cam Switch	x	x	x	x	48
	2UEA002619	Control Relay	Interpose Control Relay	x	x	x	x	48
	2UEA002103	Control Relay	Control Relay, Load Interlock	x	x	x	x	48
	2UEA001932	Test Power Plug	Test Power Plug	x	x	x	x	48

ACS2000 4kV spare parts list

Master List

Category	ACS 2000 4KV Part	Type	Description	F1	F2	F3	Disc	Page
Miscellaneous								
Mechanics								
	2UEA000463	Handle For Grounding Switch	Grounding Switch	x	x	x		
	3BHB021516R0001	Grounding Switch	Grounding Switch	x	x	x		21,25,37
	2UEA001078	Pressure Switch	Pressure Switch	x	x	x		
	2UEA001051	Cooling Fan	Cooling fan	x	x	x		28
	2UEA002898	Cooling Fan Removal Kit	Cooling Fan Removal Kit Frame 1	x				
	2UEA003161	Cooling Fan Removal Kit	Cooling Fan Removal Kit Frame 2		x			
	2UEA003163	Cooling Fan Removal Kit	Cooling Fan Removal Kit Frame 3			x		
	2UEA001026	Filter	Converter Door Filter	x				
	2UEA001026	Filter	IFU Section Door Filter (SN≥2124903744)	x				
	2UEA001042	Filter	IFU Section Door Filter (SN<2124903744)	x				
	2UEA001704	Filter	Converter Door Filter		x			
	2UEA001694	Filter	IFU Section Door Filter		x	x		
	2UEA002487	Filter	Converter Door Filter			x		
	2UEA003461	Filter	Disconnect Cabinet Filter				x	47
	2UEA001135	Door Hinge	Door Hinge (SN<2124903744)	x				
	2UEA001629	Door Hinge	Door Hinge (SN≥2124903744)	x	x	x		13
	2UEA003089	Air Plenum	Phase Module Plenum	x				
	2UEA001770	Air Plenum	Phase Module Plenum		x			32
	2UEA003189	Air Plenum	Phase Module Plenum			x		41
	2UEA001362	Phase Module Exchange Tool	Phase Module Exchange Tool	x				
	2UEA002274	Phase Module Exchange Tool	Phase Module Exchange Tool		x	x		
	2UEA002371	Phase Module Lift Hoist	Phase Module Lift Hoist		x	x		
	2UEA002535	Hoist Frame	Hoist Frame		x			
	2UEA002151	Hoist Bracket	Hoist Bracket		x			
	2UEA003047	Phase Module Contact	Phase Module Contact Receptacle	x				
	2UEA003048	Phase Module Contact	Phase Module Contact Receptacle		x			
	2UEA003049	Phase Module Contact	Phase Module Contact Receptacle			x		
	2UEA003034	Door Lock Assembly	Low Voltage Controls Door Lock w/ Key	x	x	x		
	2UEA002174	Key	Low Voltage Controls Door Key	x	x	x	x	
	2UEA003035	Door Lock Assembly	Phase Module Door Lock w/ Key	x	x	x		
	2UEA002152	LVD Door Lock	LVD Door Lock				x	45
	2UEA002175	Key	Phase Module Door Key	x	x	x	x	
	2UEA002207	MV Door Lock	MV Door Lock				x	45
Drive Options								
	2UEA000983	Modbus Module	Modbus Module NMBA-01 (+FAMM0)	x	x	x		
	2UEA001290	Controlnet Module	Controlnet Module (+FAMAC)	x	x	x		
	2UEA001065	Device Net Module	Device Net Module (+FAMAD)	x	x	x		
	2UEA001063	Ethernet Module	Ethernet Module NETA-01 (+FAME0)	x	x	x		
	2UEA001064	Ethernet Adaptor Module	Ethernet IP Adaptor Module (+FAMAE)	x	x	x		
	2UEA001291	NPBA-12 Module	Profibus NPBA-12 Module (+FAMP0)	x	x	x		
	2UEA001067	Speed Measurement	Speed Measurement NTAC-02 (+ENC0)	x	x	x		
	3AUA0000040000	Drive Window Kit	Drive Window and DDCS adaptor	x	x	x		
	2UEA003060	Drive Monitor Kit	Drive Monitor 3000 (+DMN01)	x	x	x		

Frame 1, 2, & 3 Common Spare Parts Overview

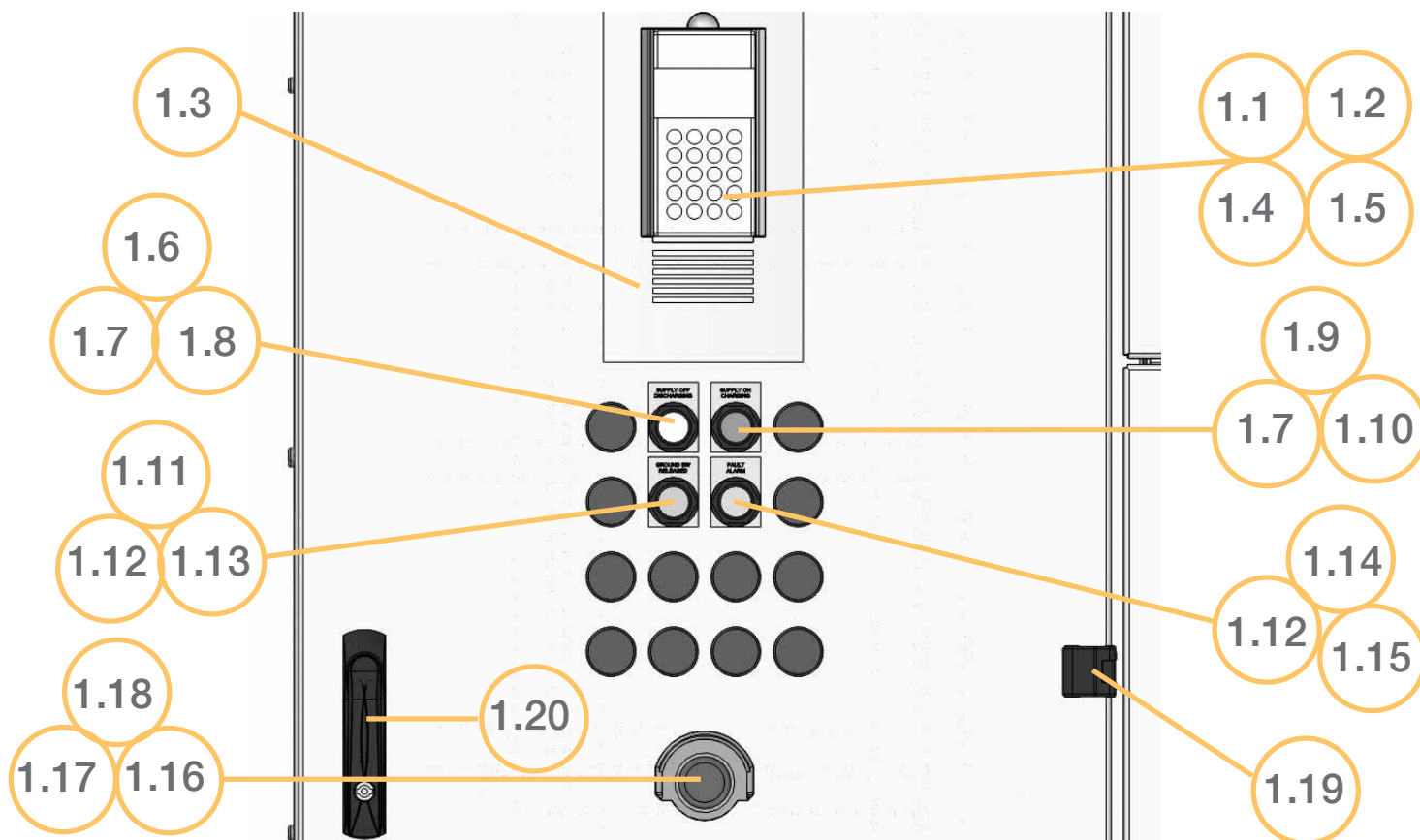
The ACS2000 4KV has three sections, the Incoming/Control section, the Input Filter (IFU) section and the Phase Module section. This manual is divided, by frame size, into those sections showing the corresponding spare parts in each section.

ABB reserves the right to change part numbers at any time. If you have difficulty identifying the part you need, please feel free to contact Technical Support.

Parts can be ordered online at www.abbnow.com or by calling 1-800-752-0696 (US Only) or 1-262-785-3200 (International) Option 1.



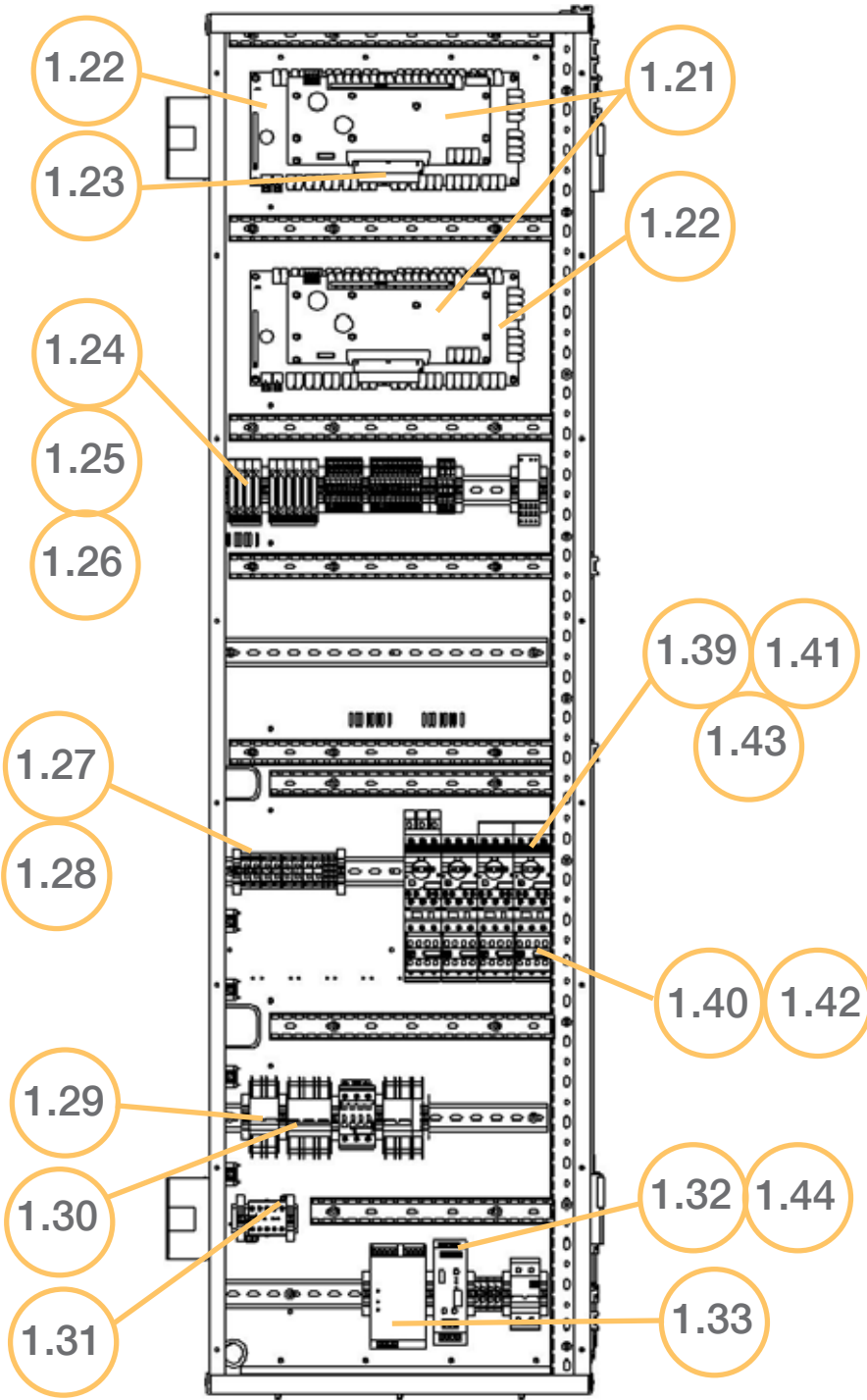
Frame 1, 2, & 3 Common Spare Parts Incoming/Control Section Front Door



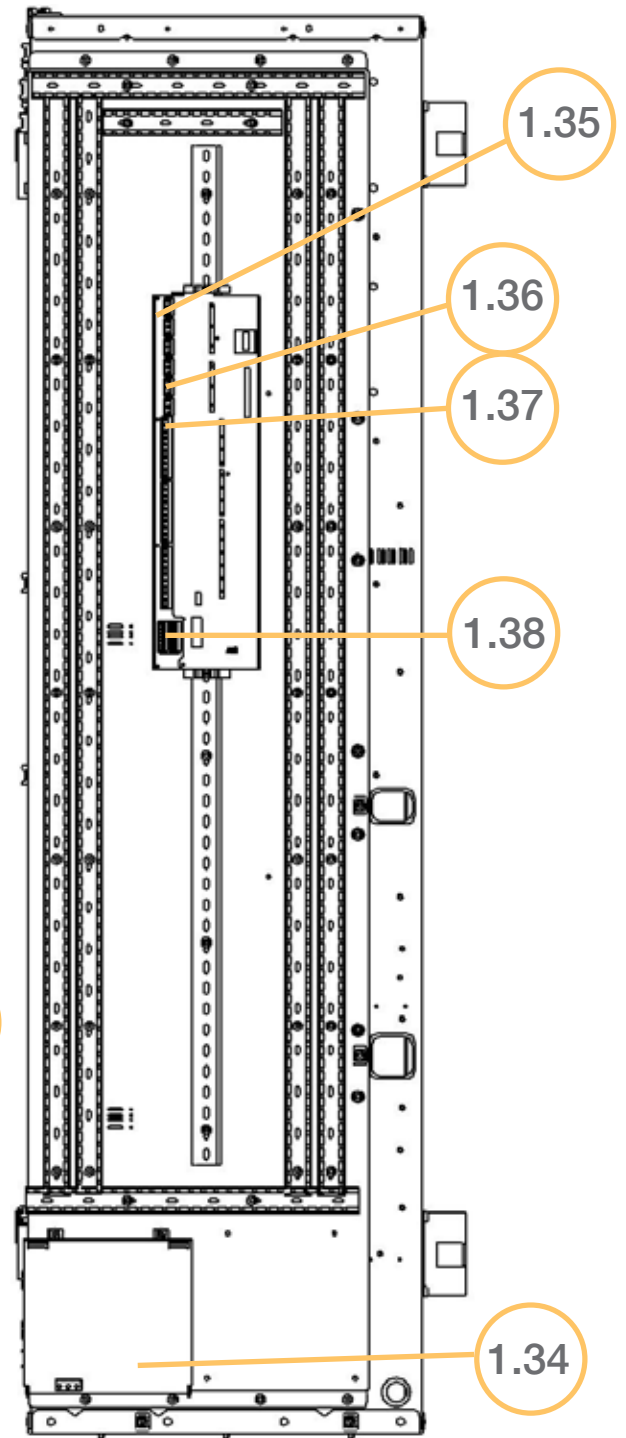
Picture 1: Front view of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA000987	1	CDP-312R Control Panel	Equivalent to 68281059
1.2	3BHL000764P0001	1	Control Panel Interface NDPI-02	Equivalent to 58914444
1.3	2UEA000986	1	Keypad Frame	Equivalent to 68228344
1.4	2UEA000570	1	CDP312 Connector Plug	
1.5	2UEA000572	1	Y-Connector, RJ12	
1.6	2UEA000950	1	Pushbutton Operator - White, 30MM	
1.7	2UEA000958	2	Contact and lamp block with holder kit	
1.8	2UEA000962	1	LED - White	
1.9	2UEA000951	1	Pushbutton Operator - Green, 30MM	
1.10	2UEA000963	1	LED-Green	
1.11	2UEA000952	1	Operator, Yellow	
1.12	2UEA000959	2	Lamp Block w/Holder	
1.13	2UEA000964	1	LED-Yellow	
1.14	2UEA000953	1	Operator, Blue	
1.15	2UEA000965	1	LED-Blue	
1.16	2UEA000131	1	Emergency Stop Protective Collar	
1.17	2UEA000130	1	Emergency Stop Pushbutton	
1.18	2UEA001312	1	Emergency Stop Contact Block	
1.19	2UEA001135	10	Door Hinge (SN<2124903744)	
1.19	2UEA001629	10	Door Hinge (SN≥2124903744)	
1.20	2UEA003034	1	Door Lock with key	

