



ABB Medium Voltage Drives ACS 2000 4kV Frames 1 & 2 Spare Parts Catalog

ACS 2000 Drive Manuals

General Manuals

ACS 2000 User's Manual

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

ACS 2000 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
- Signal and Parameter Table
- Troubleshooting Guide
- DriveMonitor™ Manual

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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				 4GZ9		Compliant to IEC 60146-1-1			
Type Code:		ACS 2040-1L-AN1-a-0R+FAME0+FDPL05							
Rated input voltage		4160	V	Rated aux. voltage		480	V	BIL	60kV
Rated input current		108	A	Rated aux. current		7.0	A	Load type	Asynchronous Motor
Rated input frequency		50 / 60	Hz	Rated control		N/A	V		
Max. permissible short-circuit current		45	kA	Rated control		N/A	A	Output HP @ rated load (ND/HD)	800/587
				Cooling / ambient		FA / max. 104°F			
Rated output voltage		0 ... 4160	V	Enclosure class		TYPE 1 (IP21)		Output kW @ rated load (ND/HD)	597/438
Rated output current (ND/HD)		108/79	A	Weight		5600	lbs		
Rated output frequency		60	Hz	Altitude		6500	feet	Year of Manufacture	2011
Output frequency range		0 .. 75	Hz						
Duty class (ND)		Normal Duty (110% overload (1 min. every 10 min.))		ABB Serial No.		1112400285		Country of manufacture	USA of foreign parts
Duty class (HD)		Heavy Duty (150% overload (1 min. every 10 min.))		MOR Serial No.		2UEA902000077			

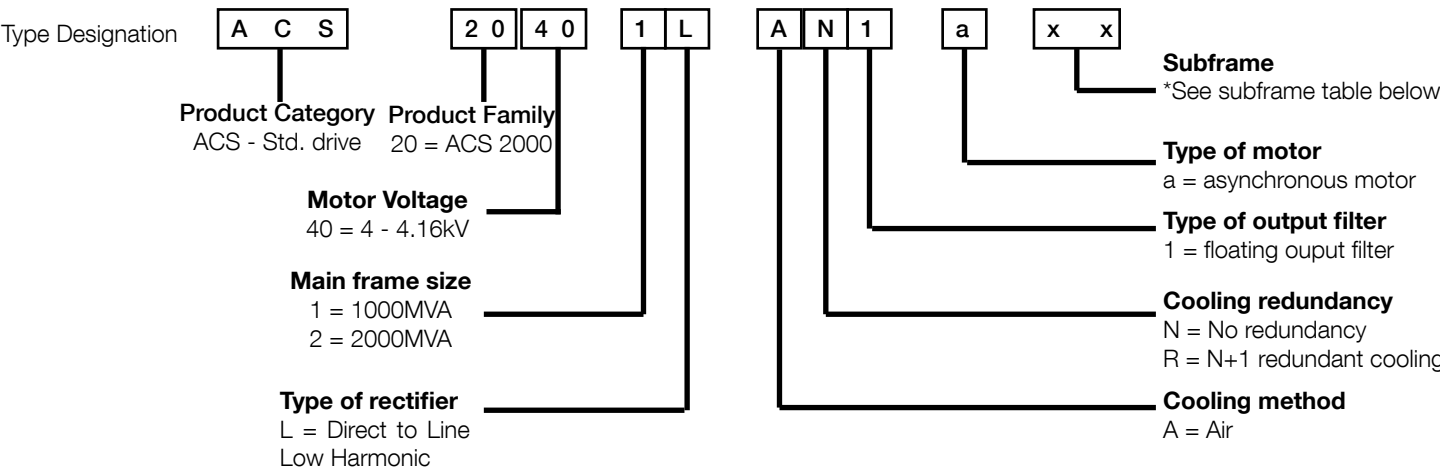
The ACS 2000 is currently available in two frame sizes. Frame 1 is available beginning at 300HP and ranges up to 1000HP, while Frame 2 is available beginning at 1250HP and ranges up to 2000HP.

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

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

Drive Identification

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



*ACS 2000 Subframe Table

Type	Maximum shaft power (no overload) [hp] 4kV main frames	
Subframe Code	1 (1 MVA)	2 (2 MVA)
0 C	330	
0 D	385	
0 E	440	
0 F	495	
0 H	550	
0 L	660	
0 Q	770	
0 R	880	
0 T	990	
0 V	1100	
0 Z		1375
1 C		1650
1 F		1925
1 H		2200

ACS 2000 4kV spare parts

Master list

Category	ACS 2000 4KV Part	Type	Description	F1	F2	Page
Power electronics						
Semiconductors						
	2UEA001141	Phase Module	Phase Module Frame 1	x		19
	2UEA002083	Phase Module	Phase Module Frame 2		x	34
	2UEA001345	Phase Module Kit	Phase Module with Removal Tool	x		
	2UEA002570	Phase Module Kit	Phase Module with Removal Tool		x	
	2UEA001168	Crowbar Assembly	Crowbar Assembly	x		20
	2UAE002082	Crowbar Stack Asm	Crowbar Assembly		x	28
	2UEA000911	Diode Clamp	Diode Clamp	x	x	20, 32
Resistors						
	2UEA000893	Resistor, DC Link	Symmetry Resistor	x		20
	2UEA001348	Resistor, DC Link	Symmetry Resistor		x	28
	2UEA000993	Resistor, IFU	IFU Resistor	x		17
	2UEA001350	Resistor, IFU	IFU Resistor		x	31
	2UEA000711	Resistor, CM Filter	Resistor, CM Filter	x		17
	2UEA001407	Resistor, CM Filter	Resistor, CM Filter		x	27
	2UEA000004	Resistor, EMC Filter	EMC Resistor	x		17
	2UEA001505	Resistor, EMC Filter	EMC Resistor		x	31
	2UEA000645	IFU Resistor Box	IFU Resistor Box	x		17
	2UEA002379	IFU Resistor Box	IFU Resistor Box		x	27, 30, 31
	2UEA000360	Resistor, Clamp	Clamp Resistor	x	x	20, 32
	3BHB024326R0001	Filter assembly	Filter	x	x	17, 29
Capacitors						
	2UEA000005	Capacitor, EMC Filter	EMC Capacitor	x		17
	2UEA001404	Capacitor, EMC Filter	EMC Capacitor		x	30
	2UEA000358	Capacitor, DC Link	DC Link	x		19
	2UEA001406	Capacitor, DC Link	DC Link		x	28
	2UEA000357	Capacitor, Clamp	Clamp	x		20
	2UEA0001405	Capacitor, Clamp	Clamp		x	32
	2UEA000992	IFU Capacitor	IFU Capacitor	x		17
	2UEA001352	IFU Capacitor	IFU Capacitor		x	29, 30
	3BHB020698R0010	NP Grounding Capacitor	Grounding Capacitor	x	x	17, 29
Inductors						
	2UEA001473	Inductor, Stack	Inductor Stack (SN>2121100004)	x		18
	2UEA002918	Inductor, Stack	Inductor Stack (SN<2121100004)	x		
	2UEA000886	Inductor, EMC Filter	EMC Filter	x		18
	2UEA001351	Inductor, EMC Filter	EMC Filter		x	30
	2UEA000883	Inductor, Clamp	Clamp Inductor	x		20
	2UEA001403	Inductor, Clamp	Clamp Inductor		x	32
	3BHB024327R0001	Inrestor	Inrestor	x	x	18, 28
Charging unit						
	2UEA000967	High Voltage Relay	High Voltage Relay	x	x	17, 29
	2UEA000138	Charging transformer 400/460V, 4200V	Charging Transformer	x	x	17, 30
Circuit Protection						
	2UEA001267	Fuse 80 Amp	Fuse (300 - 400 HP)	x		12
	2UEA001268	Fuse 140 Amp	Fuse (450 - 700 HP)	x	x	12, 23
	2UEA002203	Fuse, 160A	Power Fuse - 1550-1750hp		x	23

ACS 2000 4kV spare parts list

Master list

Category	ACS 2000 4KV Part	Type	Description	F1	F2	Page
	2UEA000093	Fuse 200 A	Fuse (800 - 1000 HP)	x	x	12, 23
	2UEA000149	Surge Arrestor	Surge Arrestor	x	x	12, 23
Control electronics						
Printed circuit boards						
	3BHE024577R0101	PP C907 BE; AMC 34 - PCB Varnished	Application and Motor Control	x	x	15, 26
	3BHE024855R0101	UF C921 A101: INT-2 Board Varnished	Interface board	x	x	15, 26
	3BHE024747R0101	Crowbar Drive	Crowbar Drives	x	x	20, 28
	3BHE032285R0102	HVD Board Varnished.	High voltage Divider	x	x	17, 29
	3BHE009017R0102	VLSCD-Board, Coated, Type XV C724 BE	Short Circuit Detection	x	x	20, 32
	3BHE005555R0101	LD SYN-01	Sync Board	x	x	17, 29
	3BHE020959R0127	IPS Single Voltage 27V	IGBT Power Supply	x	x	17, 29
	3BHE006373R0101	OEI-Board	Optical Electrical Interface	x	x	17, 29
I/Os						
	3BHB003041R0101	IOEC IO	IO Module	x	x	15, 26
	2UEA000843	IOEC Connector-3 Position	IO Module	x	x	15, 26
	2UEA000861	IOEC Connector-7 Position	IO Module	x	x	15, 26
	2UEA000845	IOEC Connector-10 Position	IO Module	x	x	15, 26
Transducers						
	2UEA000988	Current Transducer	LEM CT	x		17
	2UEA001456	Current Transducer	LEM CT		x	27
Power supplies						
	2UEA001288	Power Supply	Main Power Supply , 24VDC 120/240AC (+SPC01)	x		
	2UEA002709	Power Supply	Main Power Supply , 24VDC 120/240AC (+SPC01)		x	
	2UEA000762	Transformer	Cont. Voltage Transformer (+AUX40, +AUX60)	x		
	2UEA002169	Transformer	Cont. Voltage Transformer (+AUX40, +AUX60)		x	
	2UEA000936	20A 3 Phase Buffer Module	Power Supply Buffer	x	x	15, 26
	3BHE032593R0002	IPS Power Supply	IGBT Power Supply	x	x	17, 28
	2UEA002224	Power Supply	+24VDC Main Power Supply, 40A 480AC	x	x	26
	2UEA001960	UPS Battery	UPS Battery 24VDC (+CPR02)	x	x	
	2UEA001961	Main UPS	Main UPS 24VDC (+CPR02)	x	x	
User interface						
	2UEA000987	Control Panel, CDP312R	Control Panel, CDP312R	x	x	13, 24
	3BHL000764P0001	Control Panel	Control Panel Interface, NDPI-02	x	x	13, 24
	2UEA000986	Control Panel	Keypad Frame	x	x	13, 24
	2UEA000570	Connector	CDP312 Connector plug	x	x	13, 24
	2UEA000572	Y-Connector, RJ12	Control Panel	x	x	13, 24
	2UEA000950	Operator pushbutton, white	Push Button, White 30MM	x	x	13, 24
	2UEA000958	Contact and lamp block with holder kit	Adapter	x	x	13, 24
	2UEA000962	LED, white	Led	x	x	13, 24
	2UEA000951	Operator pushbutton, green	Push Button, Green 30MM	x	x	13, 24
	2UEA000963	LED, green	Led	x	x	13, 24
	2UEA000952	Operator, yellow	Push Button, Yellow 30MM	x	x	13, 24
	2UEA000959	lamp block with holder kit	Adapter	x	x	13, 24
	2UEA000964	LED, yellow	Led	x	x	13, 24
	2UEA000953	Operator, blue	Push Button, Blue 30MM	x	x	13, 24