Incoming/Control Section Control swing frame



Picture 2A: Swing frame - Front

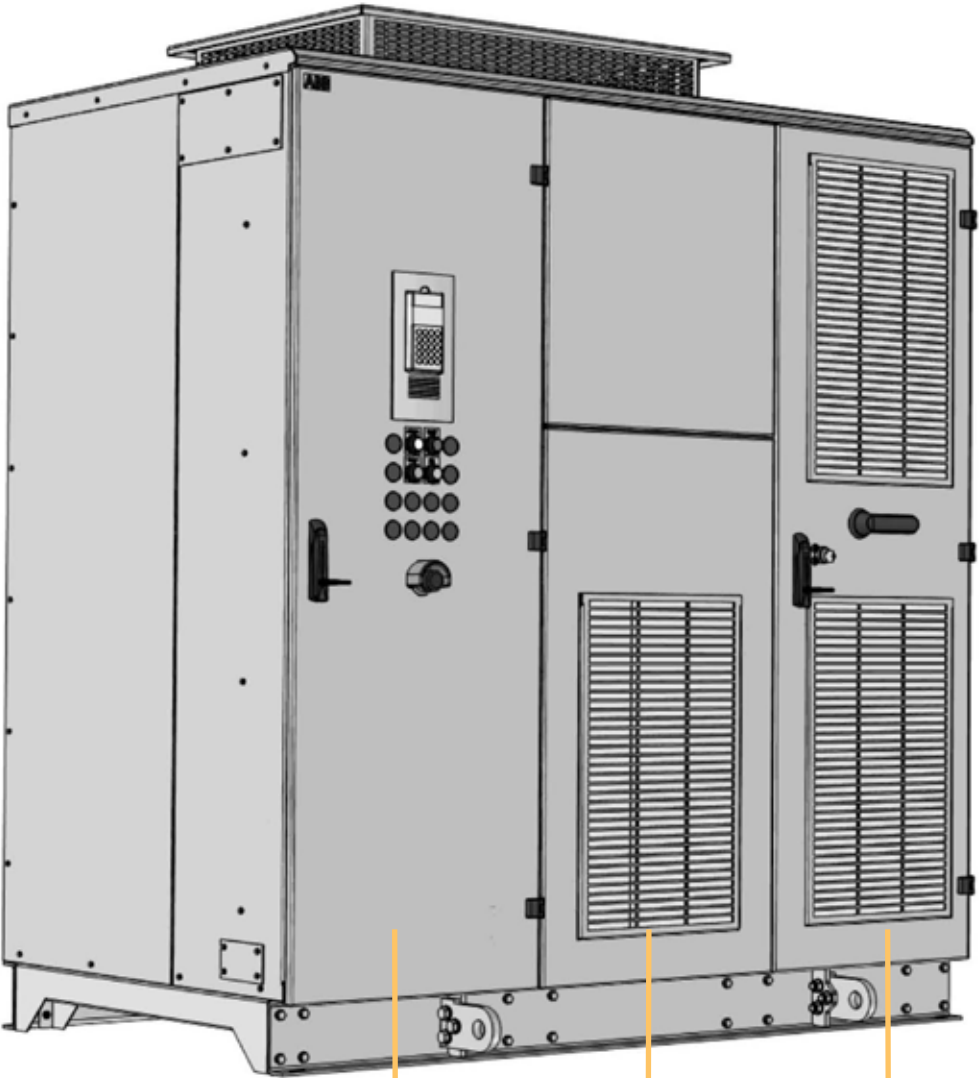


Picture 2B: Swing frame - Back

Incoming/Control Section

Item	Part number	Cabinet Qty	Description	Notes
1.21	3BHE024577R0101	2	AMC 34 Control Board	Equivalent to 68281059
1.22	3BHE024855R0101	2	INT-2 Board	Equivalent to 58914444
1.23	2UEA000651	2	64 Conductor Ribbon Cable	
1.24	2UEA000633	6	Terminal Block, Fuse Clip	
1.25	2UEA000761	6	Fuse, 4A	
1.26	2UEA000630	23	Terminal Block	
1.27	2UEA000632	3	Terminal Block	
1.28	2UEA000145	4	Terminal Block, Earthing	
1.29	2UEA001336	1	Circuit Breaker, 2 Pole 10A 480V	
1.30	2UEA000791	1	Circuit Breaker, 3 Pole 4A 480V	
1.31	2UEA000793	1	480V Relay, 24VDC Coil, NO Aux	Qty may differ based on options
1.32	2UEA000936	2	20A 3 Phase Buffer Module	Qty may differ based on options
1.33	2UEA002224 2UEA002709	1	Power Supply, 24VDC, 40A 480AC Power Supply, 24VDC, 120/240AC (+SPC01)	Part number is based on incoming control voltage utilized
1.34	2UEA001960	0	Battery, 24VDC, 12 Ah	Optional Equipment
1.35	3BHB003041R0101	1	IOEC Control Module	Qty may differ based on options
1.36	2UEA000843	6	IOEC Connector-3 Position	
1.37	2UEA000845	3	IOEC Connector-10 Position	
1.38	2UEA000861	2	IOEC Connector-7 Position	
1.39	2UEA001449	1	Manual Starter	Qty may differ based on options
1.40	2UEA001450	1	Contactator	Qty may differ based on options
1.41	2UEA001451	1	Terminal Block, Circuit Breaker Feed	Qty may differ based on options
1.42	2UEA001452	0	Aux. Block, 4 Pole	Qty may differ based on options
1.43	2UEA001453	1	Aux. Contact. Manual Starter	Qty may differ based on options
1.44	2UEA001961	0	UPS, DC, 24Vdc, 40A	Qty may differ based on options

Frame 1 Enclosure Design

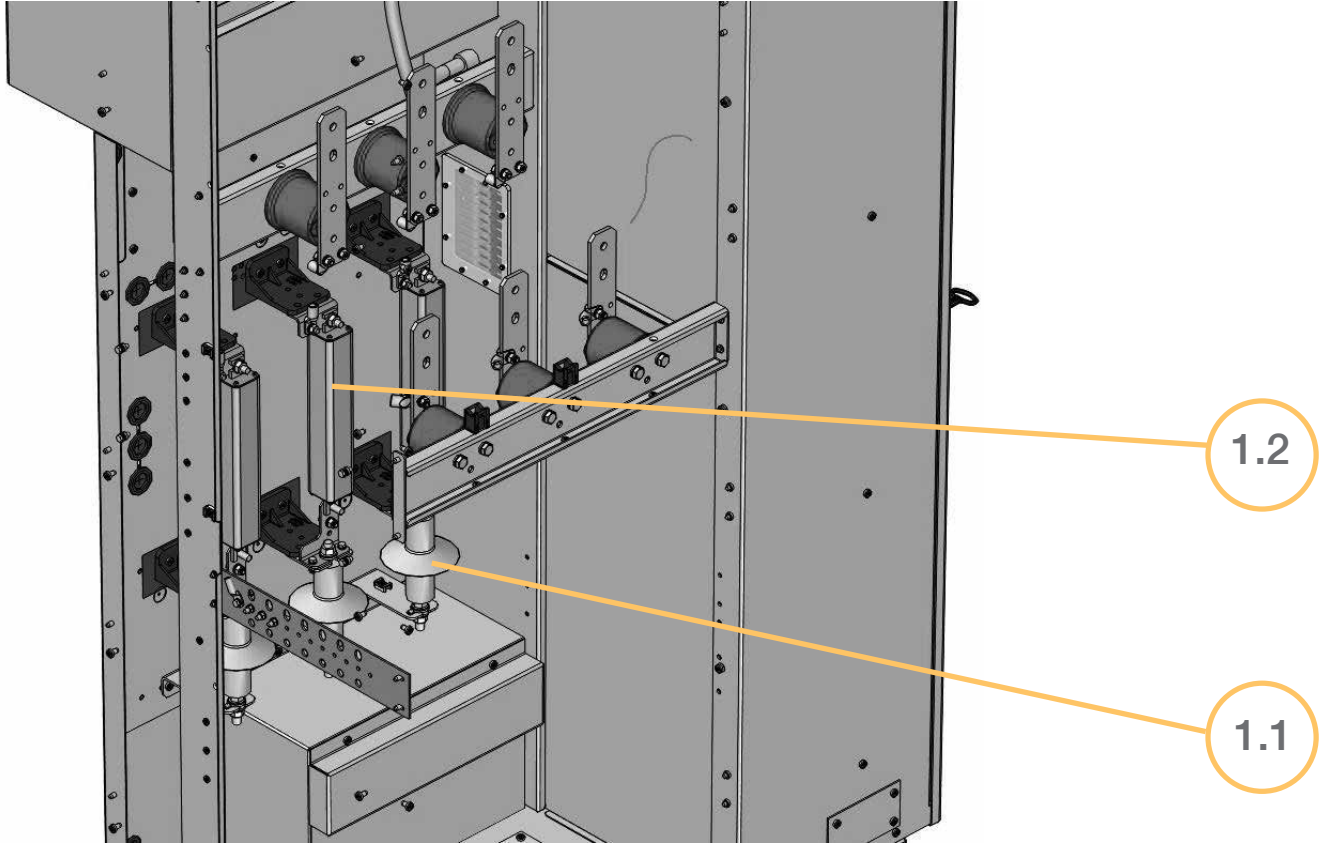


Incoming / Control
Section

IFU
Section

Phase Module
Section

Incoming/Control Section

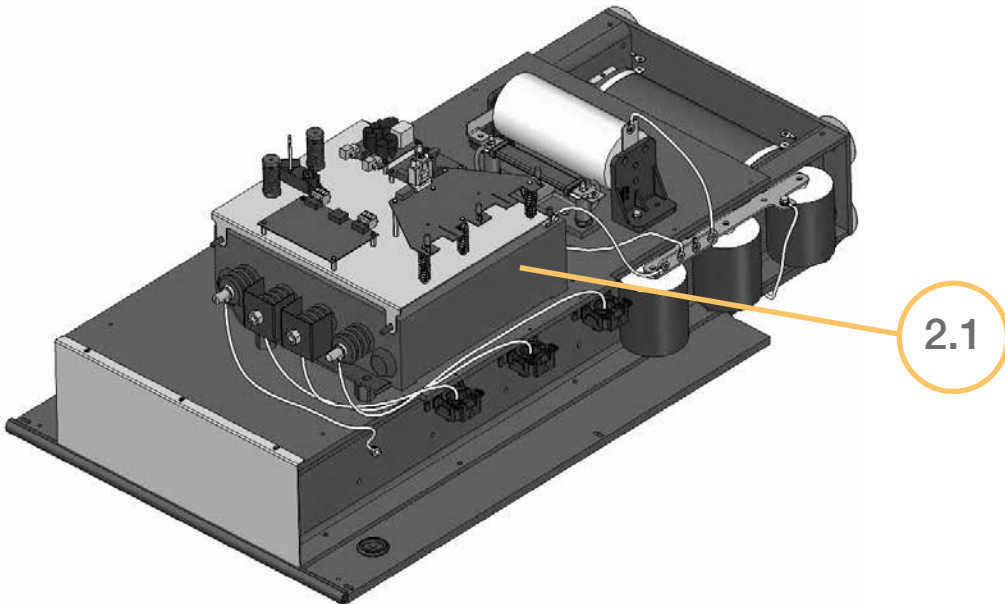


Picture 3: View from back of incoming section

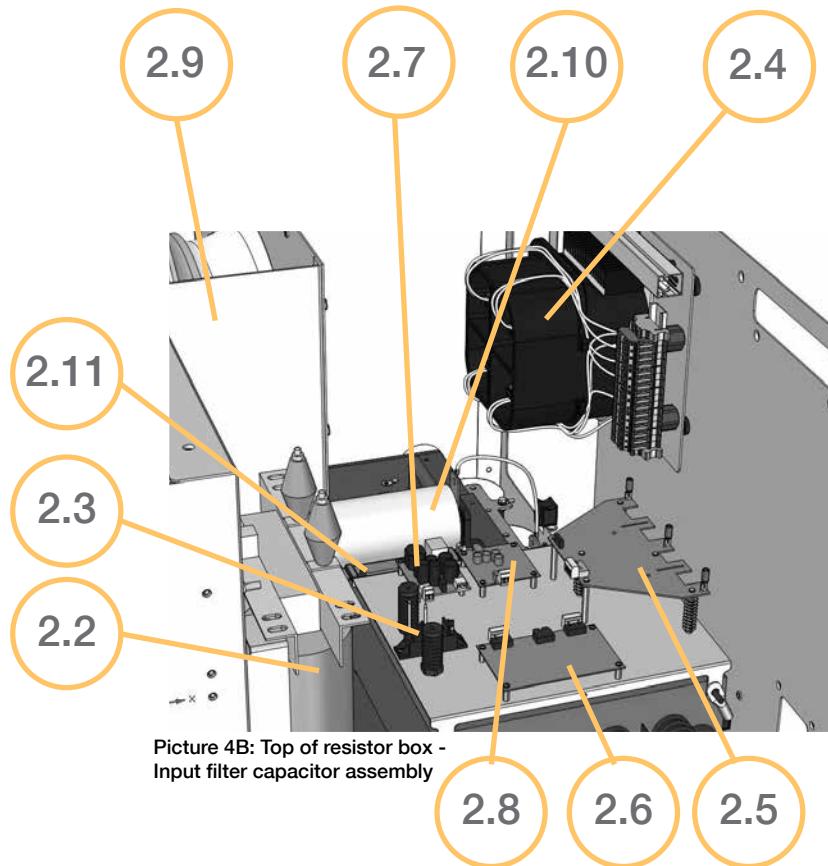
Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA000149	3	Surge Arrestor	
1.2	2UEA001267	3	Fuse, 70 Amp	300-400 HP
1.2	2UEA001268	3	Fuse, 140 Amp	450-700HP
1.2	2UEA000093	3	Fuse, 200 Amp	800-1000 HP

IFU Section

Middle - Resistor box components



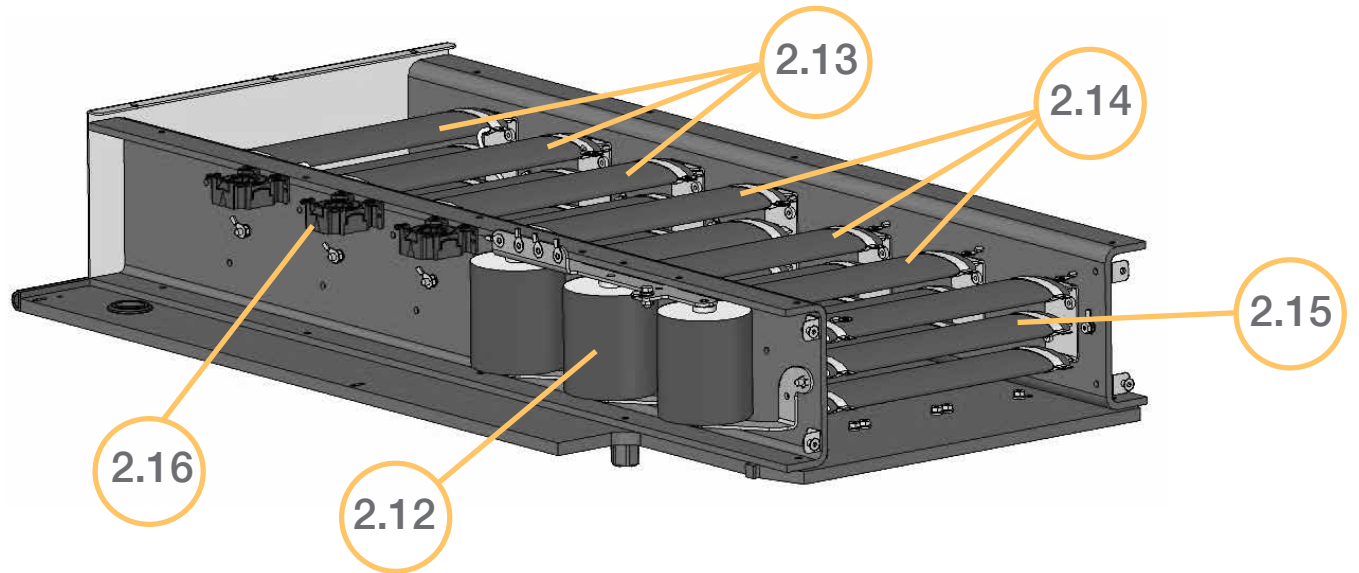
Picture 4A: Resistor box assembly



Picture 4B: Top of resistor box -
Input filter capacitor assembly

IFU Section

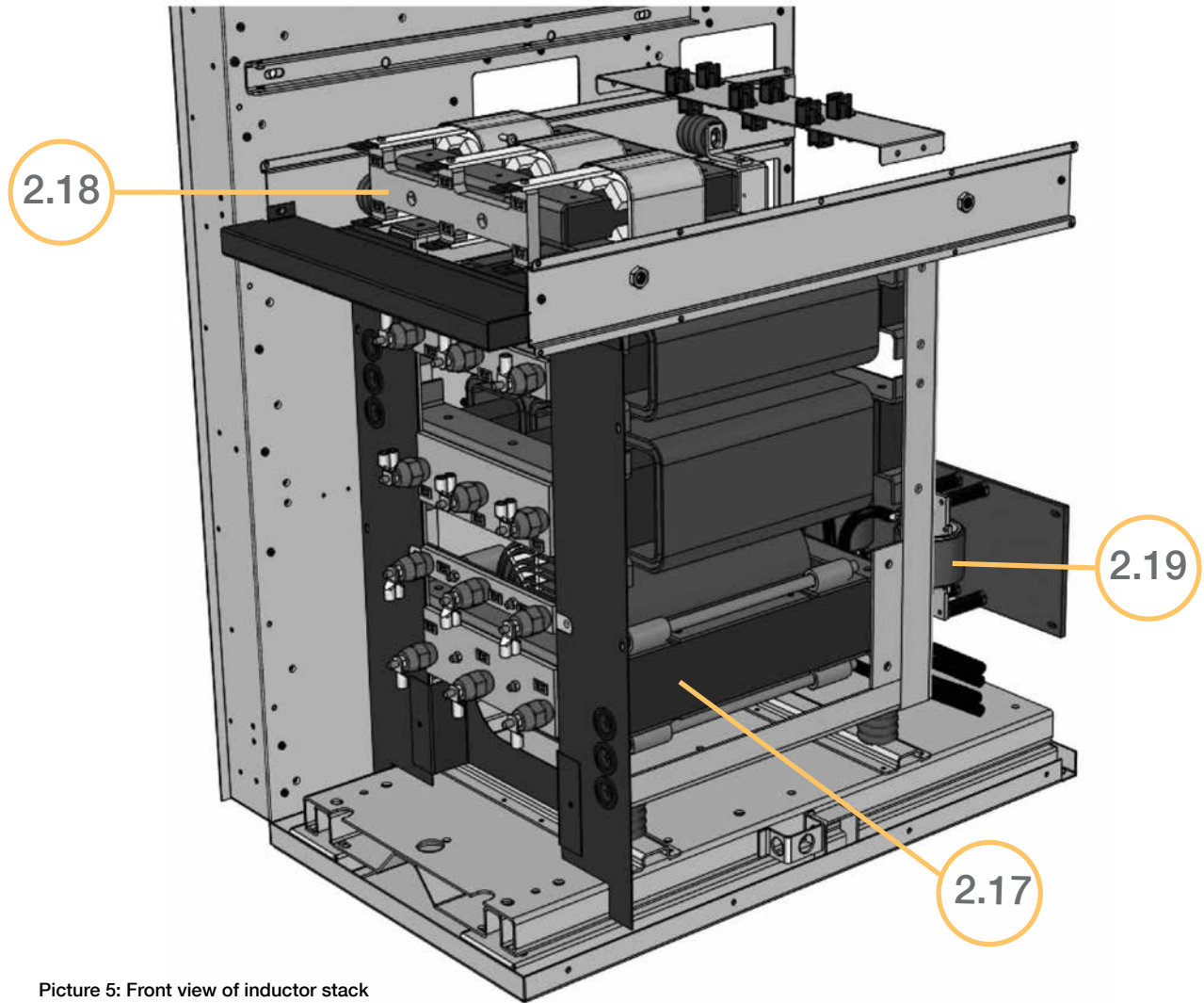
Middle - Resistor box components



Picture 4C: Resistor box section

Item	Part number	Cabinet Qty	Description	Notes
2.1	2UEA000992	1	IFU Capacitor	
2.2	2UEA000138	1	Charging Transformer	
2.3	2UEA000967	1	High Voltage Relay	
2.4	3BHE032593R0002	1	IGBT Power Supply	
2.5	3BHE032285R0102	1	HVD Board	
2.6	3BHE005555R0101	1	SYNC Board	
2.7	3BHE020959R0127	1	IGBT Power Supply Board	
2.8	3BHE006373R0101	1	Optical Electrical Interface (OEI) Board	
2.9	2UEA001051	1	Fan	
2.10	3BHB020698R0010	1	NP Grounding Capacitor	
2.11	3BHB024326R0001	1	Filter Assembly	
2.12	2UEA000005	3	EMC Filter Capacitor	
2.13	2UEA000004	3	EMC Filter Resistor	
2.14	2UEA000993	3	IFU Resistor	
2.15	2UEA000711	1	NP CM Filter Resistor	
2.16	2UEA000988	3	LEM Current Transducer	

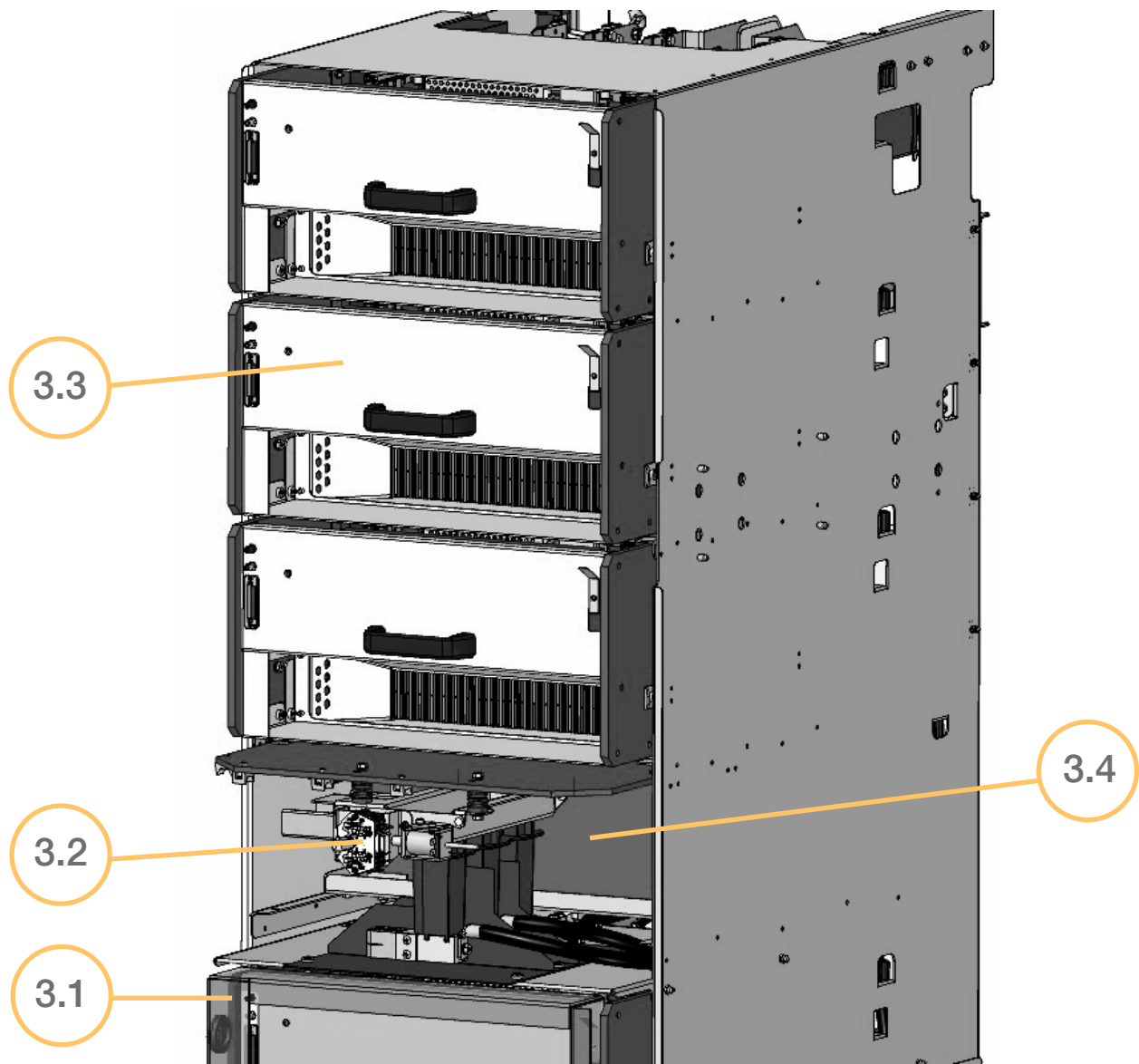
IFU Section Bottom half



Picture 5: Front view of inductor stack

Item	Part number	Cabinet Qty	Description	Notes
2.17	2UEA002918	1	Inductor Stack Kit	
2.18	2UEA000886	1	EMC Filter Inductor (SN<2124903744)	For drives in this serial range the EMC Inductor is located above the inrestor, not on top of the Inductor Stack as shown above.
2.18	2UEA002220	1	EMC Filter Inductor (SN≥2124903744)	
2.19	2UEA002349	2	Inrestor	

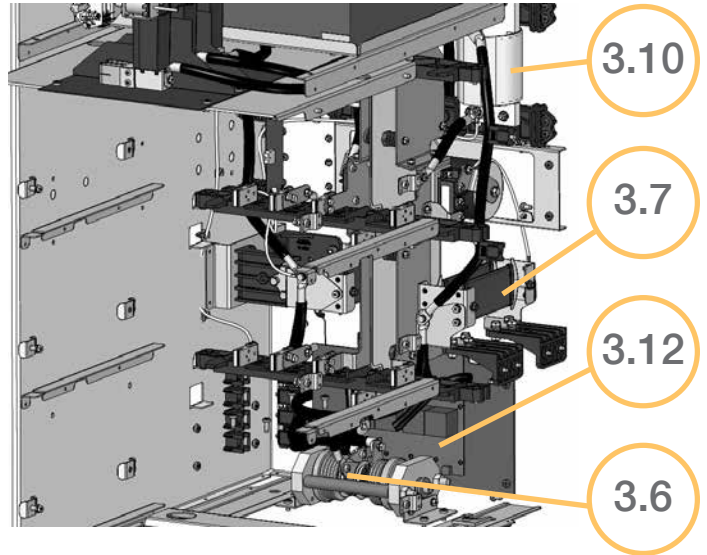
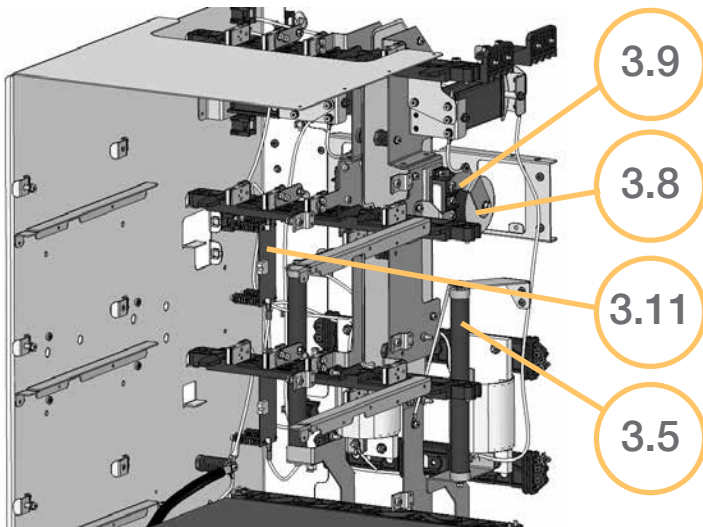
Phase Module Section



Picture 6: Front view of phase module cabinet

Item	Part number	Cabinet Qty	Description	Notes
3.1	2UEA003089	1	Phase Module Plenum	
3.2	3BHB021516R0001	1	Grounding Switch	
3.3	2UEA001345		Phase Module Kit	Kit includes 1 phase module and 1 removal tool
3.4	2UEA000358	1	DC Link Capacitor	

Phase Module Section NP Frame



Picture 7A: Top Half of NP Frame

Picture 7B: Bottom Half of NP Frame

Item	Part number	Cabinet Qty	Description	Notes
3.5	2UEA000893	2	DC Link Resistor	
3.6	2UEA003051	1	Crowbar Stack Assembly	
3.7	2UEA000360	4	Clamp Resistor	
3.8	2UEA000357	4	Clamp Capacitor	
3.9	2UEA000911	4	Clamp Diode	
3.10	2UEA000883	4	Clamp Inductor	
3.11	3BHE009017R0102	4	Voltage Level Short Circuit Detection (VLSCD) Board	
3.12	3BHE024747R0101	1	Crowbar Board	

Frame 2 Enclosure Design

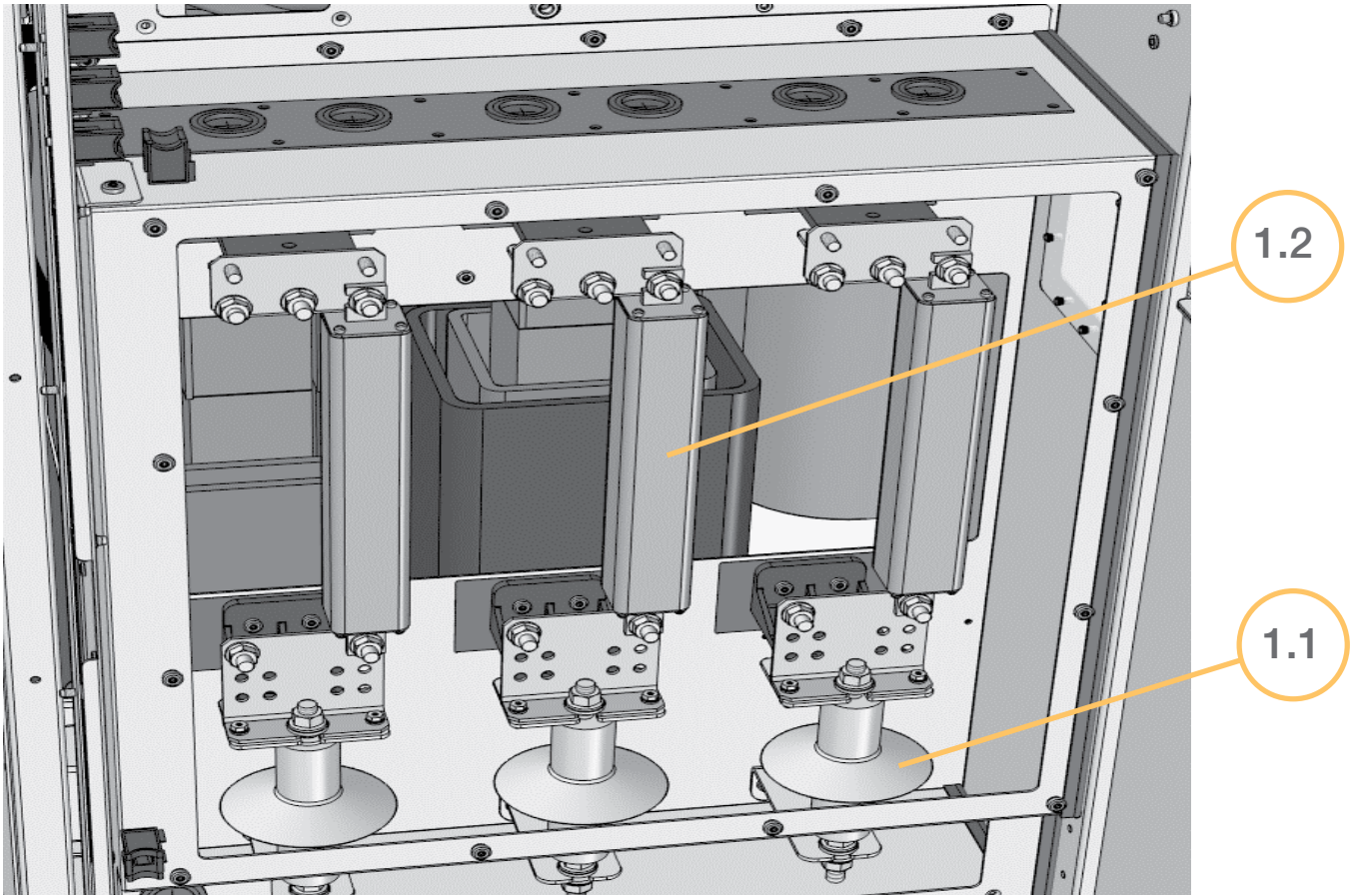


Incoming / Control
Section

IFU Sections
(Left & Right)

Phase Module
Section

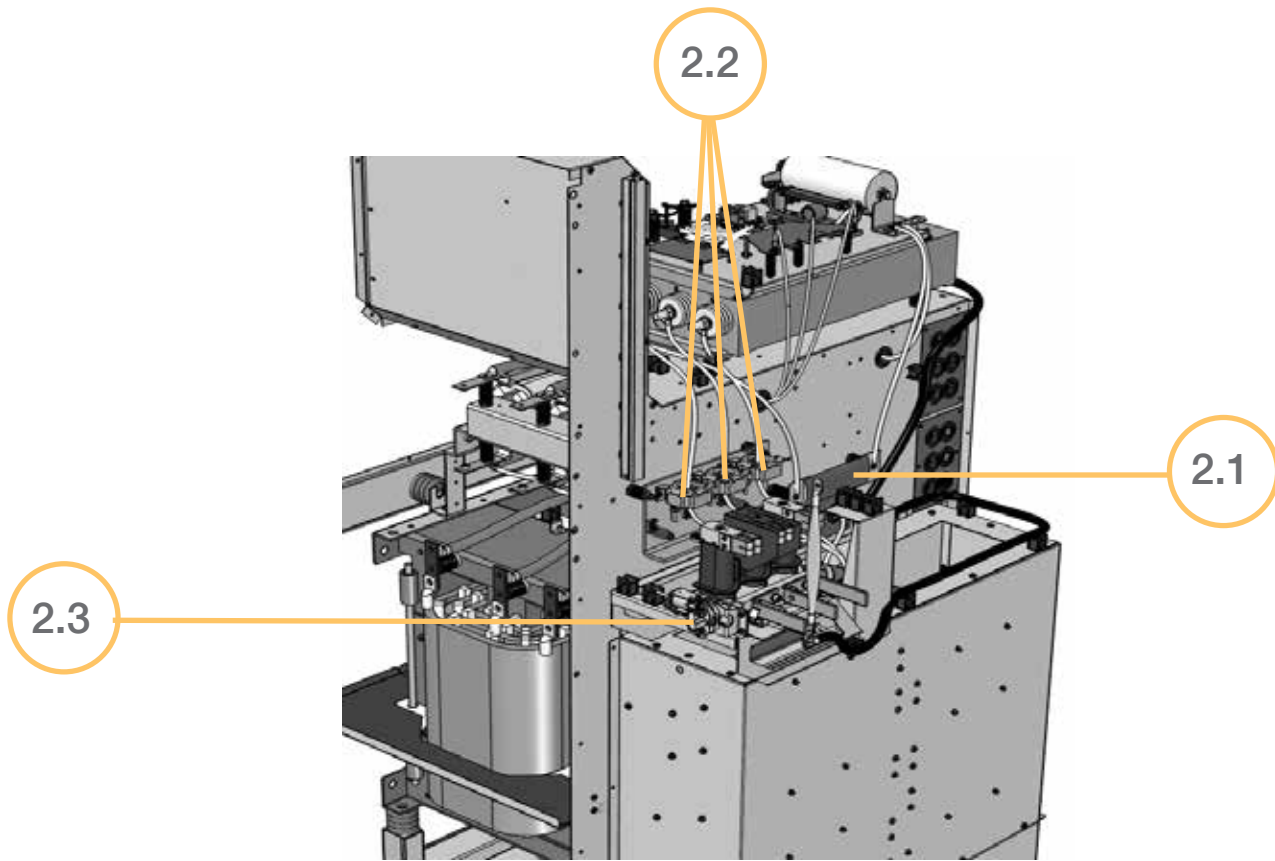
Incoming/Control Section



Picture 8: View from back of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA000149	3	Surge Arrestor	
1.2	2UEA001268	6	Fuse, 140 Amp	1250 HP
1.2	2UEA002203	6	Fuse, 160 Amp	1500-1750 HP
1.2	2UEA000093	6	Fuse, 200 Amp	2000 HP