ACS 2000 4kV spare parts

Master list

Category	ACS 2000 4KV Part	Type	Description	F1	F2	Page
	2UEA000965	LED, blue	Led	x	x	13, 24
	2UEA000956	Operator, Red	Lens, Red 30MM (+FDPL05)	x	x	
	2UEA000966	LED, Red	LED, red (+FDPL05)	x	x	
	2UEA000957	Potentiometer	Operator Potentiometer (+FDSP01)	x	x	
	2UEA000961	Adaptor	Potentiometer Contact Block (+FDSP01)	x	x	
	2UEA000954	Switch	Switch Contact Block (+FDSP01)	x	x	
	2UEA000960	Adaptor	Switch Contact Block (+FDSS01, +FDSS02)	x	x	
	2UEA000131	Emergency Stop	Emergency Stop Protective Collar	x	x	13, 24
	2UEA000130	Emergency Stop	Emergency Stop Pushbutton	x	x	13, 24
	2UEA000126	Emergency Stop	Contact Block Holder	x	x	
	2UEA0001312	Emergency Stop	Contact Block	x	x	13, 24
Electrical general						
	2UEA000761	Fuse, 4A	Fuse X03	x	x	15, 26
	2UEA001336	Circuit Breaker, 2 Pole 10A 480V	Circuit Breaker, 2 Pole 10A 480V	x	x	15, 26
	2UEA000791	Circuit Breaker, 3 Pole 4A 480V	Circuit Breaker, 3 Pole 4A 480V	x	x	15, 26
	2UEA002101	Circuit Breaker, IPS Supply	Circuit Breaker, 2 Pole 20A 24VDC	x	x	26
	2UEA001289	Circuit Breaker	Main Power Supply Breaker 120V/240V (+SPC01)	x	x	
	2UEA002192	Circuit Breaker	Motor Heater Circuit Breaker 6A (+MPH01)	x	x	
	2UEA001978	Aux Contact	Motor Heater Aux contact(+MPH01)	x	x	
	2UEA002193	Relay, Motor Heater	Motor Heater Relay (+MPH01)	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	15, 26
	2UEA001449	Manual Starter, Fan	Manual Fan Starter, 6.3A	x	x	15, 26
	2UEA001450	Contact, Fan	Fan Contactor 21A	x	x	15, 26
	2UEA001453	Fan Aux Contact	Fan Aux Contact	x	x	15, 26
	2UEA000790	Circuit Breaker	Cabinet Heater Circuit Breaker 8A (+SHT01)	x	x	
	2UEA002194	Aux Contact	Cabinet Heater CB Aux contact (+SHT01, +SHT01)	x	x	
	2UEA001562	Circuit Breaker	Cabinet Heater Circuit Breaker 4A (+SHT02)	x	x	
	2UEA001556	Cabinet Heater	230V Cabinet Heater (+SHT01, +SHT02)	x	x	
	2UEA001301	Cabinet Heater	110V Cabinet Heater (+SHT01, +SHT02)	x	x	
	2UEA001292	RTD Power Block	PT100 Power Block (+TSM05, +TSM08)	x	x	
	2UEA001293	RTD Bridge Block	PT100 Power Block (+TSM05, +TSM08)	x	x	
	2UEA000846	RTD transmitter	RTD transmitter (+TSM05, +TSM08)	x	x	
	2UEA001338	RTD Plug	RTD Plug	x	x	
	2UEA001138	RTD Socket	RTD Socket	x	x	
	2UEA000630	Terminal Block	Terminal Block X03, X04, X09, X10 and X11	x	x	15, 26
	2UEA000632	Terminal Block	Terminal Block	x	x	15, 26
	2UEA000633	Terminal Block, Fuse Clip	Terminal Block X03	x	x	15, 26
	2UEA000772	Terminal Block	Terminal Block X01 and X02	x	x	26
	2UEA000773	Terminal Block	Terminal Block	x		
	2UEA001451	Terminal Block	Terminal Block	x	x	15
	2UEA000145	Terminal Block	Terminal Block, Earthing	x	x	15

ACS 2000 4kV spare parts list

Master List

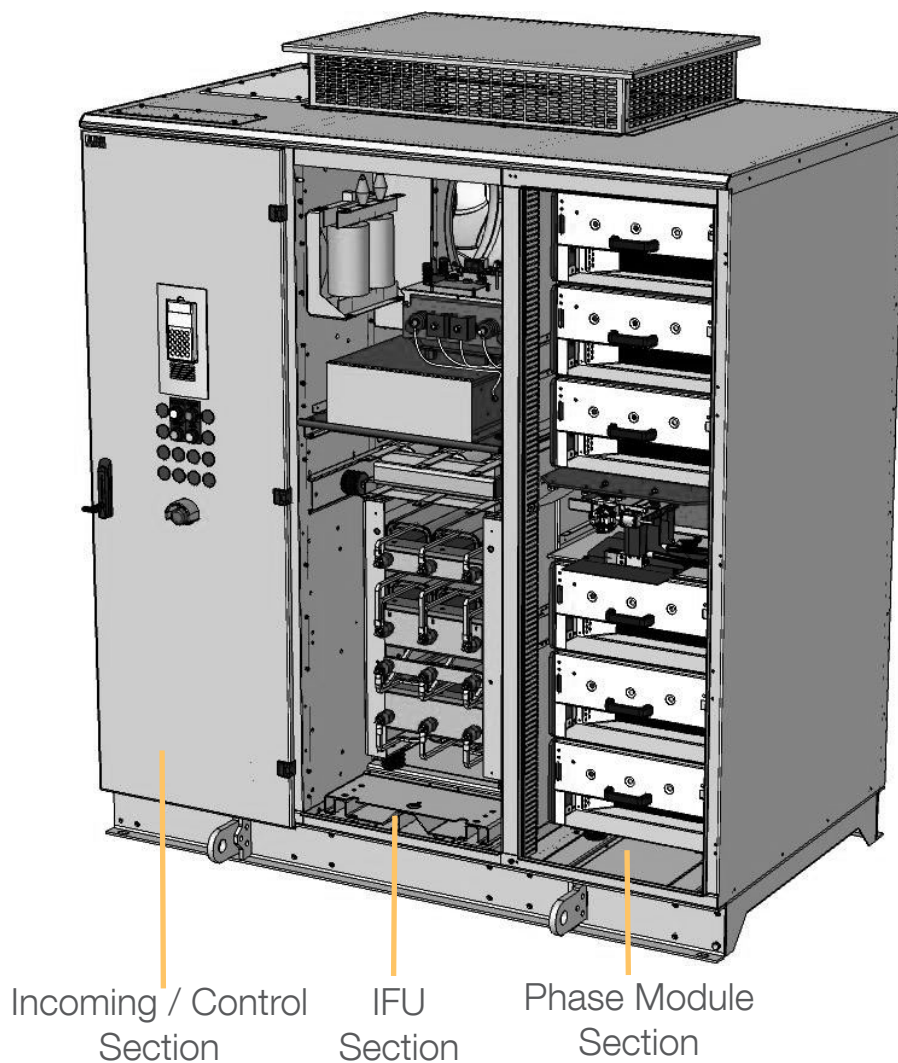
Category	ACS 2000 4KV Part	Type	Description	F1	F2	Page
	2UEA000142	Terminal Block	Terminal Block, Earthing	x	x	
	2UEA000651	64 Conductor Ribbon Cable	Ribbon Cable	x	x	15, 26
Miscellaneous						
Mechanics						
	2UEA000463	Handle For Grounding Switch	Grounding Switch	x	x	21
	3BHB021516R0001	Grounding Switch	Grounding Switch	x	x	19, 27
	2UEA001078	Pressure Switch	Pressure Switch	x	x	21
	2UEA001051	Cooling Fan	Cooling fan	x	x	17, 30
	2UEA001026	Filter	Converter Door Filter	x		21
	2UEA001042	Filter	IFU Section Door Filter	x		21
	2UEA001704	Filter	Converter Door Filter		x	
	2UEA001694	Filter	IFU Section Door Filter		x	
	2UEA001629	Door Hinge	Door Hinge	x	x	13, 24
	2UEA001135	Door Hinge	Door Hinge	x		
	2UEA001303	Air Plenum	Phase Module Plenum	x		
	2UEA001770	Air Plenum	Phase Module Plenum		x	34
	2UEA001362	Phase Module Exchange Tool	Phase Module Exchange Tool	x		21
	2UEA002275	Phase Module Exchange Tool	Phase Module Exchange Tool		x	
	2UEA002371	Phase Module Lift Hoist	Phase Module Lift Hoist		x	
	2UEA002535	Hoist Frame	Hoist Frame		x	
	2UEA002151	Hoist Bracket	Hoist Bracket		x	
	3BHB026563R0001	Phase Module Contact	Phase Module Contact Receptacle	x		
	2UEA001800	Phase Module Contact	Phase Module Contact Receptacle		x	
	2UEA002175	Key	Low Voltage Controls Door Key	x	x	
	2UEA002174	Key	Phase Module Door Key	x	x	
Drive Options						
	2UEA000983	Modbus Module	Modbus Module NMBA-01 (+FAMM0)	x	x	
	2UEA001290	Controlnet Module	Controlnet Module (+FAMAC)	x	x	
	2UEA001065	Device Net Module	Device Net Module (+FAMAD)	x	x	
	2UEA001063	Ethernet Module	Ethernet Module NETA-01 (+FAME0)	x	x	
	2UEA001064	Ethernet Adaptor Module	Ethernet IP Adaptor Module (+FAMAE)	x	x	
	2UEA001291	NPBA-12 Module	Profibus NPBA-12 Module (+FAMP0)	x	x	
	58976008	Speed Measurement	Speed Measurement NTAC-02 (+ENC50)	x	x	
	3BHB0290257R0001	Drive Monitor	Drive Monitor 3000 (+DMN01)	x	x	

Frame 1 overview

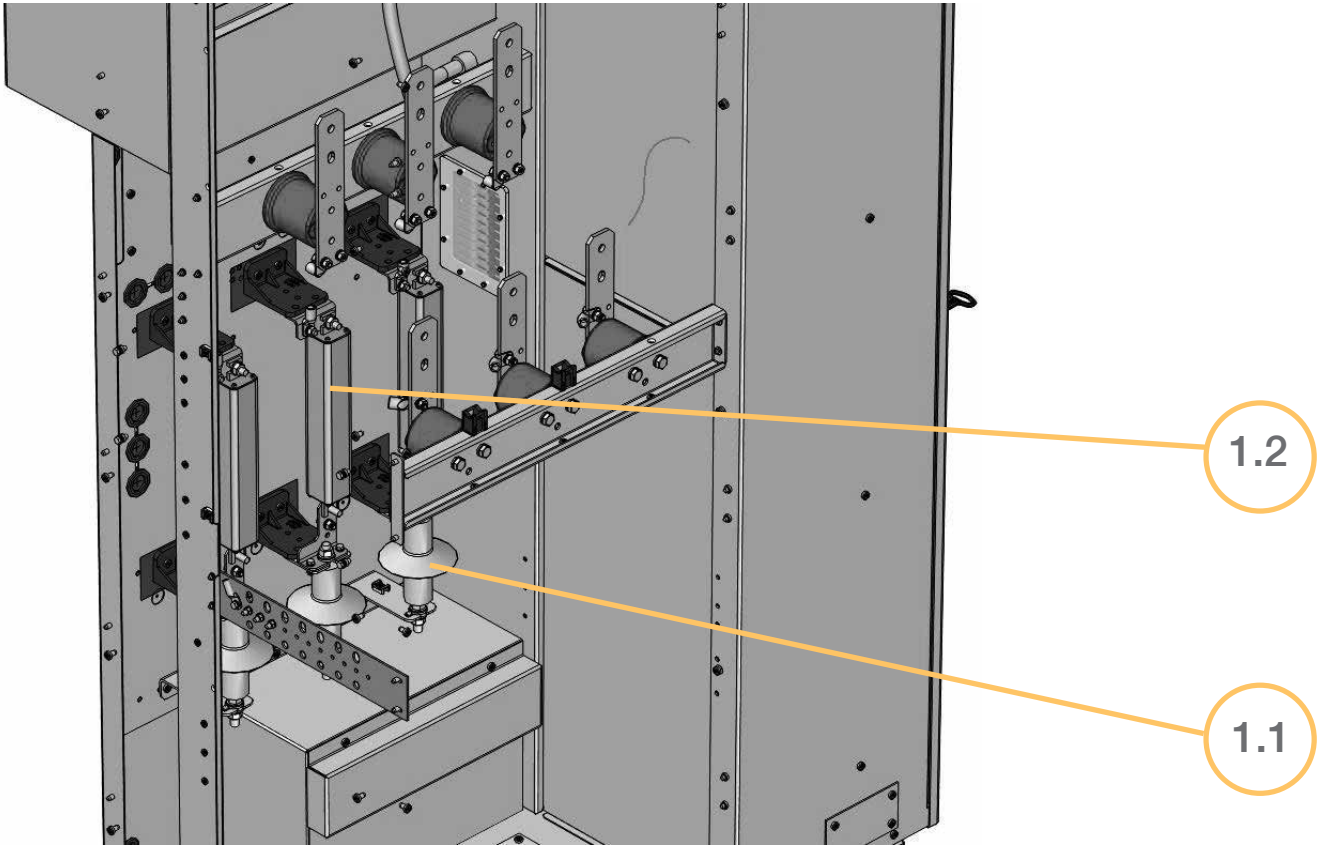
The ACS 2000 4KV has three sections, The Incoming/Control section, the input filter (IFU) section and the Phase Module section. This manual is divided, by frame size, into those sections showing the spare parts in each section.

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.

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.



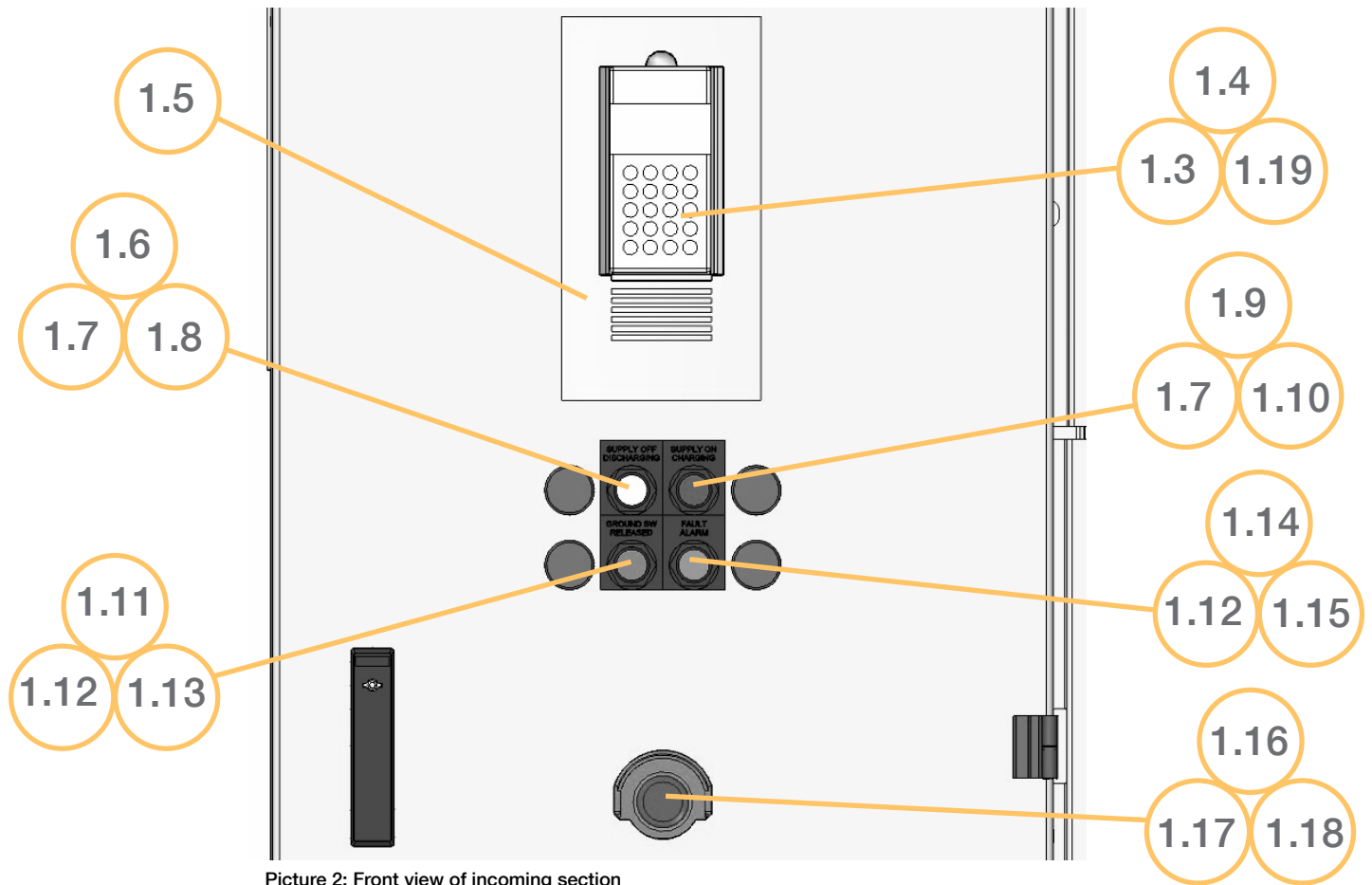
Incoming/Control Section



Picture 1: View from back of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.1	2UEA000149	3	Surge Arrestor	
1.2	2UEA001267	3	Fuse, 80 Amp	300-400 HP
1.2	2UEA001268	3	Fuse, 140 Amp	450-700 HP
1.2	2UEA000093	3	Fuse, 200 Amp	800-1000 HP