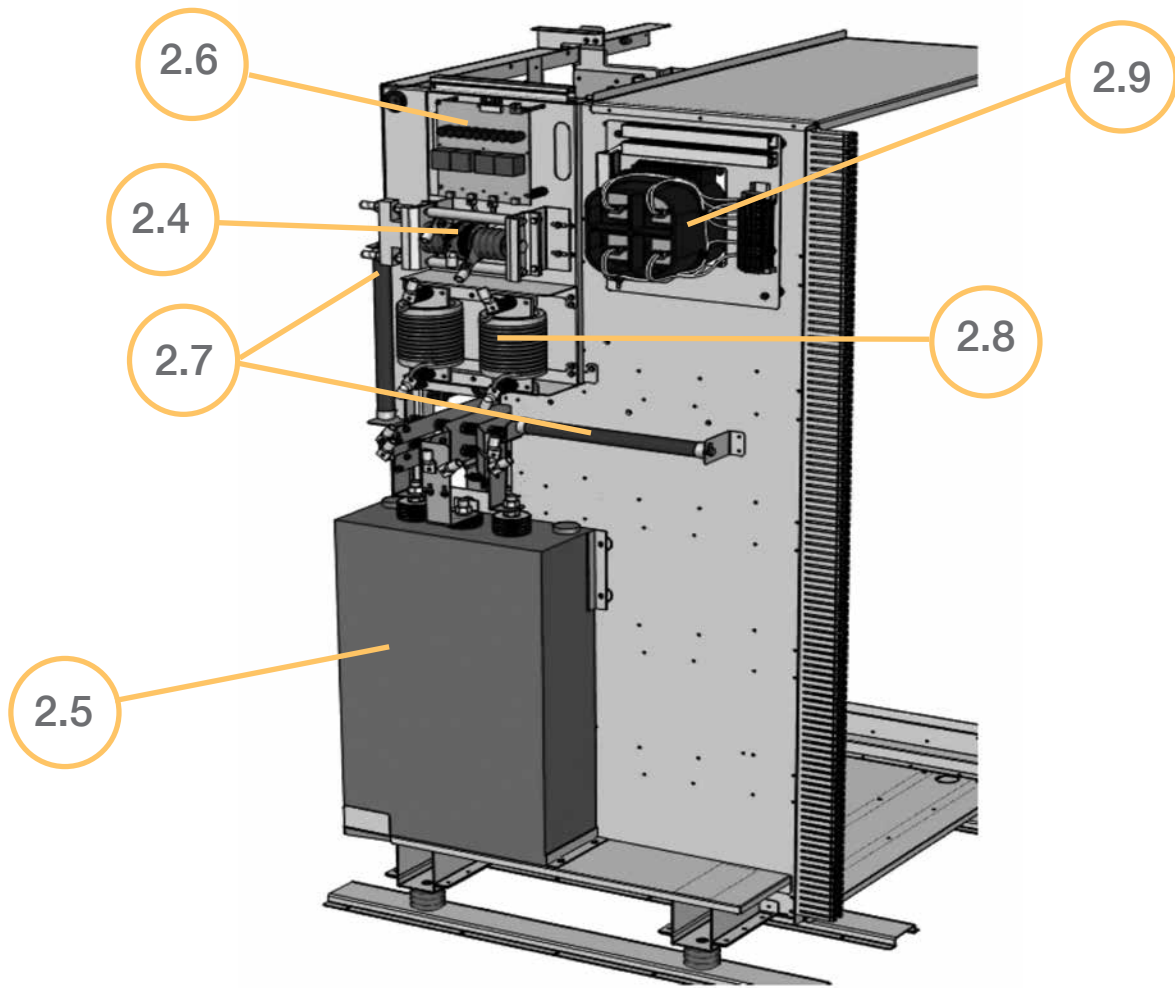
IFU Section Right Cabinet



Picture 9A : Right Cabinet Left Side

Item	Part number	Cabinet Qty	Description	Notes
2.1	2UEA001407	1	CM Filter Resistor	
2.2	2UEA001456	3	Current Transducer	
2.3	3BHB021516R0001	1	Grounding Switch	

IFU Section Right Cabinet

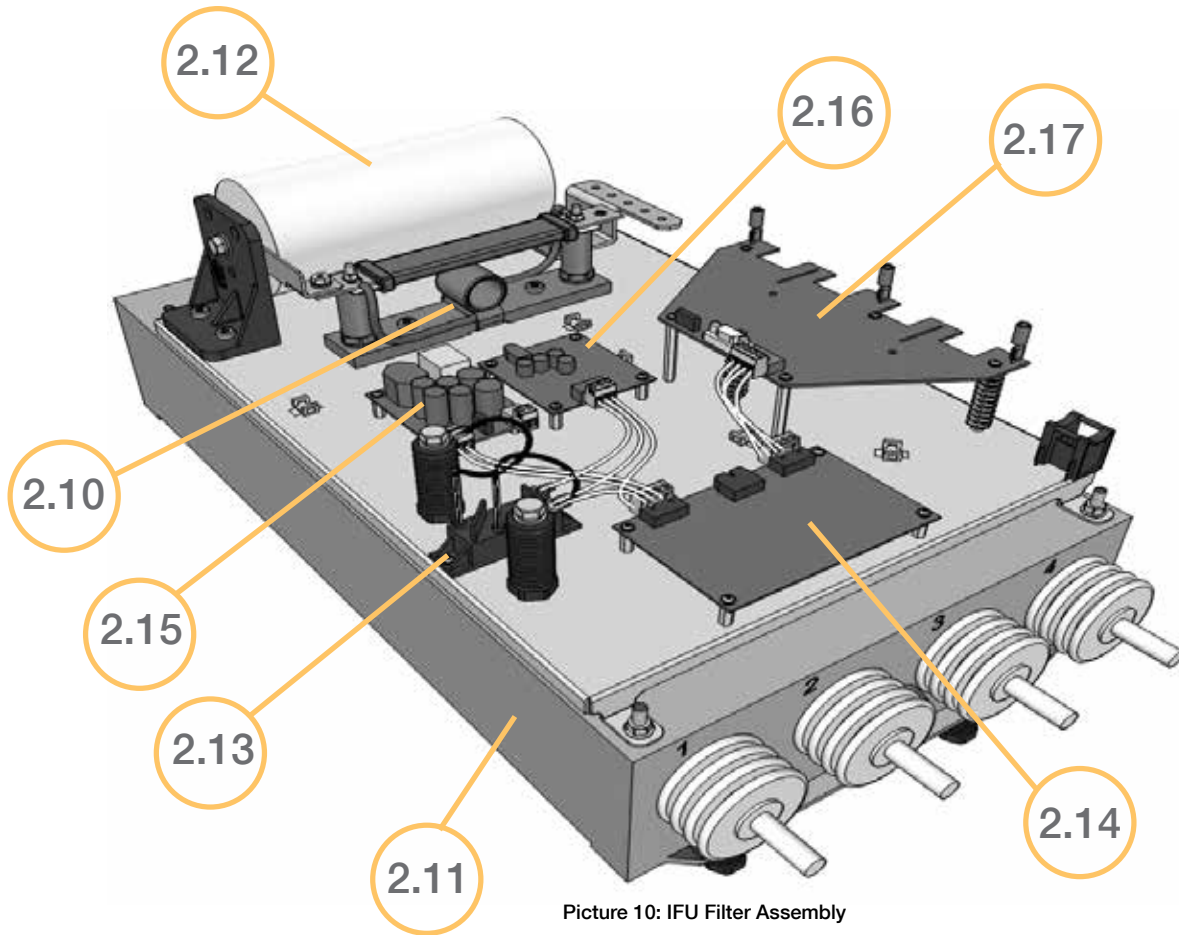


Picture 9B: Right Cabinet, Right Side

Item	Part number	Cabinet Qty	Description	Notes
2.4	2UEA003063	1	Crowbar Stack Assembly	
2.5	2UEA001406	1	DC Link Capacitor	
2.6	3BHE024747R0101	1	Crowbar Board	
2.7	2UEA001348	2	DC Link Resistor	
2.8	2UEA003150	2	Inrestor	Please see technical note on pg. 43 of this manual
2.9	3BHE032593R0002	1	IPS Power Supply	

IFU Section

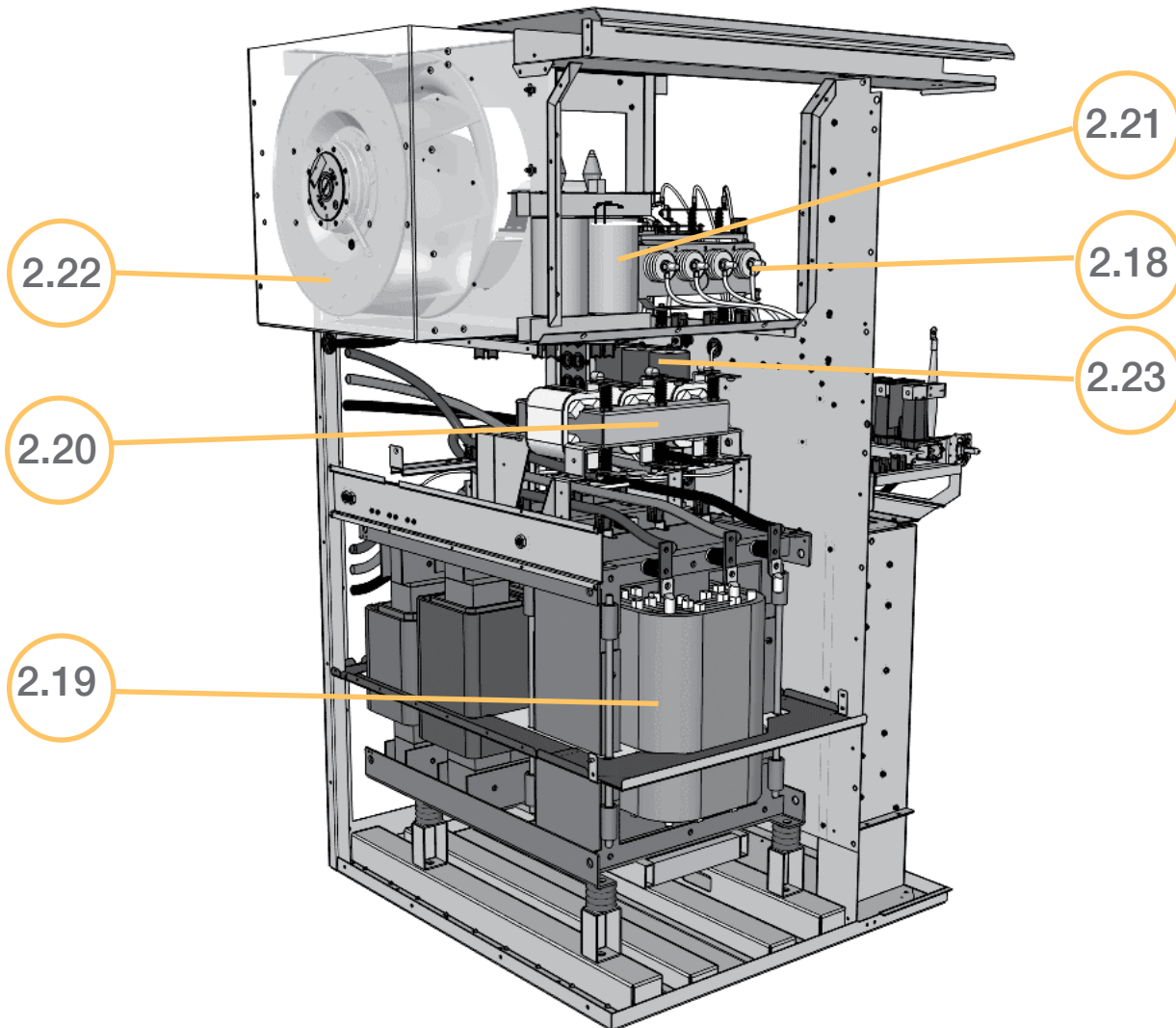
Filter Assembly



Picture 10: IFU Filter Assembly

Item	Part number	Cabinet Qty	Description	Notes
2.10	3BHB024326R0001	1	Filter Assembly	
2.11	2UEA001352	1	IFU Capacitor	
2.12	3BHB020698R0010	1	NP Grounding Capacitor	
2.13	2UEA000967	1	High Voltage Relay	
2.14	3BHE005555R0101	1	Sync Board	
2.15	3BHE020959R0127	1	IGBT Power Supply Board	
2.16	3BHE006373R0101	1	Optical Electrical Interface (OEI) Board	
2.17	3BHE032285R0102	1	High Voltage Divider (HVD) Board	

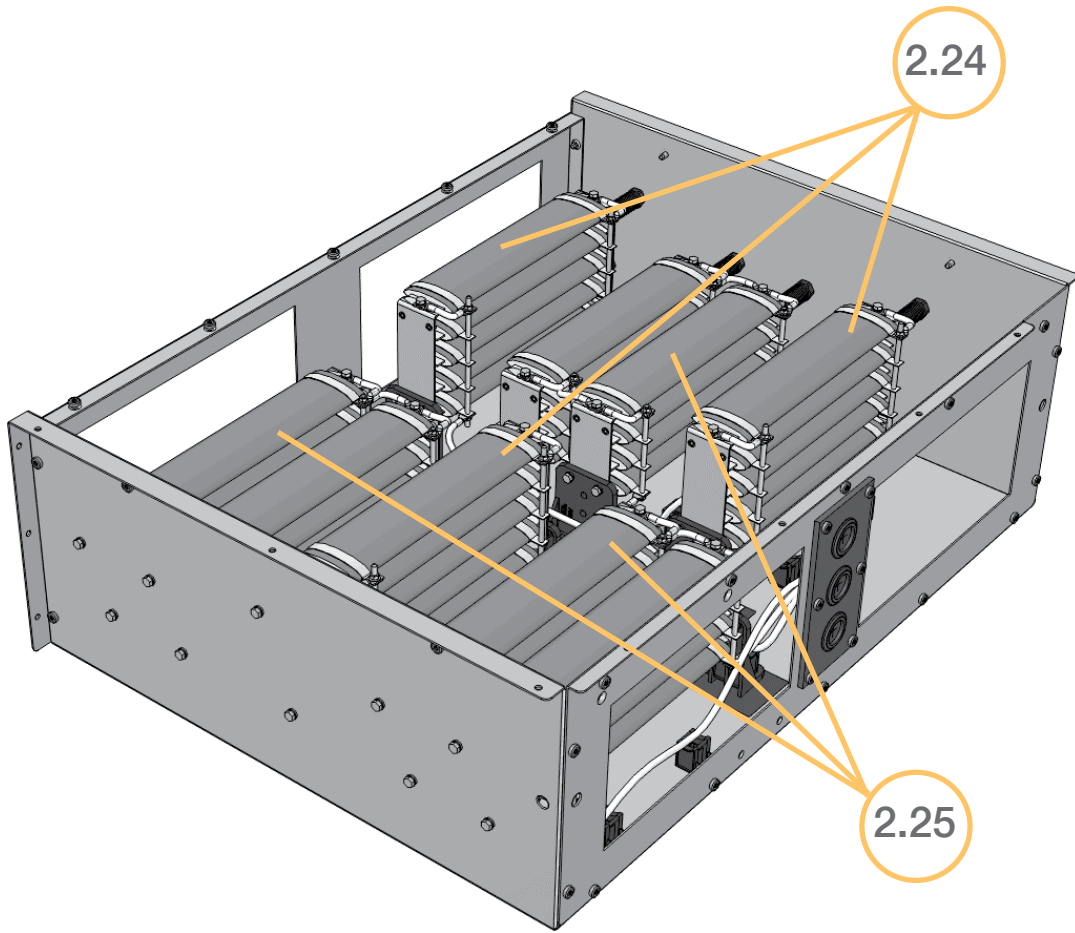
IFU Section Left Cabinet



Picture 11: Left IFU Cabinet

Item	Part number	Cabinet Qty	Description	Notes
2.18	2UEA001352	1	IFU Capacitor	
2.19	2UEA003159	1	Inductor Stack kit with Base	
2.20	2UEA003160	1	EMC Filter Inductor	
2.21	2UEA000138	1	Charging Transformer	
2.22	2UEA001051	2-3	Cooling Fan	
2.23	2UEA001404	3	EMC Filter Capacitor	