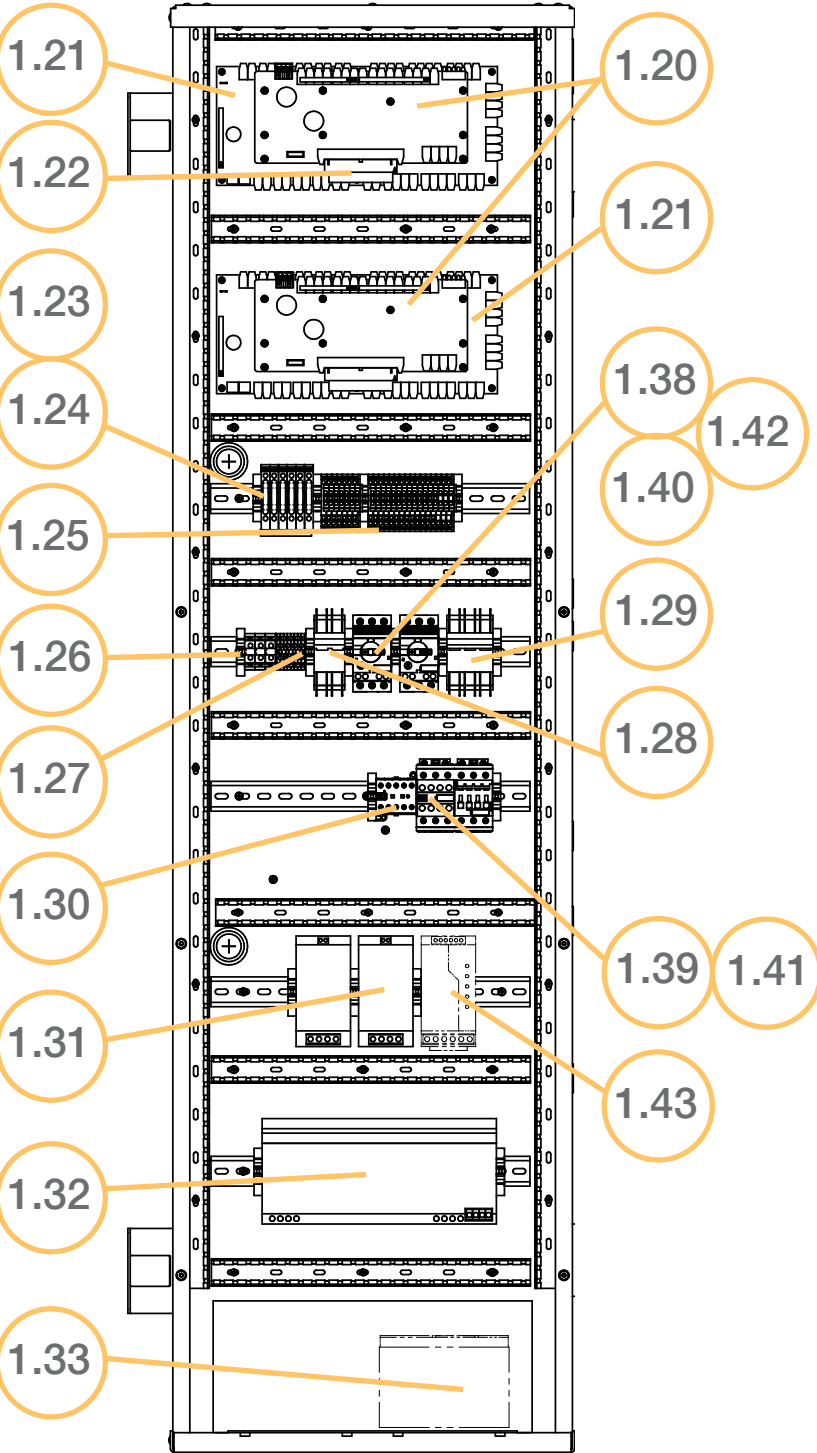
Incoming/Control Section Front Door



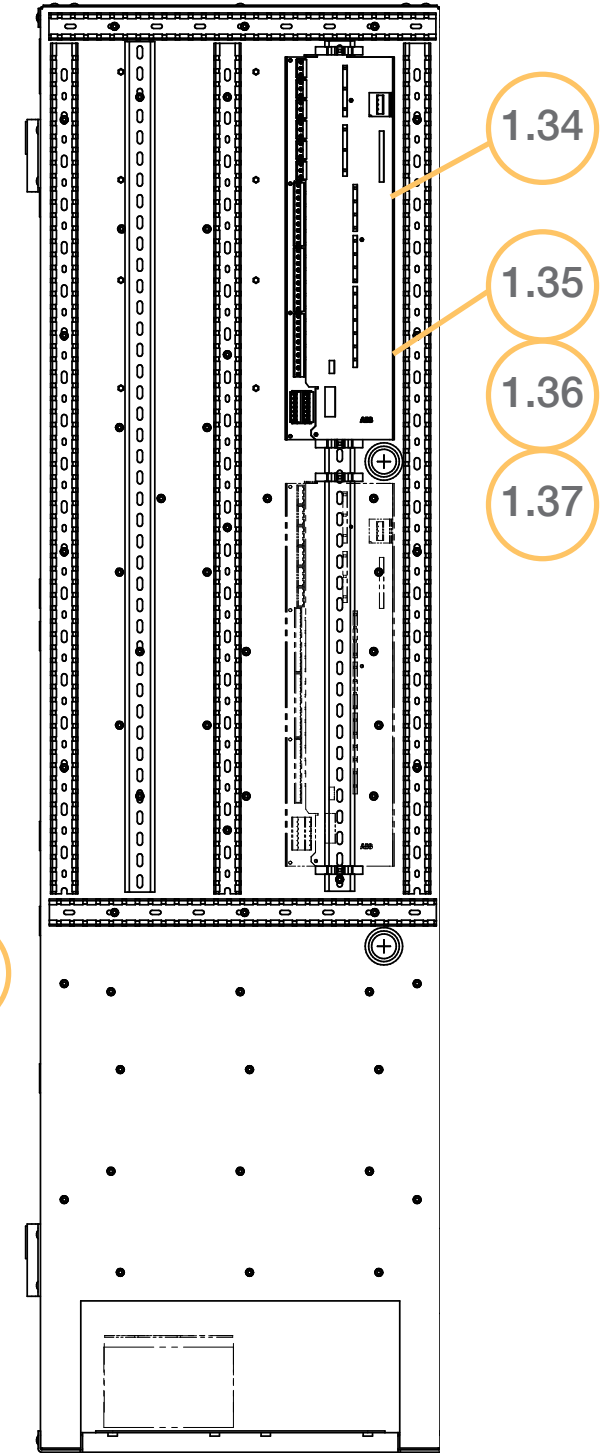
Picture 2: Front view of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.3	2UEA000987	1	CDP-312R Control Panel	Equivalent to 68281059
1.4	3BHL000764P0001	1	Control Panel Interface NDPI-02	Equivalent to 58914444
1.5	2UEA000986	1	Keypad Frame	Equivalent to 68228344
1.6	2UEA000950	1	Pushbutton-White, 30MM	
1.7	2UEA000958	2	Contact & Lamp Block w/Holder	
1.8	2UEA000962	1	LED-White	
1.9	2UEA000951	1	Pushbutton-Green, 30MM	
1.10	2UEA000963	1	LED-Green	
1.11	2UEA000952	1	Pushbutton-Yellow, 30MM	
1.12	2UEA000959	2	Lamp Block w/Holder	
1.13	2UEA000964	1	LED-Yellow	
1.14	2UEA000953	1	Pushbutton-Blue, 30MM	
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	Contact Block and Holder	
1.19	2UEA000572	1	Y-Connector, RJ12	

Incoming/Control Section
Control swing frame



Picture 3A: Swing frame - Front

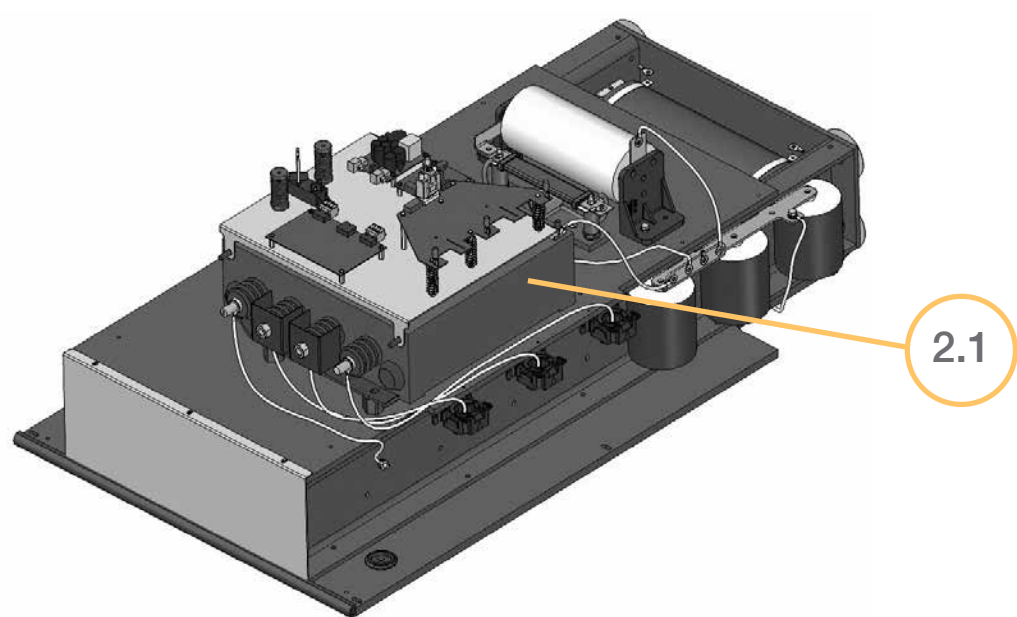


Picture 3B: Swing frame - Back

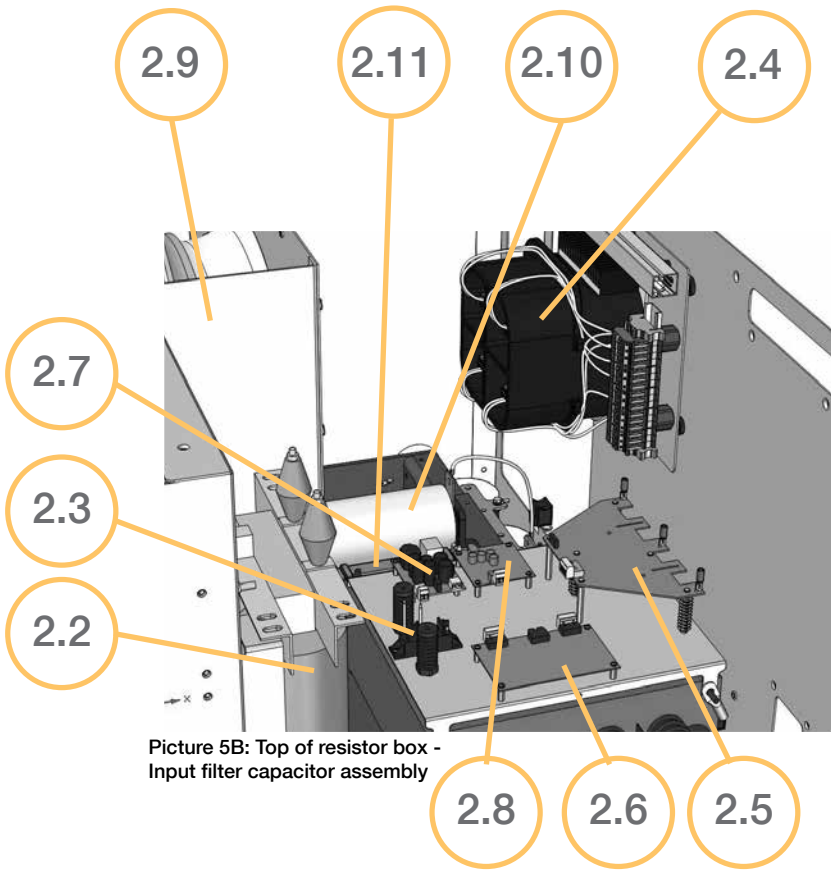
Incoming/Control Section

Item	Part number	Cabinet Qty	Description	Notes
1.20	3BHE024577R0101	2	AMC 34 Control Board	Equivalent to 68281059
1.21	3BHE024855R0101	2	INT-2 Board	Equivalent to 58914444
1.22	2UEA000651	2	64 Conductor Ribbon Cable	
1.23	2UEA000633	6	Terminal Block, Fuse Clip	
1.24	2UEA000761	6	Fuse, 4A	
1.25	2UEA000630	23	Terminal Block	
1.26	2UEA000632	3	Terminal Block	
1.27	2UEA000145	4	Terminal Block, Earthing	
1.28	2UEA001336	1	Circuit Breaker, 2 Pole 10A 480V	
1.29	2UEA000791	1	Circuit Breaker, 3 Pole 4A 480V	
1.30	2UEA000793	1	480V Relay, 24VDC Coil, NO Aux	Qty may differ based on options
1.31	2UEA000936	2	20A 3 Phase Buffer Module	Qty may differ based on options
1.32	2UEA002224	1	Power Supply, 24V	
1.33	2UEA001960	0	Battery, 24VDC, 12 Ah	Optional Equipment
1.34	3BHB003041R0101	1	IOEC Control Module	Qty may differ based on options
1.35	2UEA000843	6	IOEC Connector-3 Position	
1.36	2UEA000845	3	IOEC Connector-10 Position	
1.37	2UEA000861	2	IOEC Connector-7 Position	
1.38	2UEA001449	1	Manual Starter	Qty may differ based on options
1.39	2UEA001450	1	Contactors	Qty may differ based on options
1.40	2UEA001451	1	Terminal Block	Qty may differ based on options
1.41	2UEA001452	0	Aux. Block, 4 Pole	Qty may differ based on options
1.42	2UEA001453	1	Aux. Contact. Manual Starter	Qty may differ based on options
1.43	2UEA001961	0	UPS, DC, 24Vdc, 40A	Qty may differ based on options

IFU Section
Middle - Resistor box components



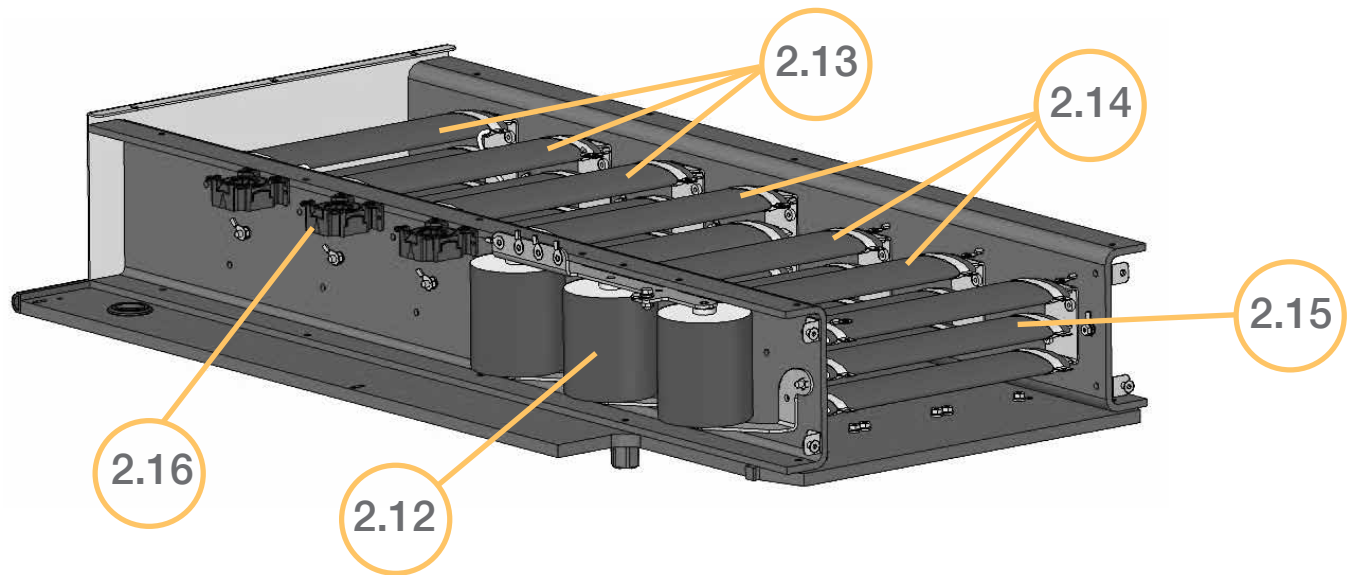
Part Number 2UEA000645 - Resistor box assembly



Picture 5B: Top of resistor box -
Input filter capacitor assembly

IFU Section

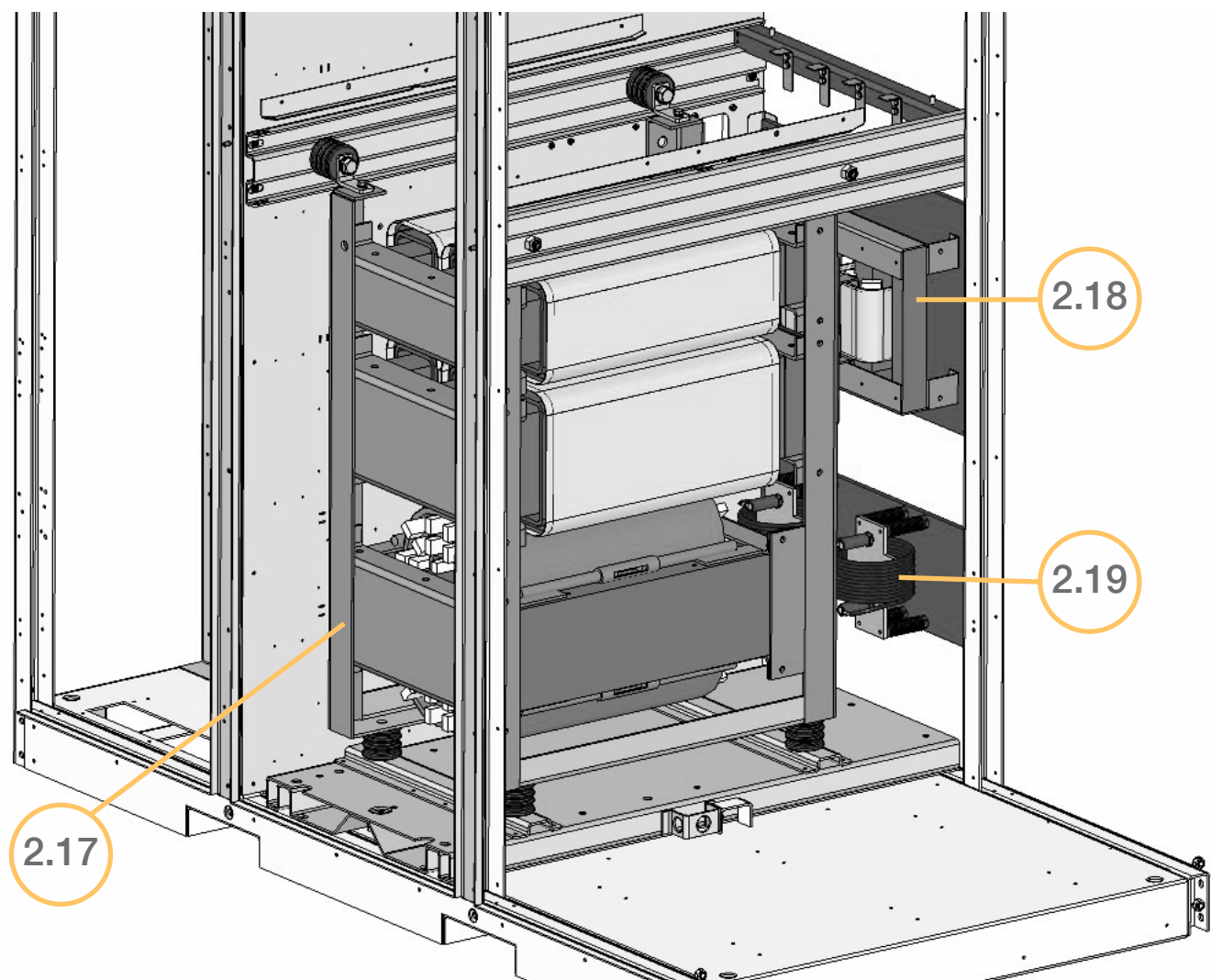
Middle - Resistor box components



Picture 5A: Resistor box section

Item	Part number	Cabinet Qty	Description	Notes
	2UEA000645	1	RESISTOR BOX ASSEMBLY	
2.1	2UEA000992	1	IFU CAPACITOR	
2.2	2UEA000138	1	CHARGING TRANSFORMER	
2.3	2UEA000967	1	HIGH VOLTAGE RELAY	
2.4	3BHE032593R0002	1	IPS	
2.5	3BHE032285R0102	1	HVD BOARD	
2.6	3BHE005555R0101	1	LD SYN-01	
2.7	3BHE020959R0127	1	IPS Single Voltage	
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	Input Filter Capacitor 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	

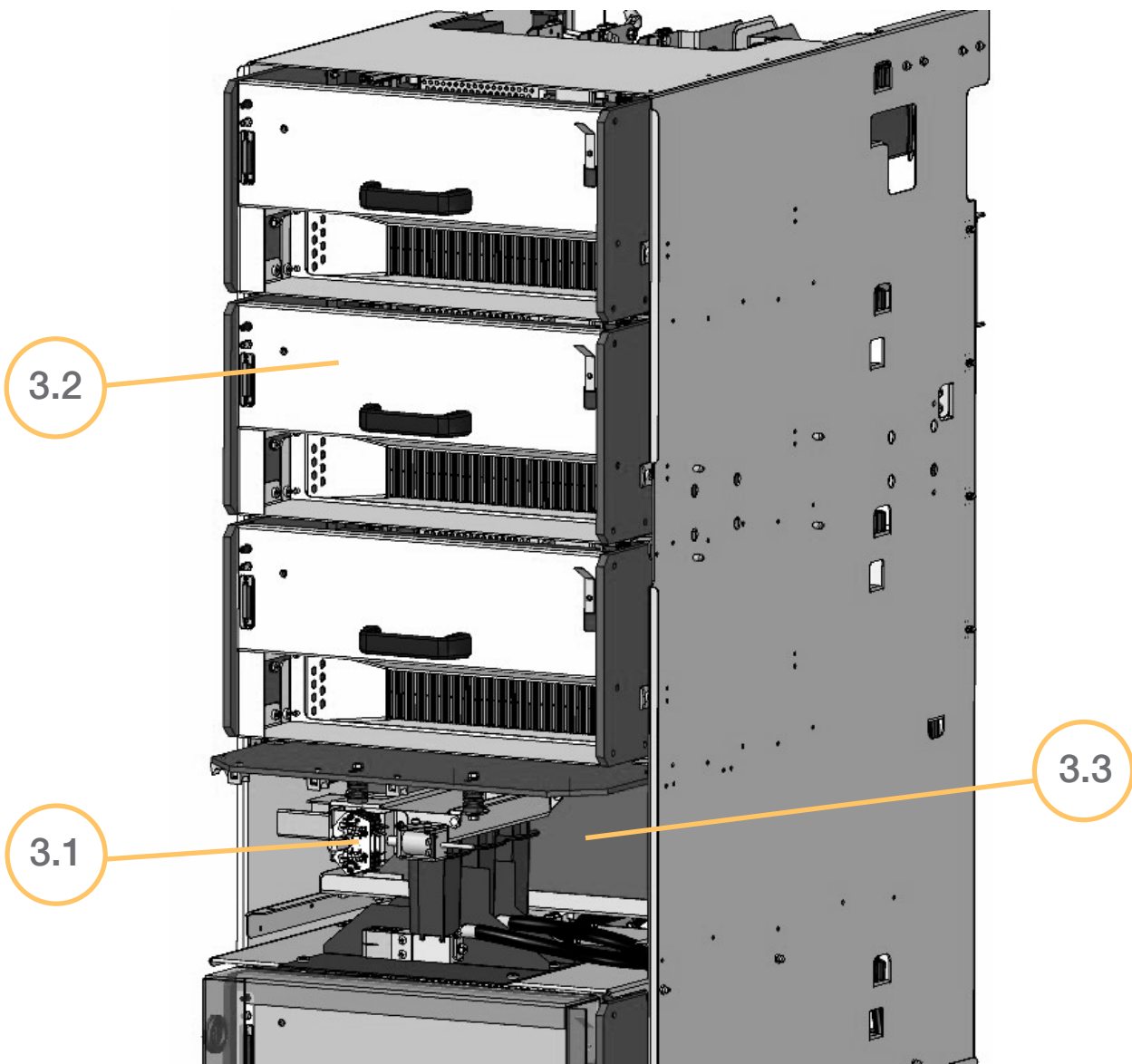
IFU Section
Bottom half



Picture 6: Front view of inductor stack

Item	Part number	Cabinet Qty	Description	Notes
2.17	2UEA001473	1	INDUCTOR STACK	
2.18	2UEA000886	1	INDUCTOR, EMC FILTER	
2.19	3BHB024327R0001	2	INRESTOR	