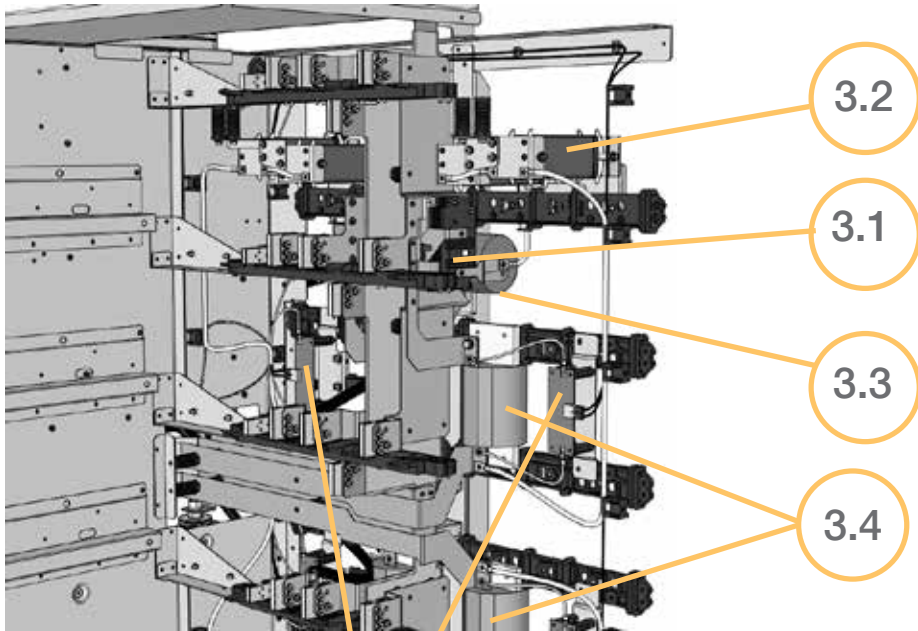
IFU Section Resistor Assembly



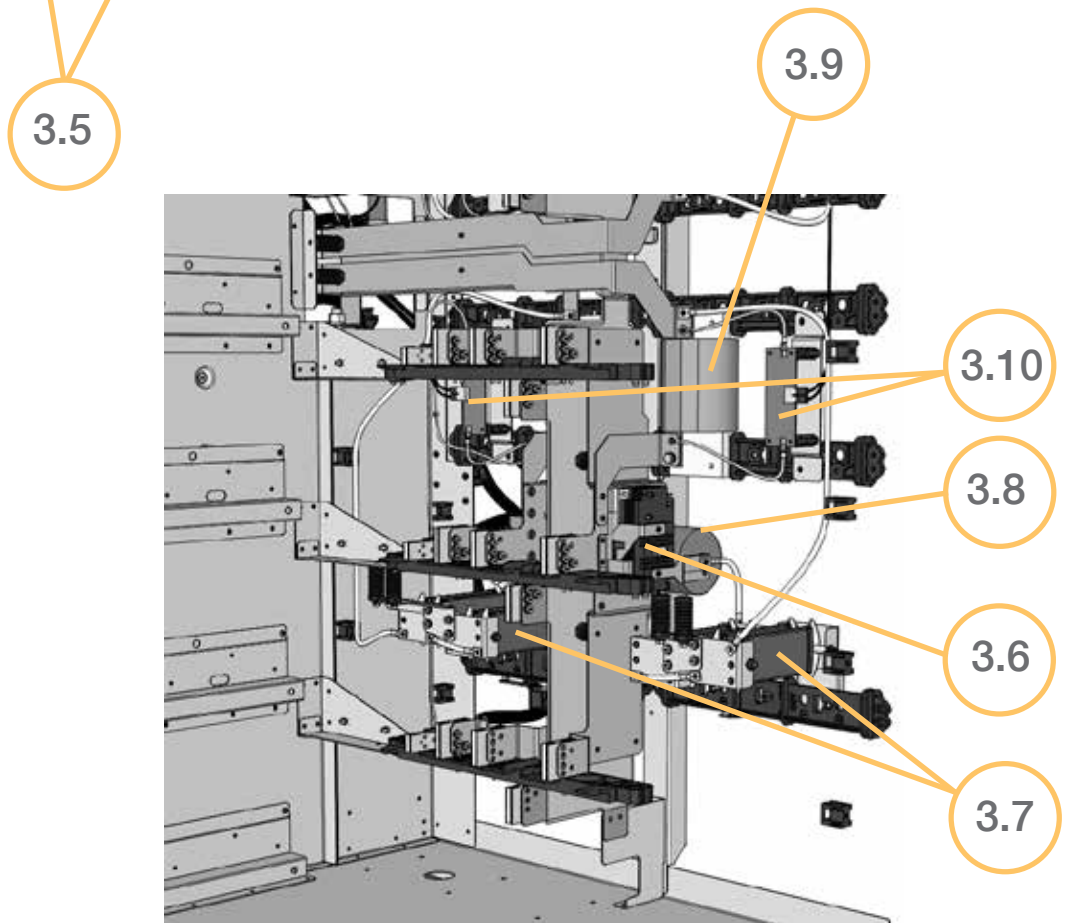
Picture 12: Resistor Assembly -
view from the top

Item	Part number	Cabinet Qty	Description	Notes
2.24	2UEA001350	3	IFU Resistor	
2.25	2UEA001505	3	EMC Filter Resistor	

Phase Module Section NP Frame



Picture 13A: NP Frame Top



Picture 13B: NP Frame Bottom

Phase Module Section

NP Frame

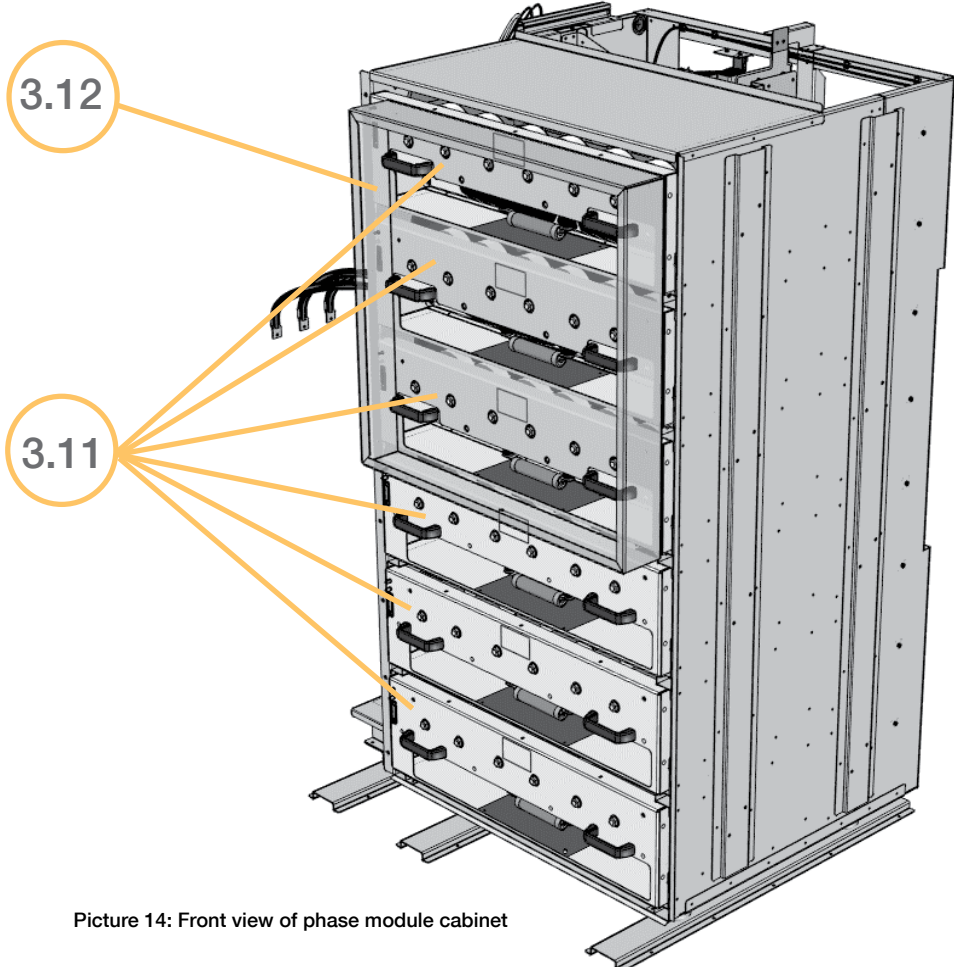
NP Frame Top

Item	Part number	Cabinet Qty	Description	Notes
3.1	2UEA000911	8	Clamp Diode	
3.2	2UEA000360	8	Clamp Resistor	
3.3	2UEA001405	4	Clamp Capacitor	
3.4	2UEA001403	4	Clamp Inductor	
3.5	3BHE009017R0102	4	Voltage Level Short Circuit Detection (VLSCD) Board	

NP Frame Bottom

Item	Part number	Cabinet Qty	Description	Notes
3.6	2UEA000911	8	Clamp Diode	
3.7	2UEA000360	8	Clamp Resistor	
3.8	2UEA001405	4	Clamp Capacitor	
3.9	2UEA001403	4	Clamp Inductor	
3.10	3BHE009017R0102	4	Voltage Level Short Circuit Detection (VLSCD) Board	

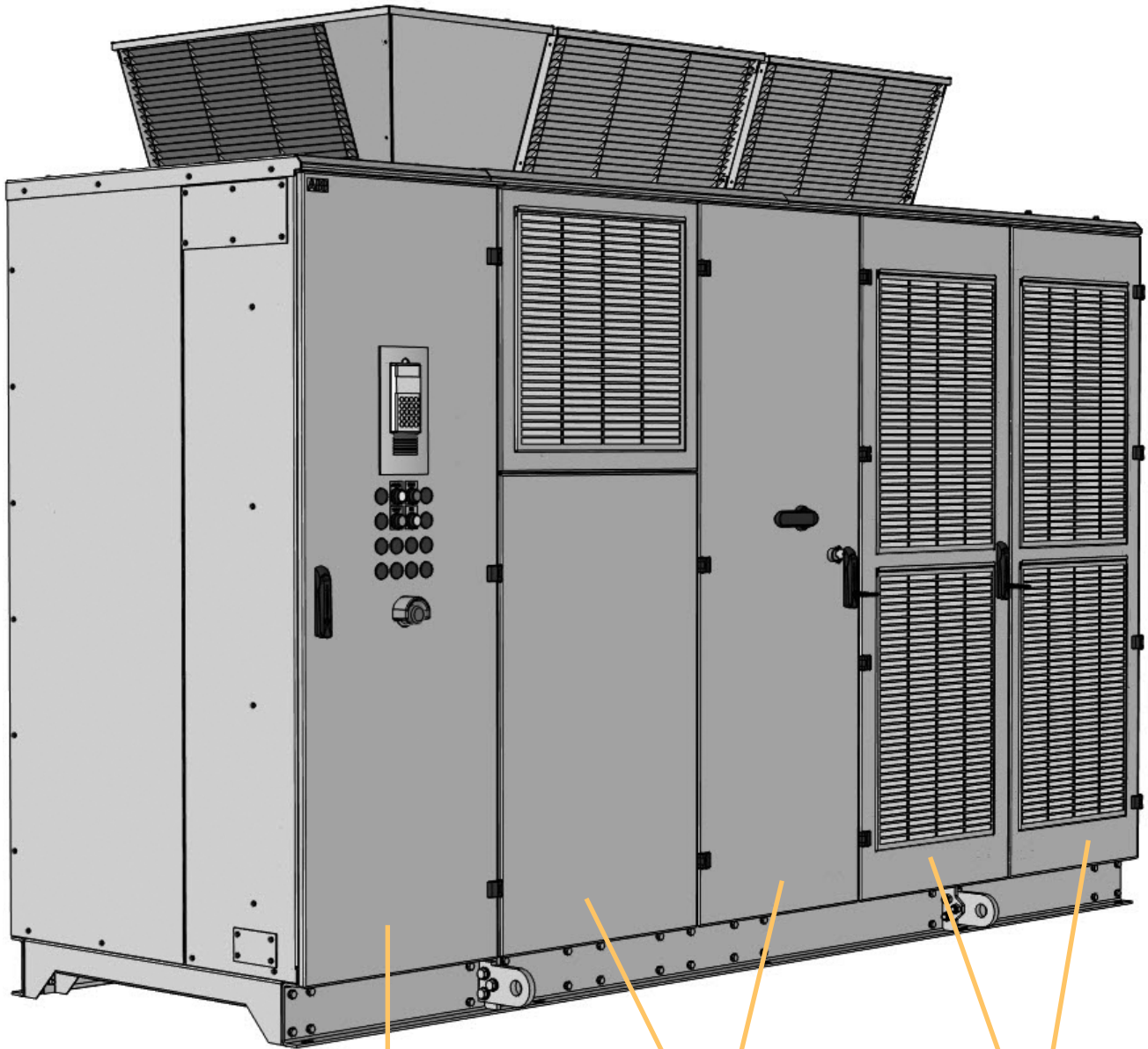
Phase Module Section Front



Picture 14: Front view of phase module cabinet

Item	Part number	Cabinet Qty	Description	Notes
3.11	2UEA002570		Phase Module Kit	Kit includes 1 phase module and 1 removal tool
3.12	2UEA001770	2	Phase Module Plenum	

Frame 3 Enclosure Design

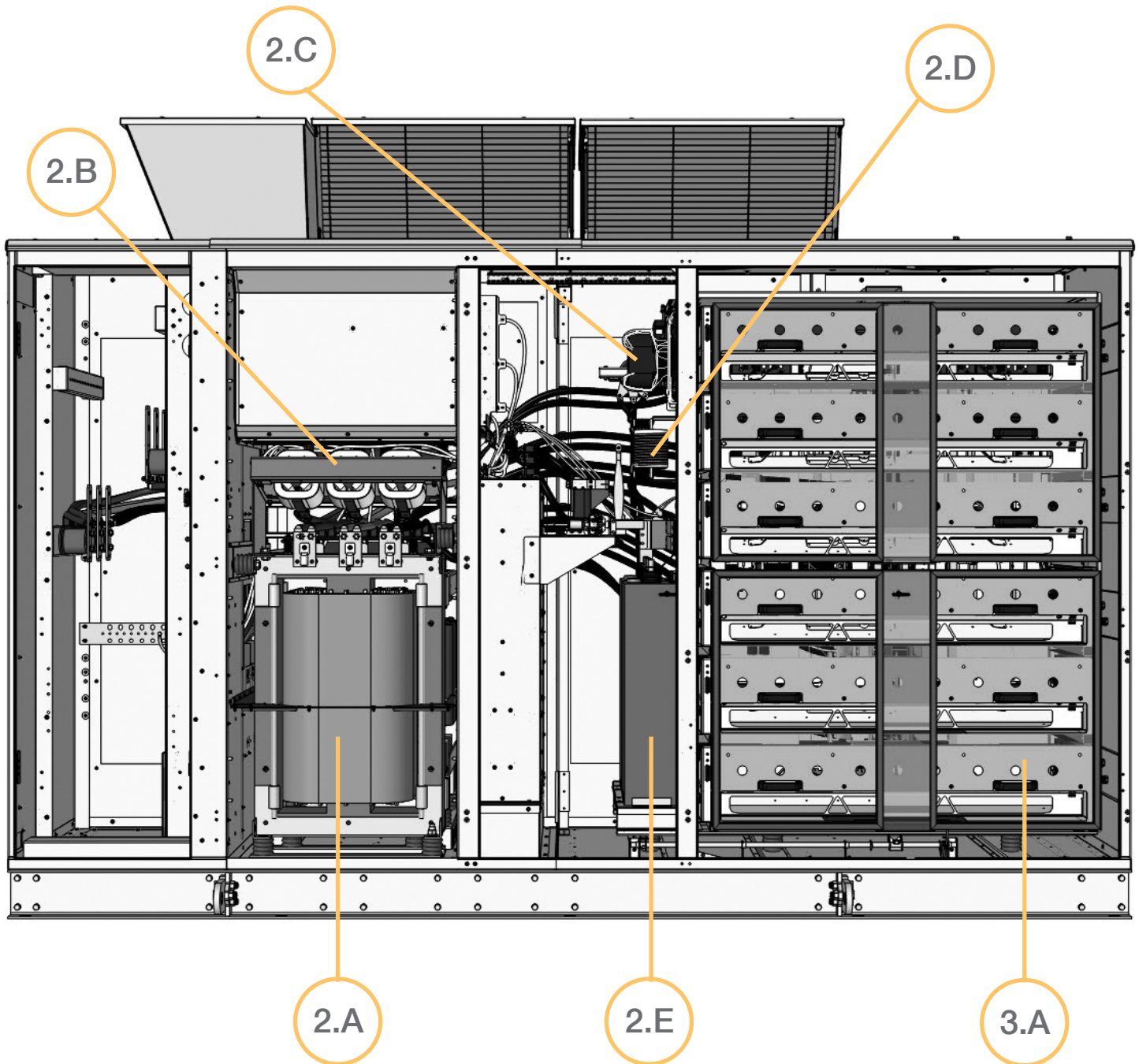


Incoming / Control
Section

IFU Sections
(Left & Right)