Phase Module Section

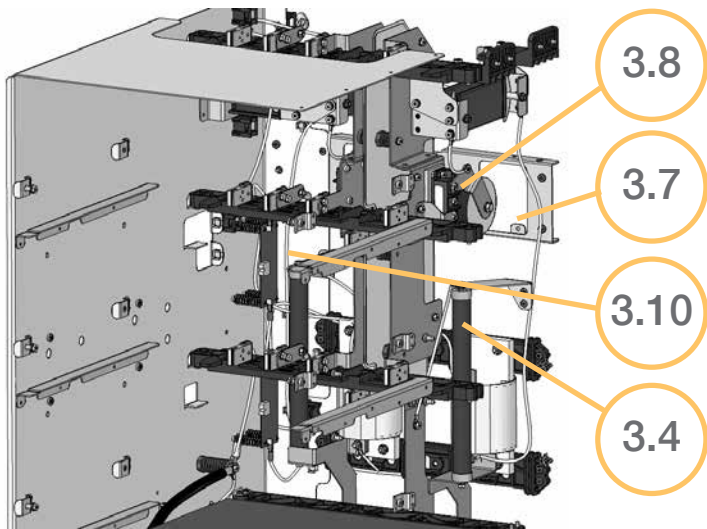


Picture 7: Front view of phase module cabinet

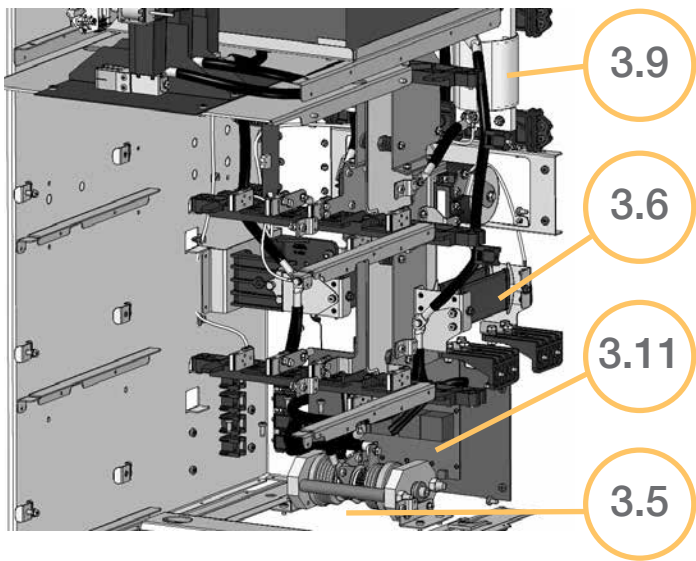
Item	Part number	Cabinet Qty	Description	Notes
3.1	3BHB021516R0001	1	GROUNDING SWITCH	
3.2	2UEA001141	6	PHASE MODULE	
3.3	2UEA000358	1	DC LINK CAPACITOR	

Phase Module Section

NP Frame



Picture 8A: Top Half of NP Frame



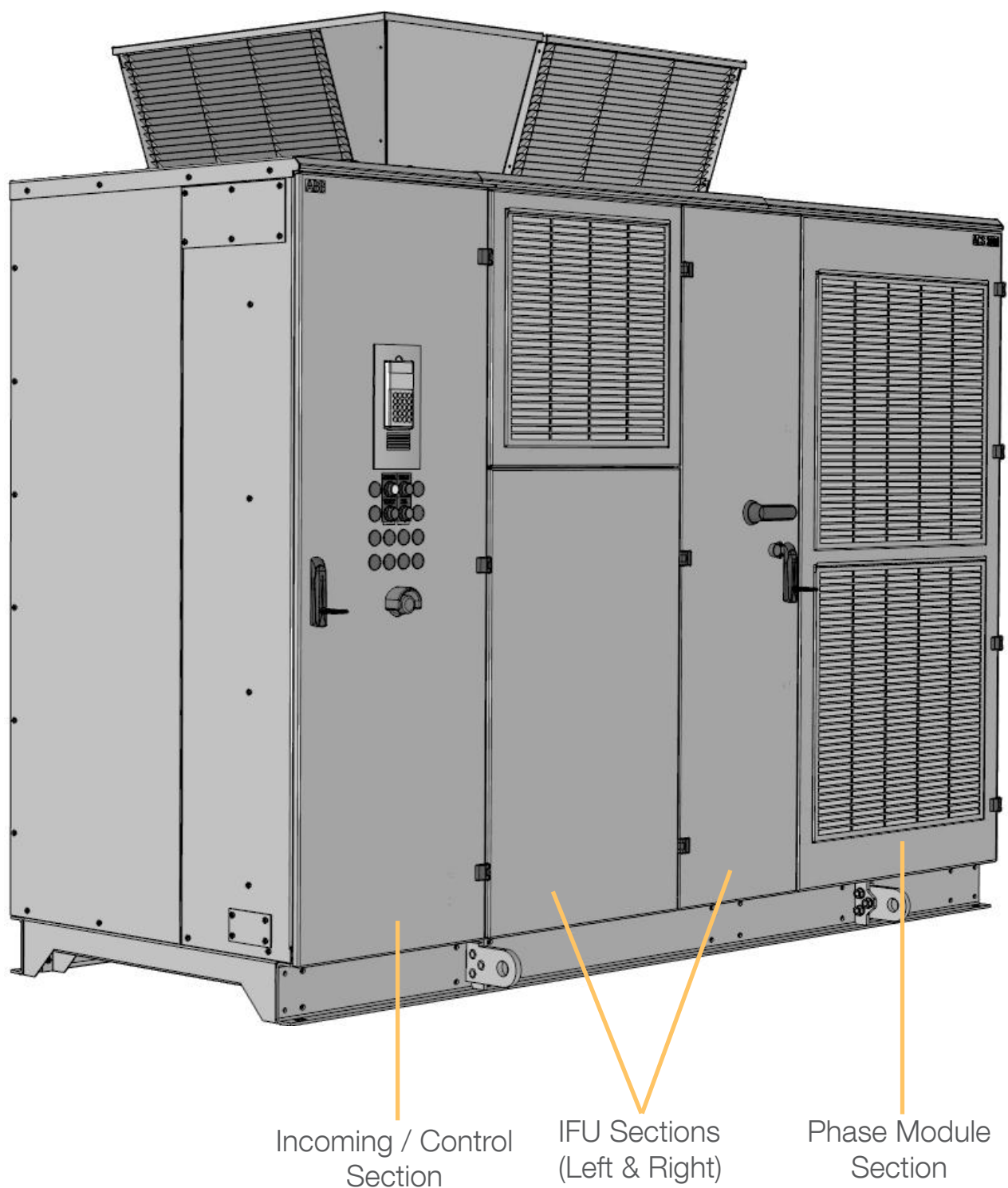
Bottom Half of NP Frame

Item	Part number	Cabinet Qty	Description	Notes
3.4	2UEA000893	2	DC LINK RESISTOR	
3.5	2UEA001168	1	CROWBAR ASSEMBLY	
3.6	2UEA000360	4	CLAMP RESISTOR	
3.7	2UEA000357	4	CLAMP CAPACITOR	
3.8	2UEA000911	4	CLAMP DIODE	
3.9	2UEA000883	4	CLAMP INDUCTOR	
3.10	3BHE009017R0102	4	VLSCD BOARD	
3.11	3BHE024747R0101	1	CROWBAR DRIVE PCB	

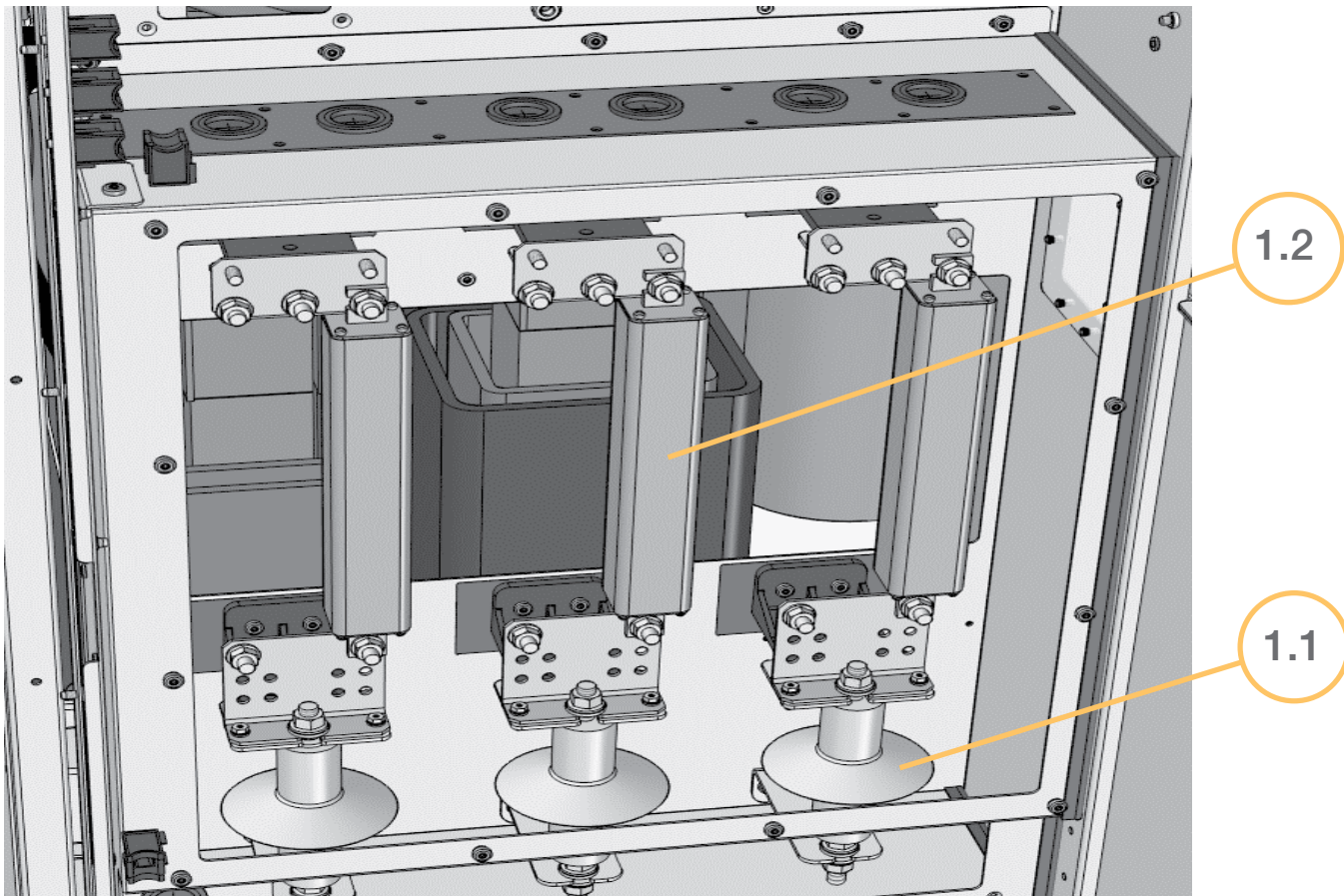
Miscellaneous

Item	Part number	Cabinet Qty	Description	Notes
4.1	2UEA001362	N/A	Frame 1 Phase Module Removal Tray	
4.2	2UEA001026	2	Converter Door Filter Material	
4.3	2UEA001042	1	IFU Panel Filter Material	
4.4	2UEA000463	1	Handle for Grounding Switch	
4.5	2UEA001078	2	Pressure Switch	

Frame 2 Parts



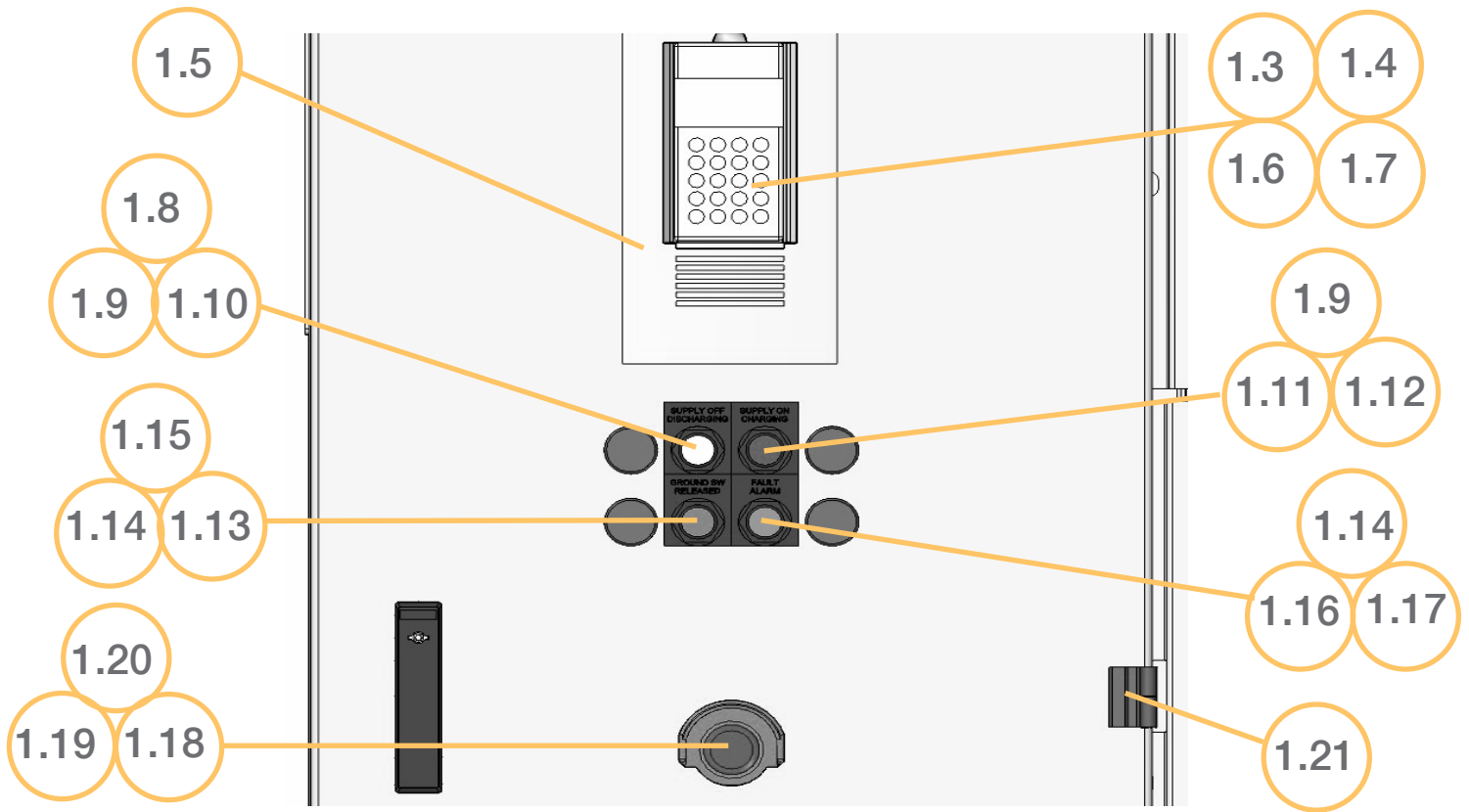
Incoming/Control Section



Picture 9A: 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

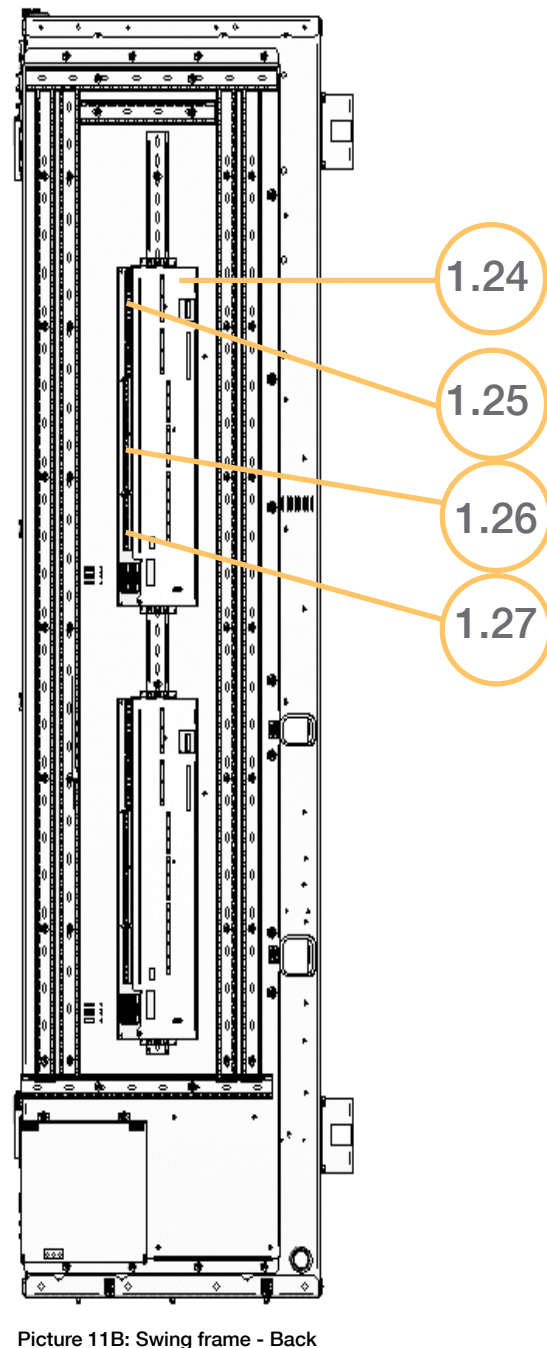
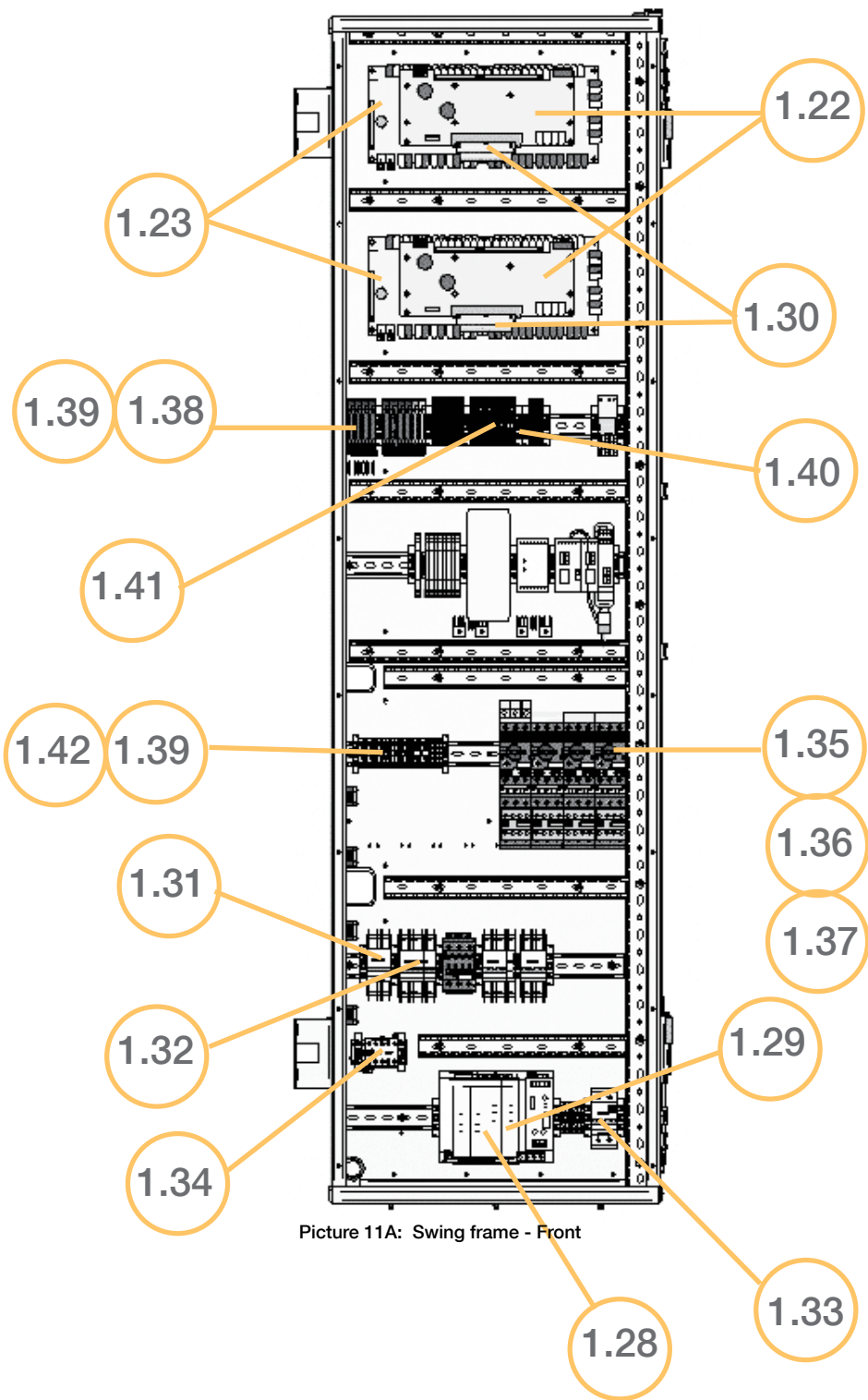
Incoming/Control Section Front Door