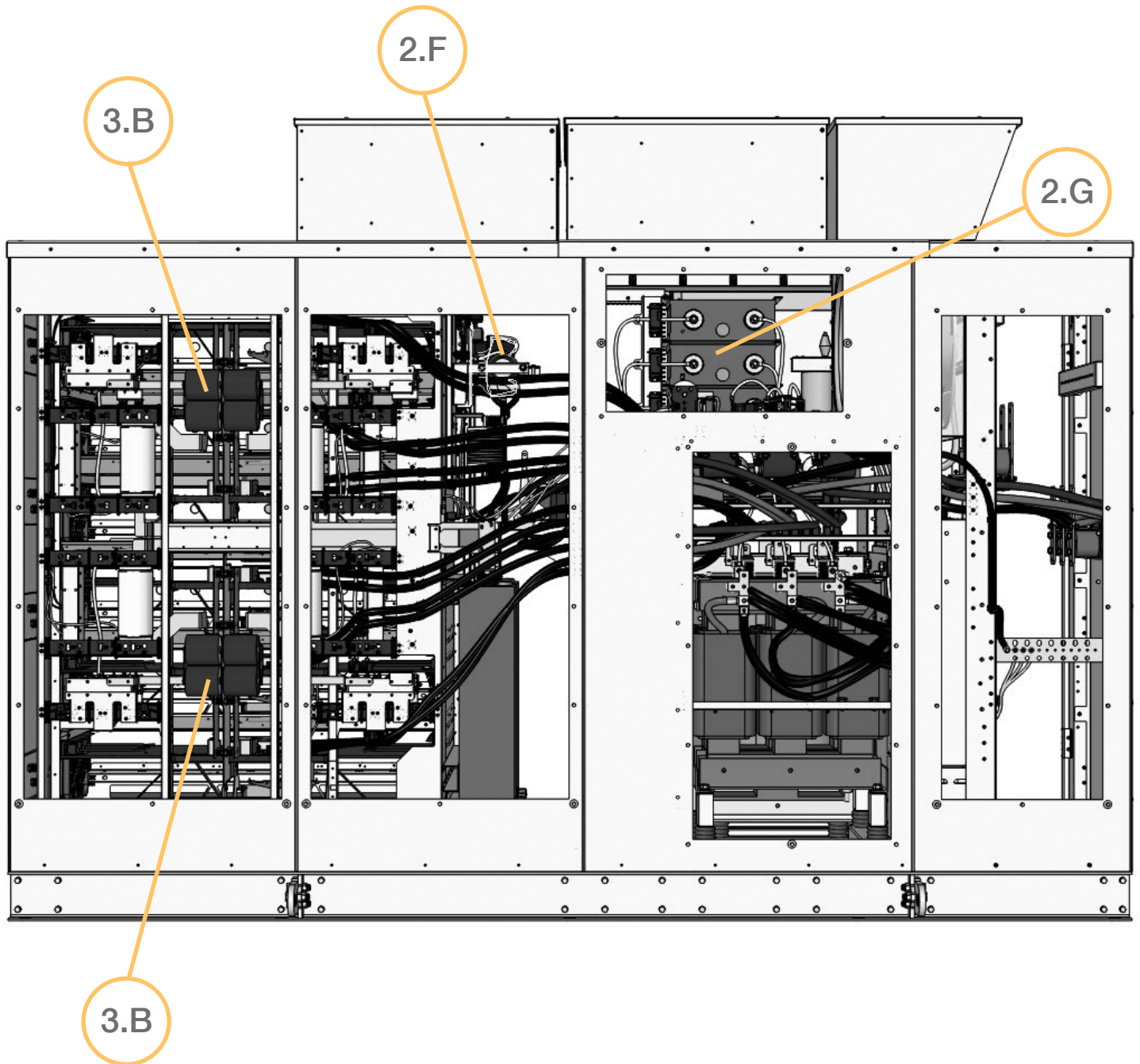
Phase Module
Section

Frame 3 Front View



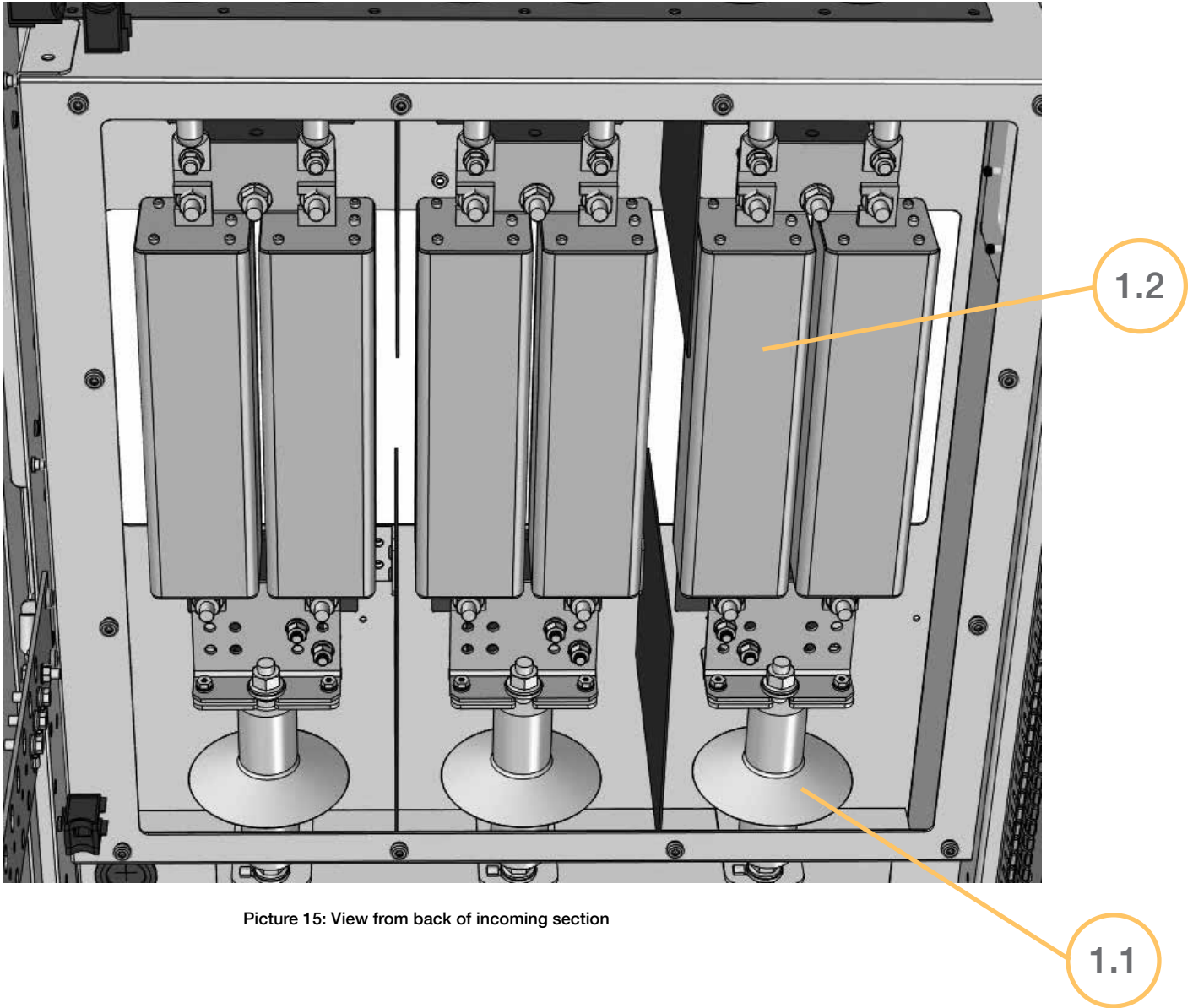
Item	Part number	Cabinet Qty	Description	Notes
2.A	2UEA003165	1	Common Mode Inductor Stack	IFU Section - Right Cabinet
2.B	2UEA003166	1	EMC Filter Inductor	IFU Section - Right Cabinet
2.C	3BHE032593R0002	1	IGBT Power Supply	IFU Section - Right Cabinet
2.D	2UEA002348	2	Inrestor	IFU Section - Right Cabinet
2.E	2UEA001466	2	DC Link Capacitor	IFU Section - Left Cabinet
3.A	2UEA003021		Phase Module Kit with removal tool	Phase Module Section

Frame 3 Rear View



Item	Part number	Cabinet Qty	Description	Notes
3.B	2UEA001465	8	Capacitor Clamp	Phase Module Section
2.F	2UEA003031	1	Crowbar Stack Assembly	IFU Section - Left Cabinet
2.G	2UEA001463	3	IFU Capacitor	IFU Section - Right Cabinet

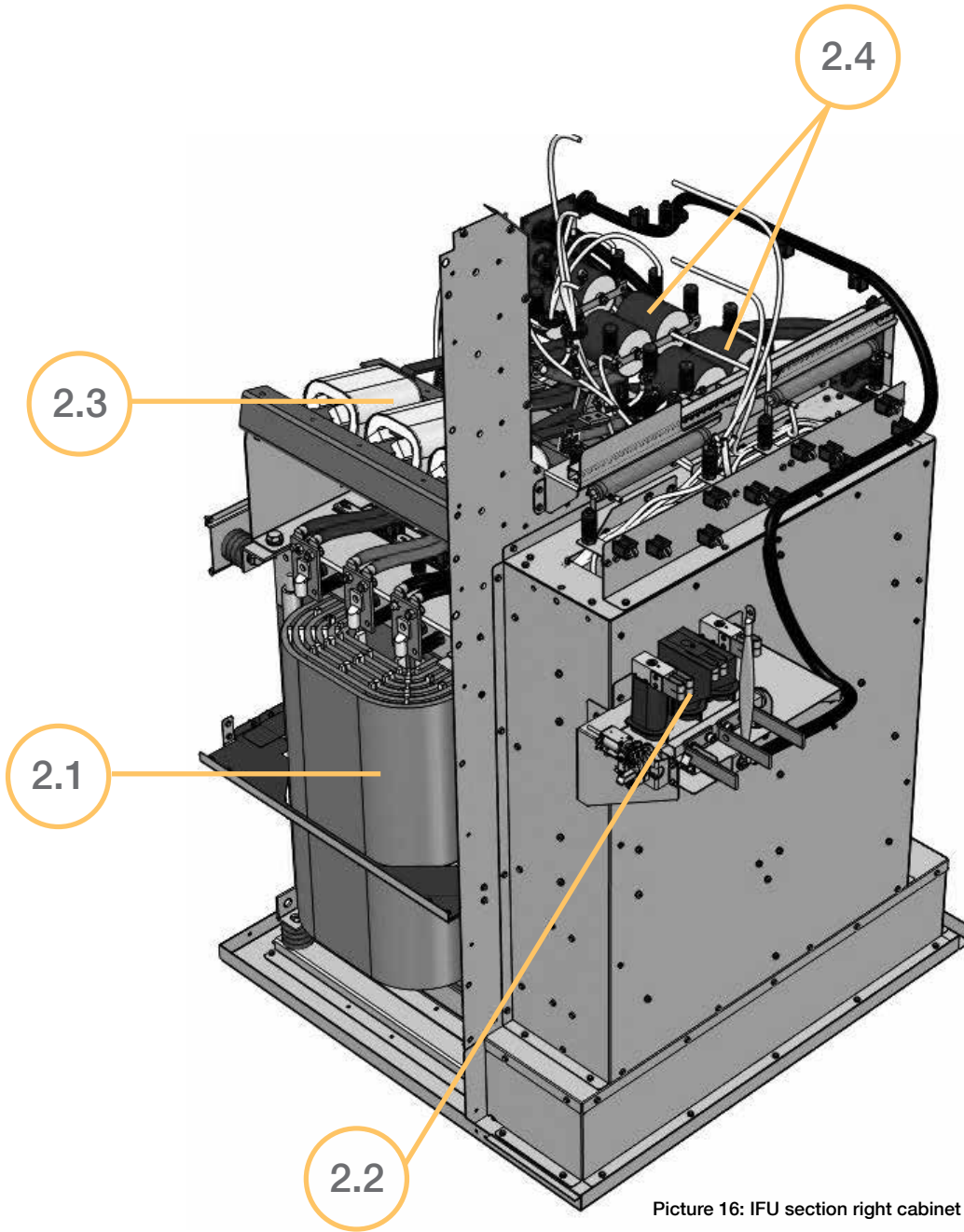
Incoming/Control Section



Picture 15: View from back of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA000149	3	Surge Arrestor	
1.2	2UEA001947	6	Fuse, 230 Amp	2250 - 3000 HP

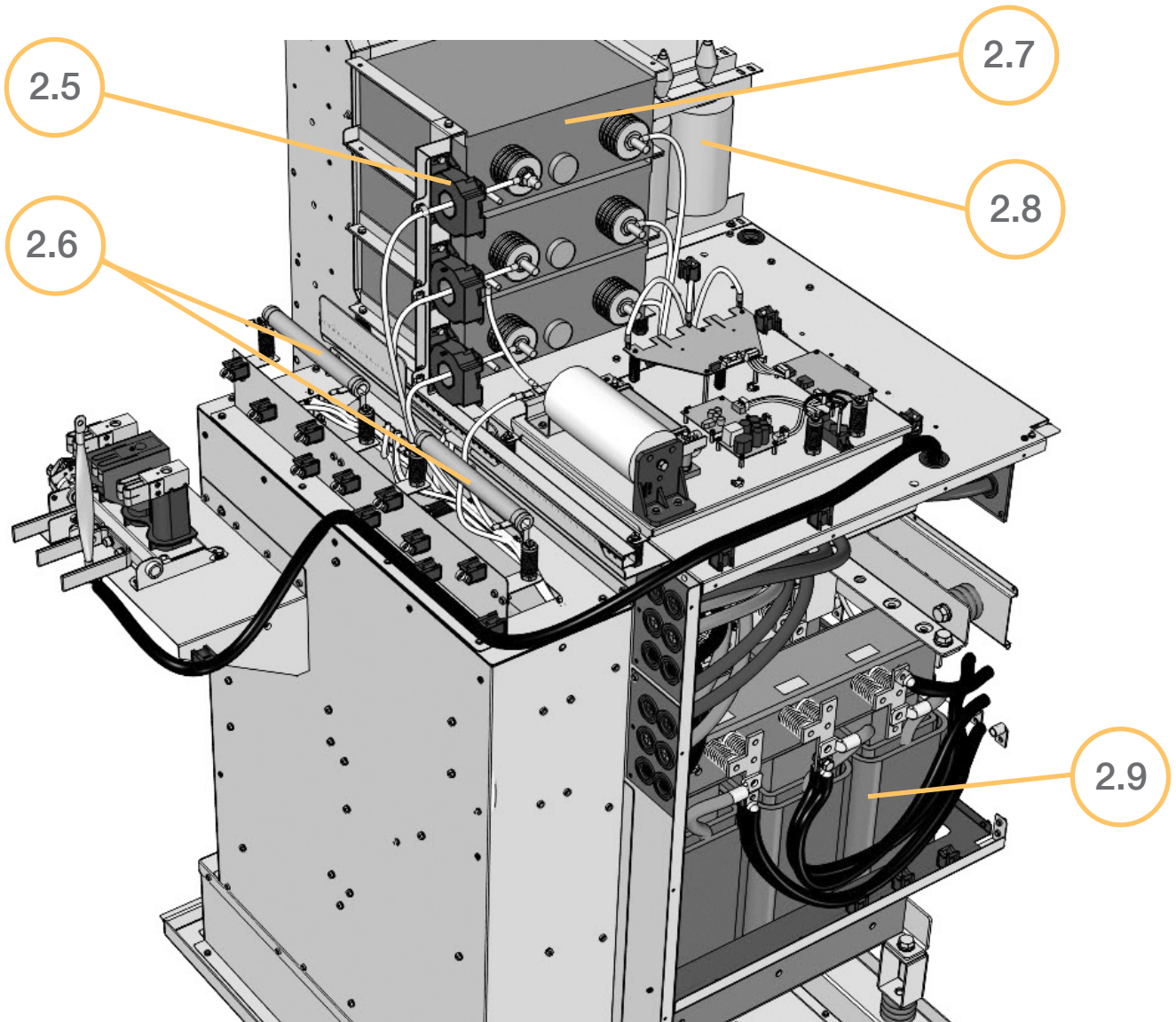
IFU Section Right Cabinet - Front



Picture 16: IFU section right cabinet view from front

Item	Part number	Cabinet Qty	Description	Notes
2.1	2UEA003165	1	Common Mode Inductor	
2.2	3BHB021516R0001	1	Grounding Switch	
2.3	2UEA003166	1	EMC Filter Inductor	
2.4	2UEA001464	6	EMC Filter Capacitor	

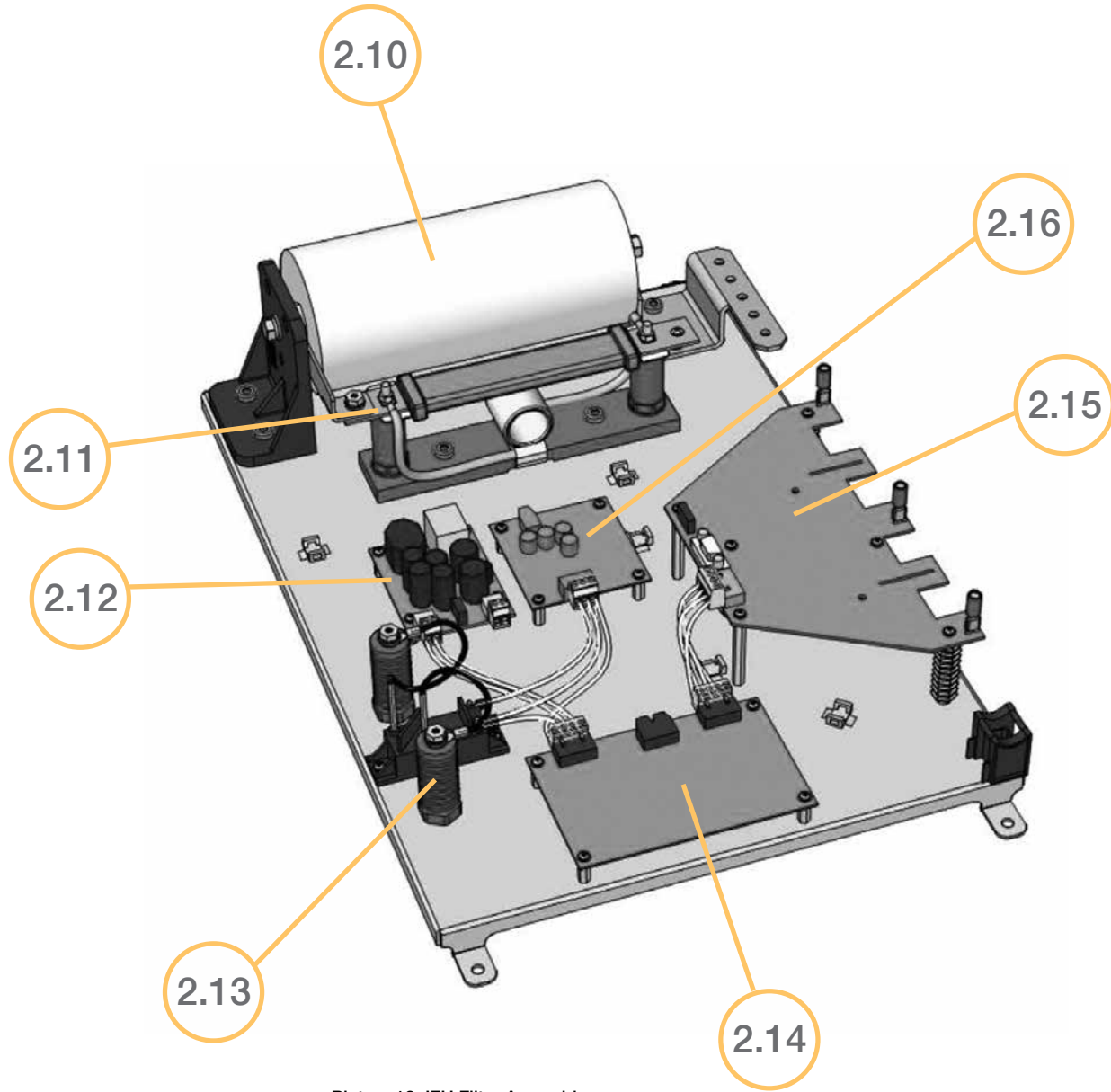
IFU Section Right Cabinet - Rear



Picture 17: IFU section right cabinet view from rear

Item	Part number	Cabinet Qty	Description	Notes
2.5	2UEA002111	3	Current Transducer	
2.6	2UEA001470	2	DC Link Resistor	
2.7	2UEA001463	3	IFU Capacitor	
2.8	2UEA000138	1	Charging Transformer	
2.9	2UEA003164	1	IFU Inductor Stack	

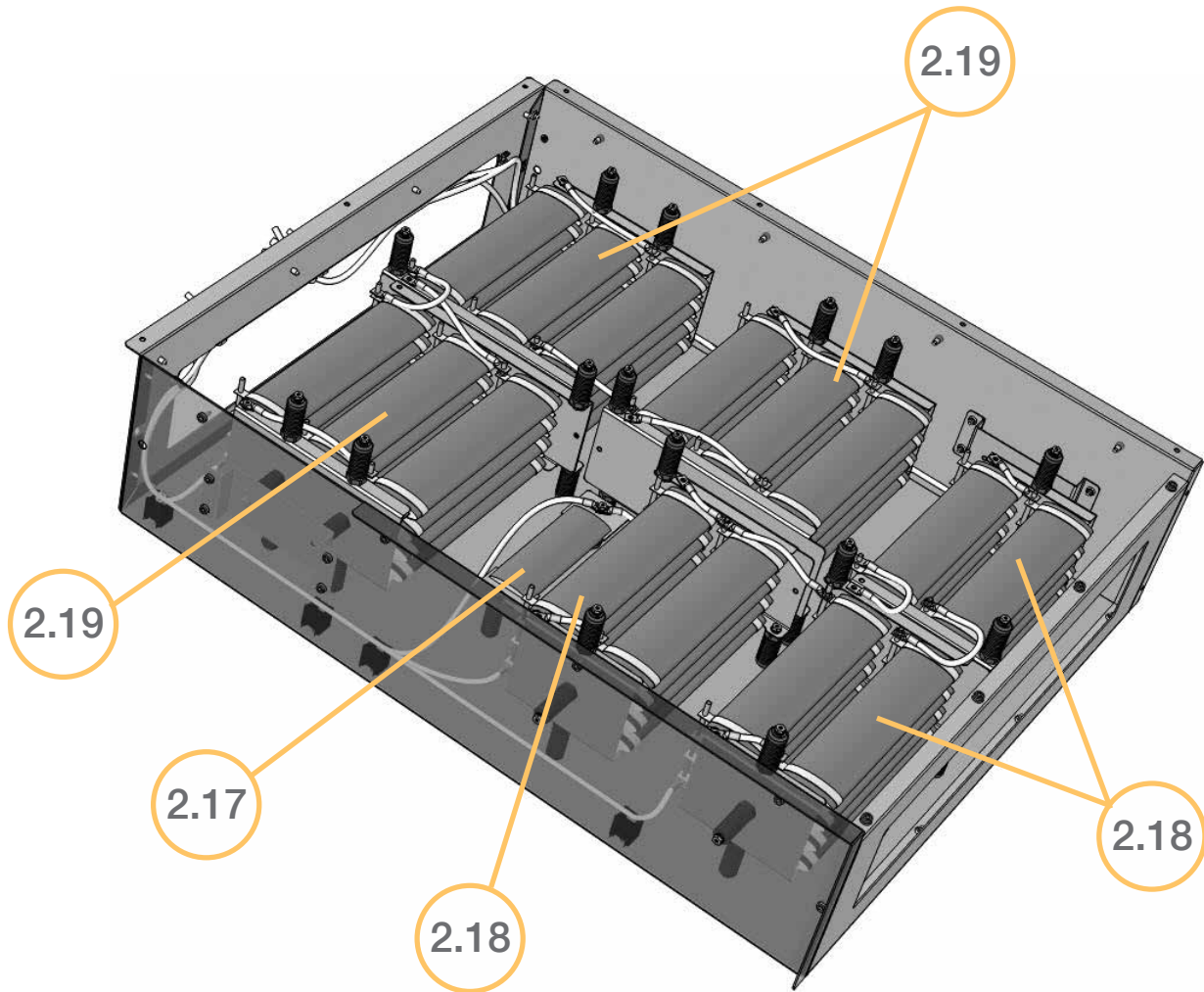
IFU Section Filter Assembly



Picture 18: IFU Filter Assembly

Item	Part number	Cabinet Qty	Description	Notes
2.10	3BHB020698R0010	1	NP Grounding Capacitor	
2.11	3BHB024326R0001	1	Filter Assembly	
2.12	3BHE020959R0127	1	IGBT Power Supply Board	
2.13	2UEA000967	1	High Voltage Relay	
2.14	3BHE005555R0101	1	Sync Board	
2.15	3BHE032285R0102	1	High Voltage Divider (HVD) Board	
2.16	3BHE006373R0101	1	Optical Electrical Interface (OEI) Board	

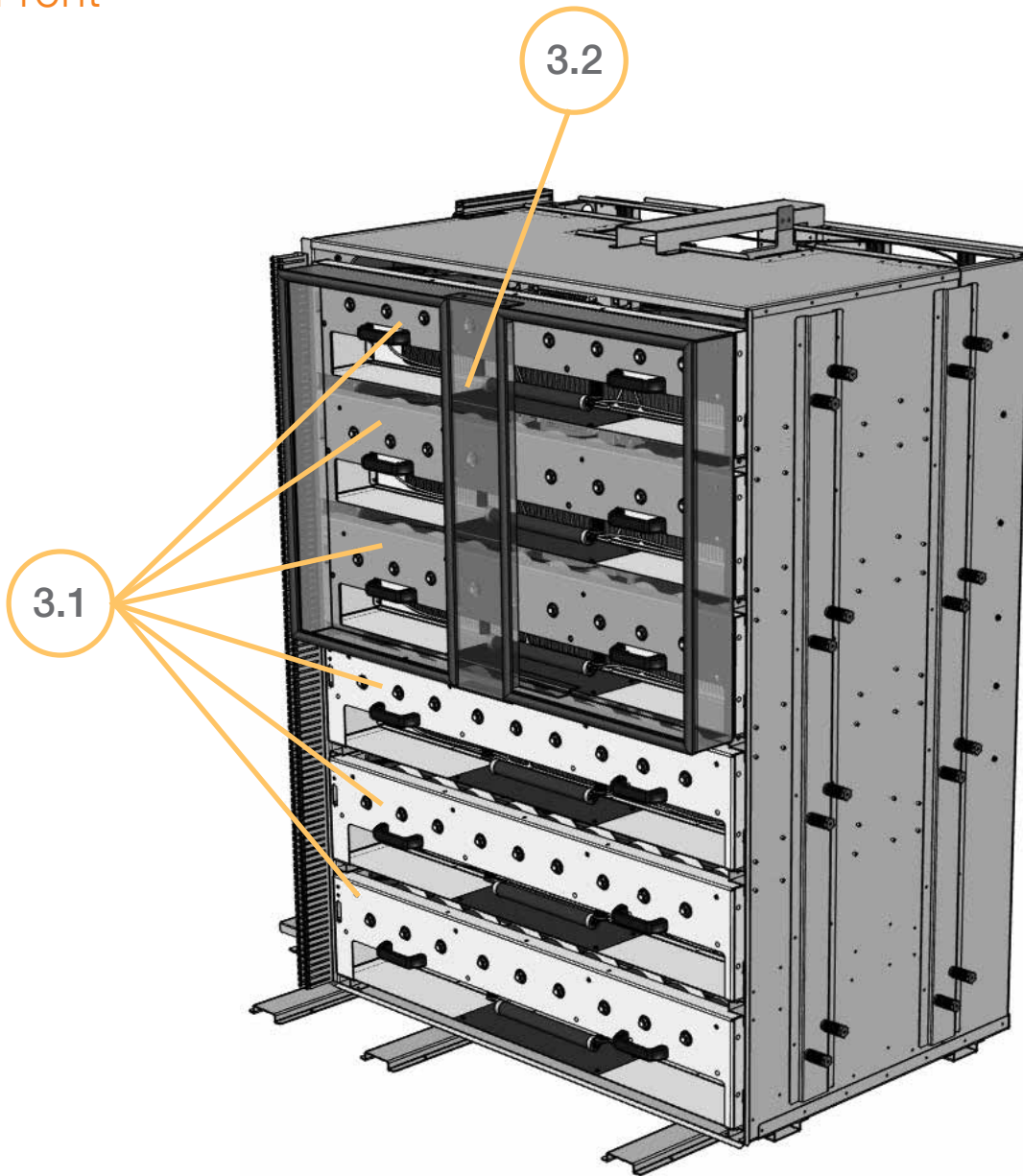
IFU Section Resistor Box Assembly



Picture 19: Resistor Assembly - view from the top

Item	Part number	Cabinet Qty	Description	Notes
2.17	2UEA001407	1	Common Mode Resistor	
2.18	2UEA001467	3	IFU Resistor	
2.19	2UEA001472	3	EMC Filter Resistor	

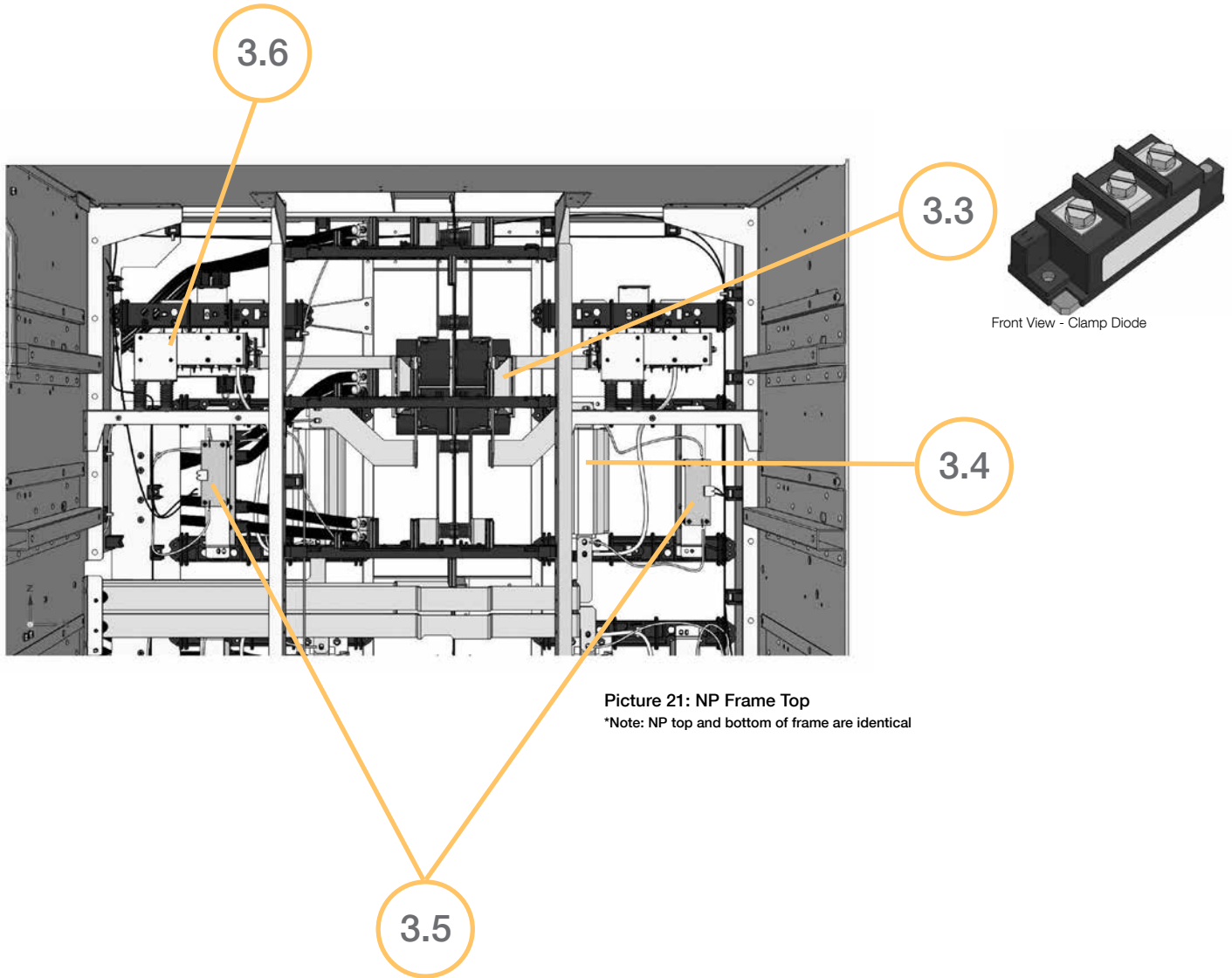
Phase Module Section Front



Picture 20: Front view of phase module cabinet

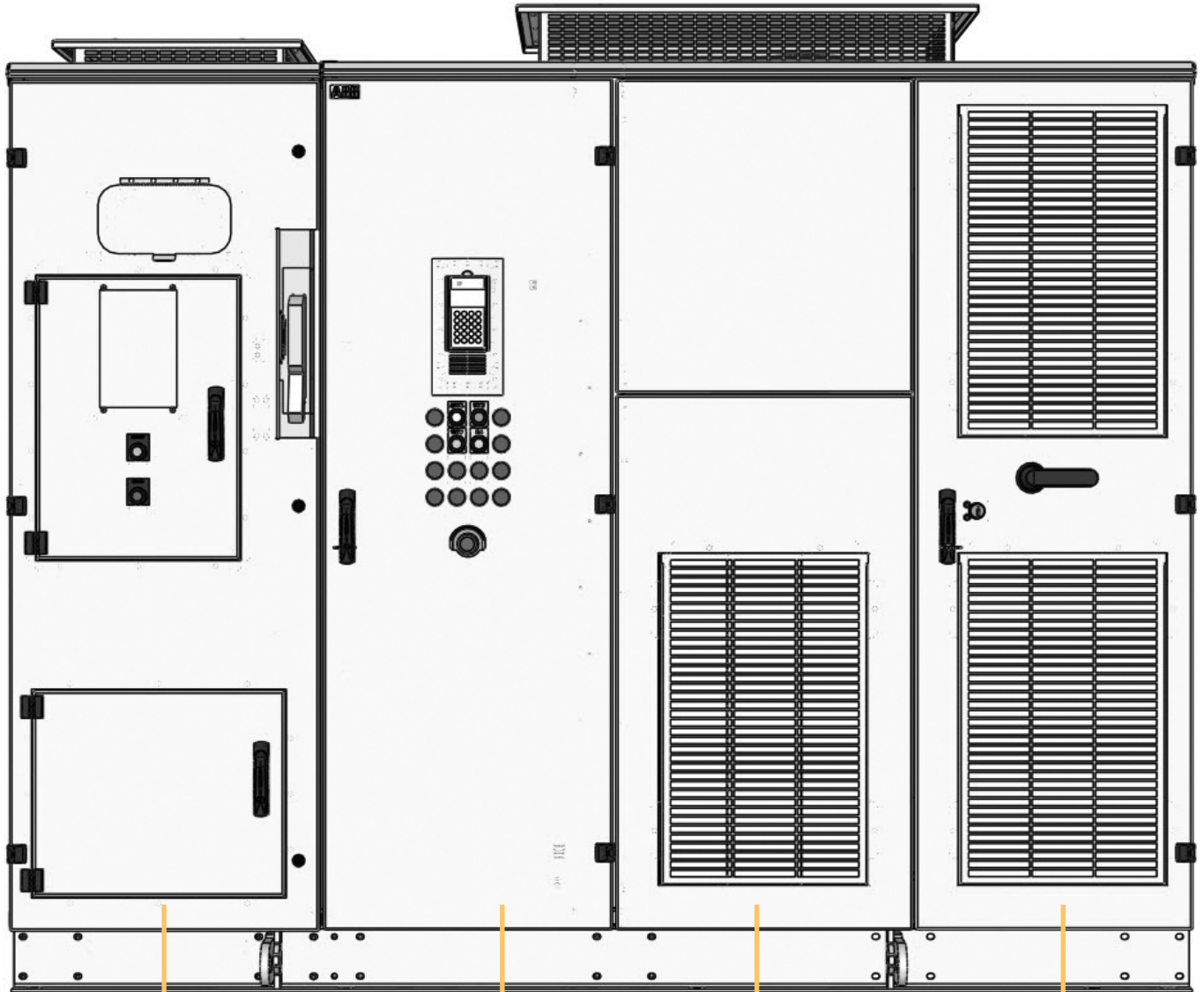
Item	Part number	Cabinet Qty	Description	Notes
3.1	2UEA003021		Phase Module Kit	Kit includes 1 phase module and 1 removal tool
3.2	2UEA003189	2	Phase Module Plenum	

Phase Module Section NP Top Frame



Item	Part number	Cabinet Qty	Description	Notes
3.3	2UEA000911	12	Clamp Diode	
3.4	2UEA002974	4	Clamp Inductor	
3.5	3BHE009017R0102	4	Voltage Level Short Circuit Detection (VLSCD) Board	
3.6	2UEA001469	4	Clamp Resistor Assembly	

Integral Disconnect Enclosure Section



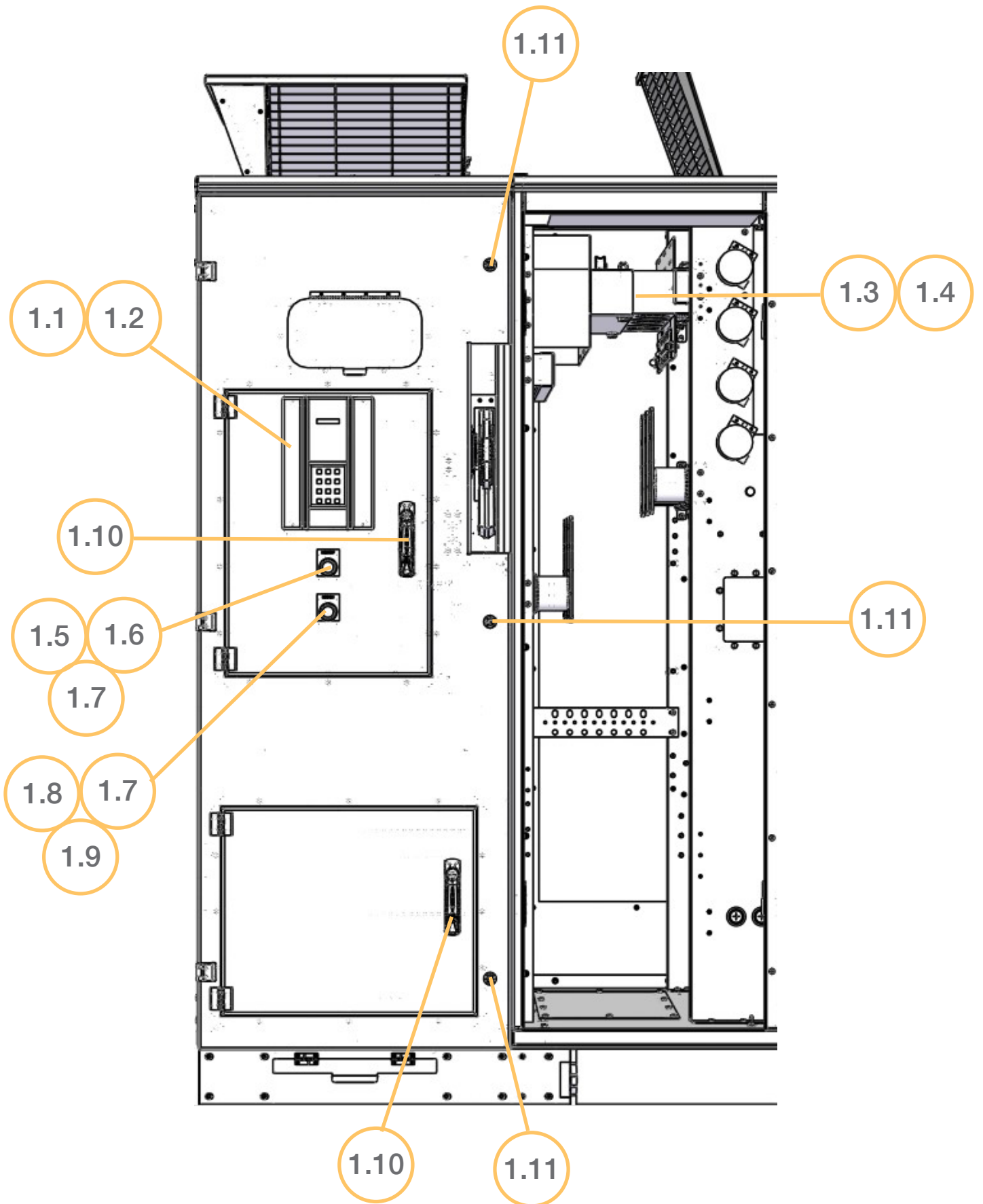
Integral
Disconnect

Incoming / Control
Section

IFU Section

Phase Module
Section

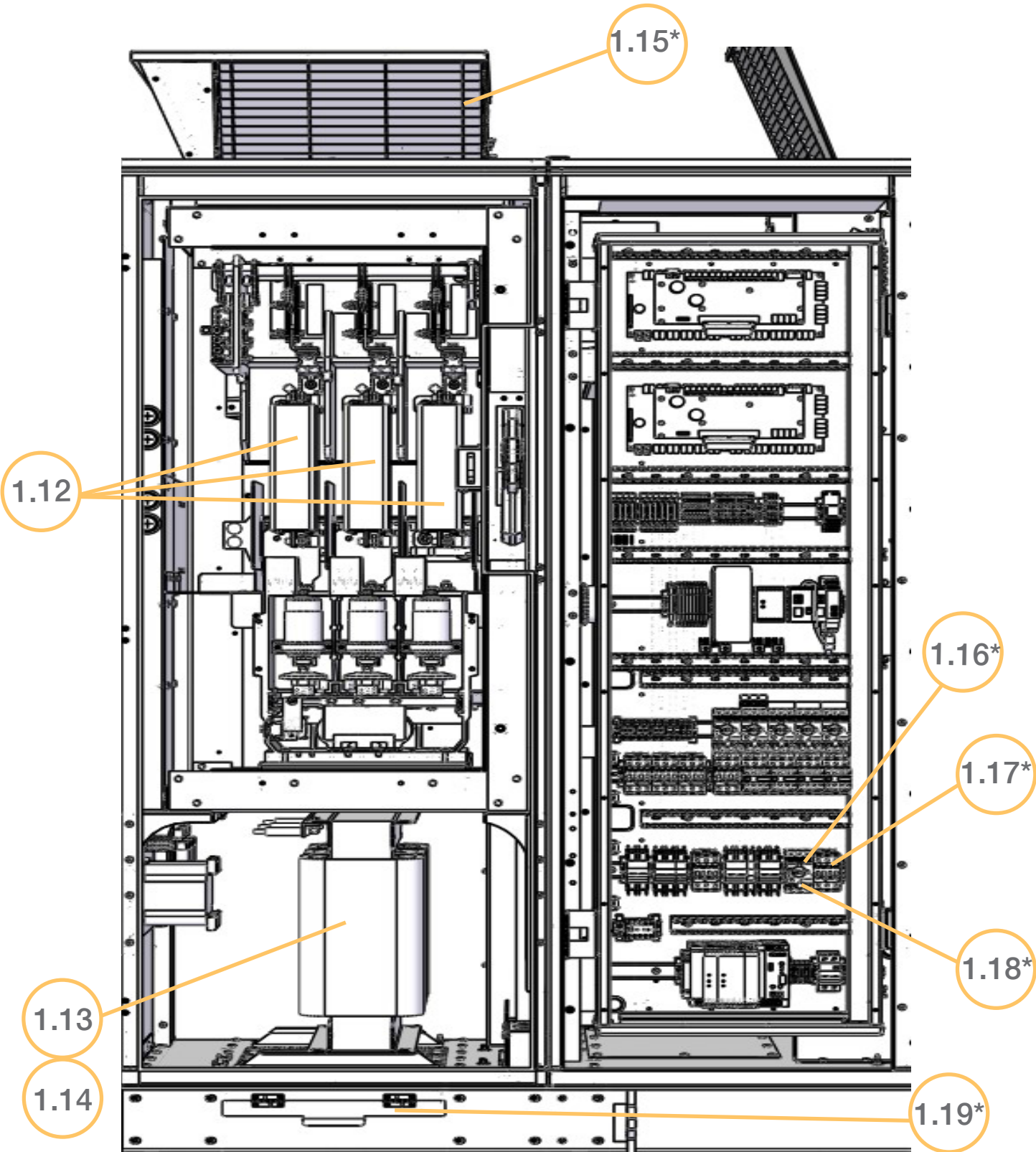
Integral Disconnect



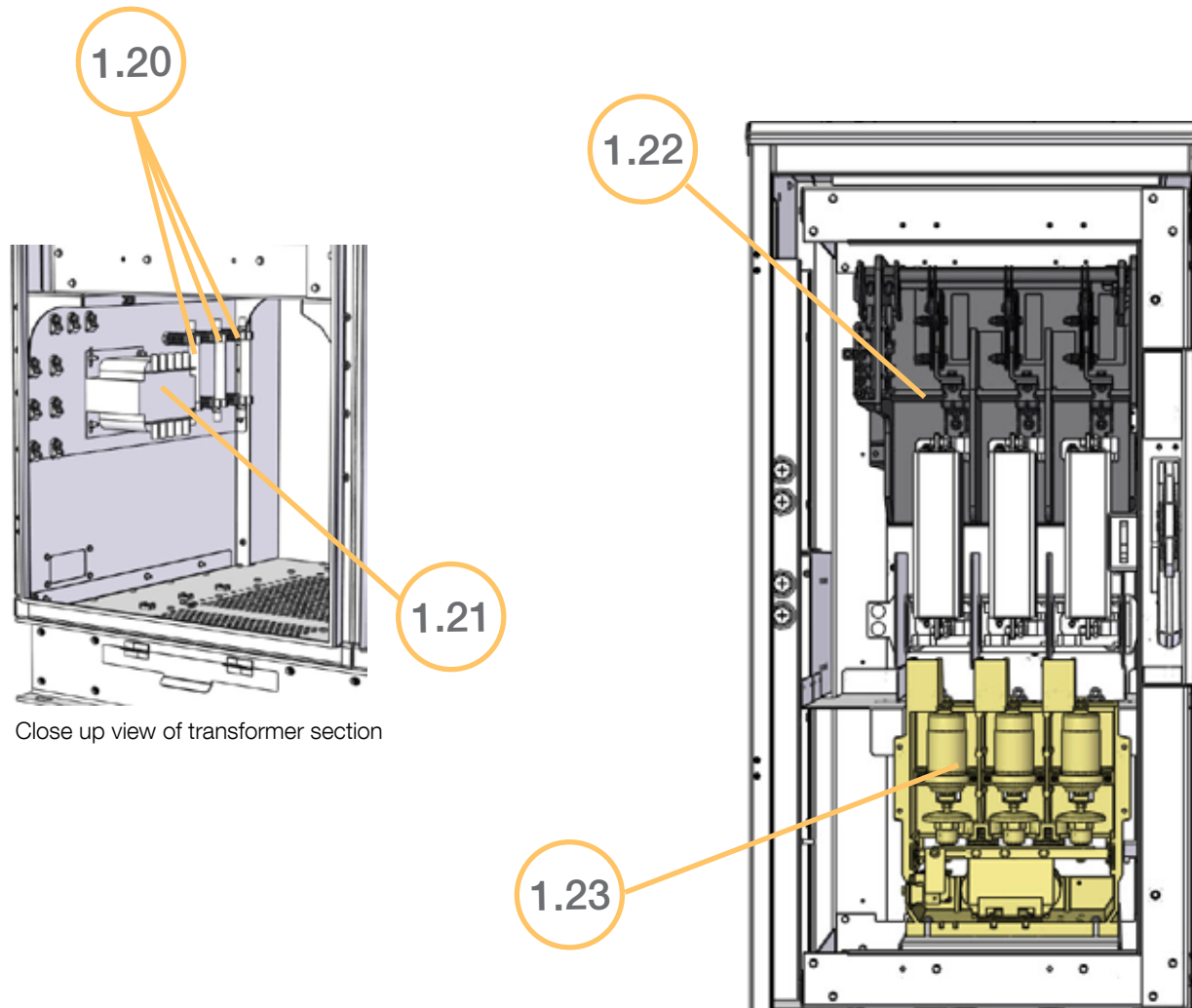
Integral Disconnect

Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA001919	1	Motor Management Relay	
1.2	2UEA003092	1	Motor Management Relay	
1.3	2UEA001894	3	Current Transducer	
1.4	2UEA003040	3	Current Transducer	
1.5	2UEA002665	1	LED, Green	
1.6	2UEA001520	1	Operator, Green	
1.7	2UEA000959	1	Lamp block w/ holder kit	
1.8	2UEA002666	1	LED, Red	
1.9	2UEA000956	1	Operator, Red	
1.10	2UEA002152	2	LVD Lock	
1.11	2UEA002207	3	MV Door Lock	

Integral Disconnect



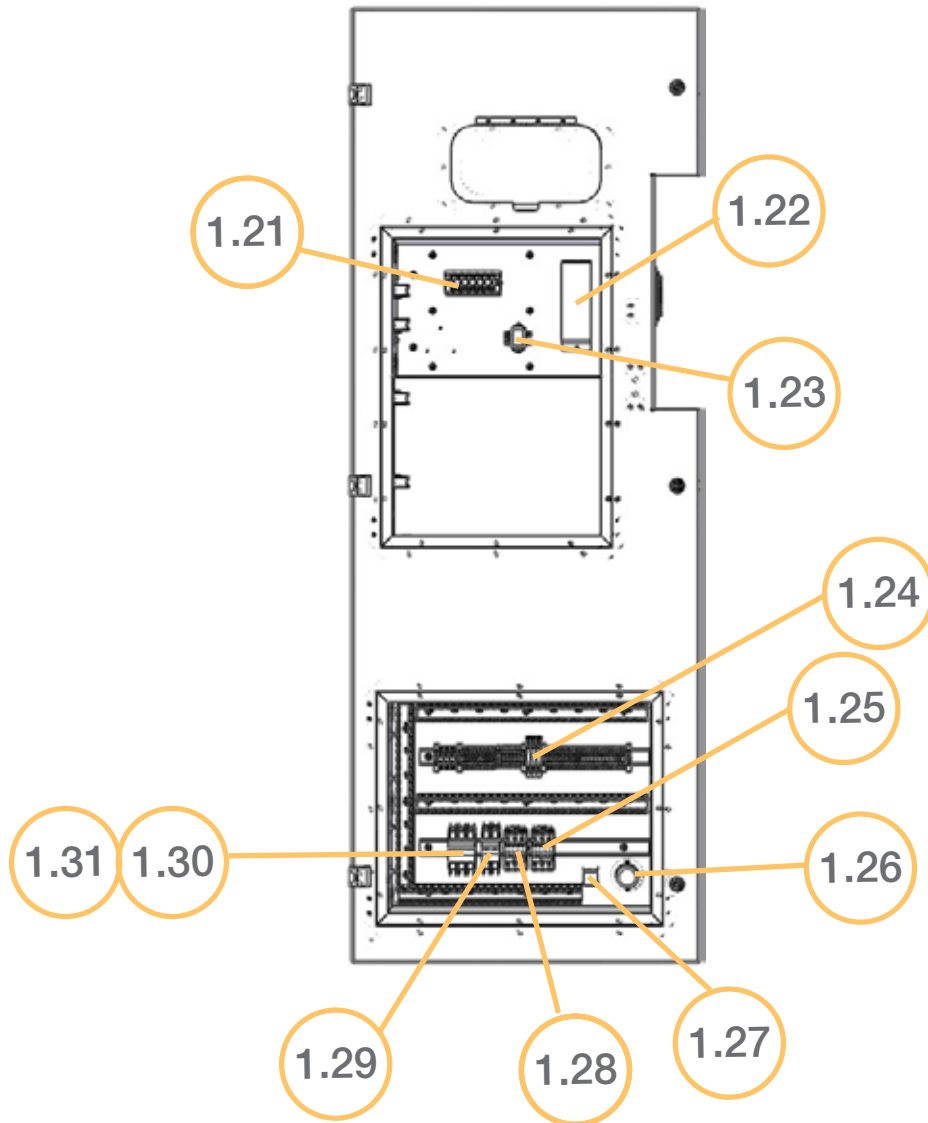
Integral Disconnect



Close up view of transformer section

Item	Part number	Cabinet Qty	Description	Notes
1.12	2UEA001267	3	Fuse, 80A	
1.12	2UEA001268	3-6	Fuse, 140A	
1.12	2UEA002203	6	Fuse, 160A	
1.12	2UEA000093	3	Fuse, 200A	
1.12	2UEA001947	3	Fuse, 230A	
1.13	2UEA001899	1	Transformer	
1.14	2UEA001900	1	Transformer	
1.15	2UEA003503	1	Fan	* Frame 3 component only
1.16	2UEA001449	1	Manual Starter, 6.3A	* Frame 3 component only
1.17	2UEA001453	1	Aux. Contact	* Frame 3 component only
1.18	2UEA002193	1	Contact, 4 Pole, 21A	* Frame 3 component only
1.19	2UEA003461	1	Filter	* Frame 3 component only
1.20	2UEA002431	3	Fuses	
1.21	2UEA002611	1	Transformer	
1.22	2UEA003571	1	Isolation Switch	Long lead item: Consult factory for availability
1.23	2UEA003572	1	MV Contactor Assembly	Long lead item: Consult factory for availability

Integral Disconnect



Item	Part number	Cabinet Qty	Description	Notes
1.21	2UEA001920	1	Terminal Block	
1.22	2UEA003570	1	Intellivac	Long lead item: Consult factory for availability
1.23	2UEA002037	1	EMI Filter	
1.24	2UEA001927	3	Fuses	
1.25	2UEA002103	1	Control Relay	
1.26	2UEA001932	1	Test Power Plug	
1.27	2UEA002620	1	Cam Switch	
1.28	2UEA002619	1	Control Relay	
1.29	2UEA002192	1	Circuit Breaker	
1.30	2UEA002156	1	Circuit Breaker	
1.31	2UEA003039	1	Circuit Breaker	

Technical Notes

Note 1 - Frame 2: Replacement of inrestors

ABB part number 2UEA003150 has replaced part number 3BHB024327R0001. This has also changed the inrestor configuration from a quantity four (4) inrestors to a quantity of two (2). **Please note:** If your drive currently utilizes part 3BHB024327R0001 and one of the inrestors fails, all (4) inrestors will need to be removed and replaced with two (2) part number 2UEA003150 inrestors.

Note 2 - Frame 3: Clamp inductors

2UEA003213 is the new ABB part number for the clamp inductors used in all Frame 3 units going forward.

EXCEPTION: ABB part number 2UEA002974 will be used in units registered with any of the following serial numbers:

2131402054, 2131400989, 2131703324, 2131800104, 2132001102, 2132100102, 2132202416, 2132303473, 2132400343, 2132503681, 2133001095, 2133104388, 2133301488, 2134902217, 2140603274, 2140604672.

Notes:

Notes:

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