Picture 10: Front view of incoming section

Item	Part number	Cabinet Qty	Description	Notes
1.3	2UEA000987	1	CDP-312R Control Panel	Equivalent to 68281059
1.4	3BHL000764P0001	1	Control Panel Interface NDPI-02	Equivalent to 58914444
1.5	2UEA000986	1	Keypad Frame	Equivalent to 68228344
1.6	2UEA000570	1	CDP312 Connector Plug	
1.7	2UEA000572	1	Y-Connector, RJ12	
1.8	2UEA000950	1	Pushbutton Operator - White, 30MM	
1.9	2UEA000958	2	Contact and lamp block with holder kit	
1.10	2UEA000962	1	LED - White	
1.11	2UEA000951	1	Pushbutton Operator - Green, 30MM	
1.12	2UEA000963	1	LED-Green	
1.13	2UEA000952	1	Operator, Yellow	
1.14	2UEA000959	2	Lamp Block w/Holder	
1.15	2UEA000964	1	LED-Yellow	
1.16	2UEA000953	1	Operator, Blue	
1.17	2UEA000965	1	LED-Blue	
1.18	2UEA000131	1	Emergency Stop Protective Collar	
1.19	2UEA000130	1	Emergency Stop Pushbutton	
1.20	2UEA001312	1	Emergency Stop Contact Block	
1.21	2UEA001629	10	Door Hinge	

Incoming/Control Section
Control Swing Frame

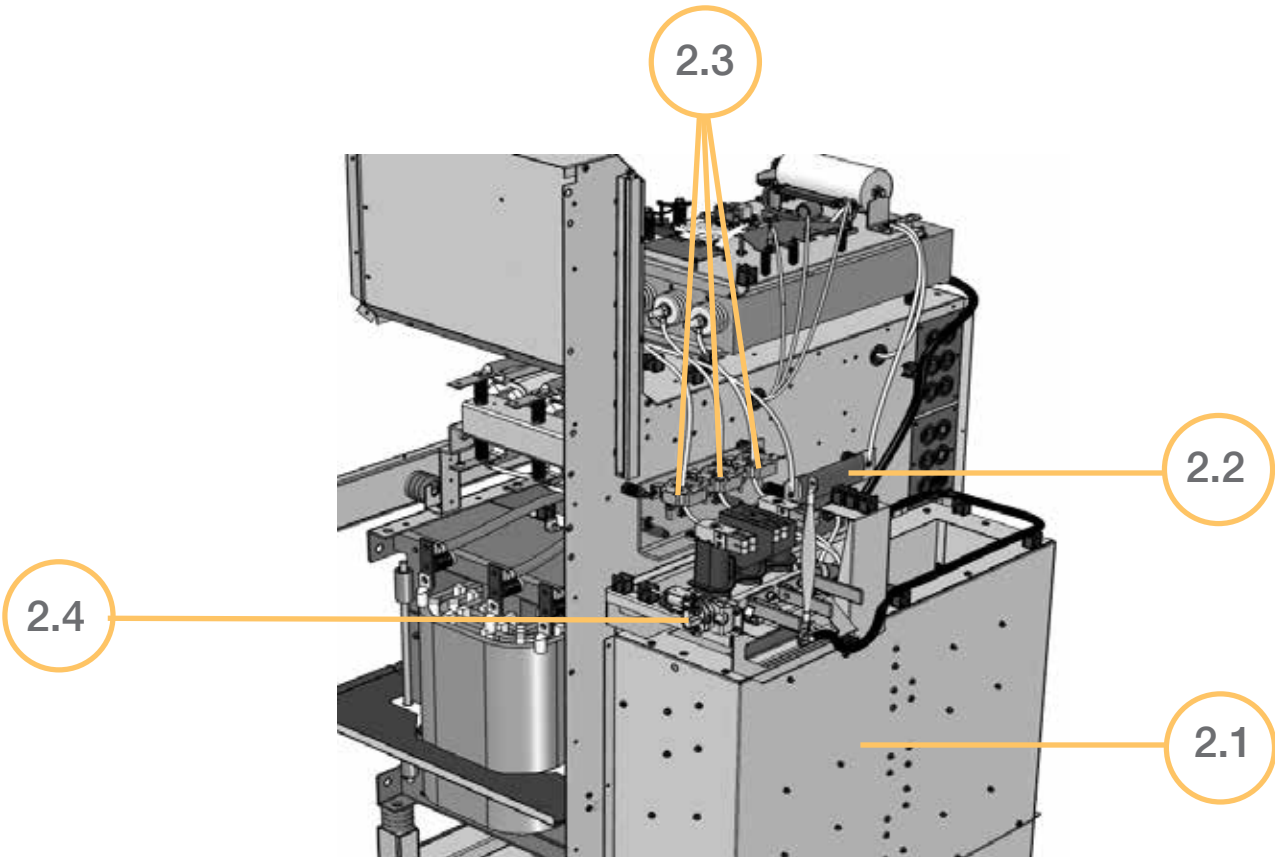


Incoming/Control Section

Control Swing Frame

Item	Part number	Cabinet Qty	Description	Notes
1.22	3BHE024577R0101	2	Application and Motor Control Board	
1.23	3BHE024855R0101	2	Interface Board	
1.24	3BHB003041R0101	2-4	IOEC Module	
1.25	2UEA000843	6	IOEC Connector - 3 Position	
1.26	2UEA000861	2	IOEC Connector - 7 Position	
1.27	2UEA000845	3	IOEC Connector - 10 Position	
1.28	2UEA002224	1	+24VFD main Power Supply, 40A 480AC	
1.29	2UEA000936	1	Power Supply Buffer	
1.30	2UEA000651	2	Ribbon Cable	
1.31	2UEA001336	1	Circuit Breaker, Charging	
1.32	2UEA000791	1	Circuit Breaker, Main Power Supply	
1.33	2UEA002101	1	Circuit Breaker, IPS Supply	
1.34	2UEA000793	1	Relay, Fan Motor	
1.35	2UEA001449	2 or 3	Manual Starter, Fan	
1.36	2UEA001450	2 or 3	Contactor, Fan	
1.37	2UEA001453	1	Fan Aux Contact	
1.38	2UEA000761	9	Fuse, 4A	
1.39	2UEA000936	8	Terminal Block, Fuse Clip	
1.40	2UEA000630	31	Terminal Block X03, X04, X09, X10 and X11	
1.41	2UEA000633	8	Terminal Block X03	
1.42	2UEA000772	16	Terminal Block X01 and X02	

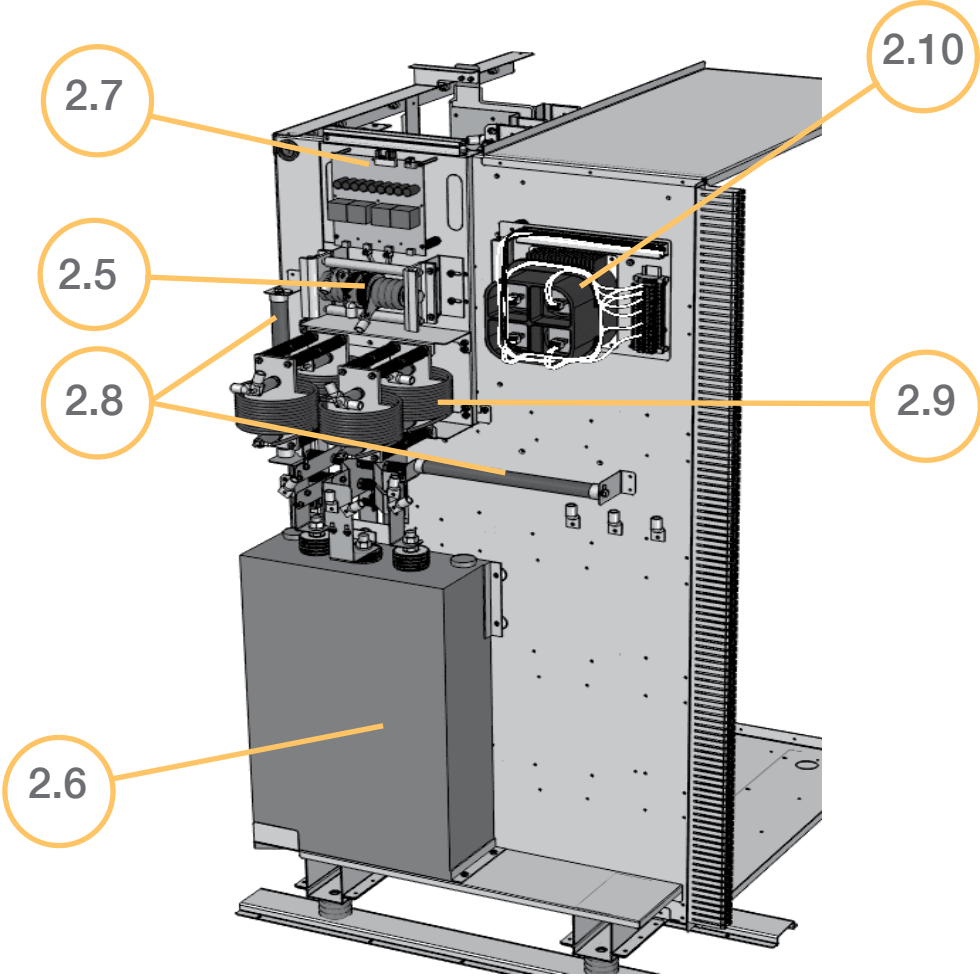
IFU Section
Right Cabinet



Picture 12A : Right Cabinet Left Side

Item	Part number	Cabinet Qty	Description	Notes
2.1	2UEA002379	1	IFU Resistor Box	
2.2	2UEA001407	1	Resistor, CM Filter	
2.3	2UEA001456	3	Current Transducer	
2.4	3BHB021516R0001	1	Grounding Switch	

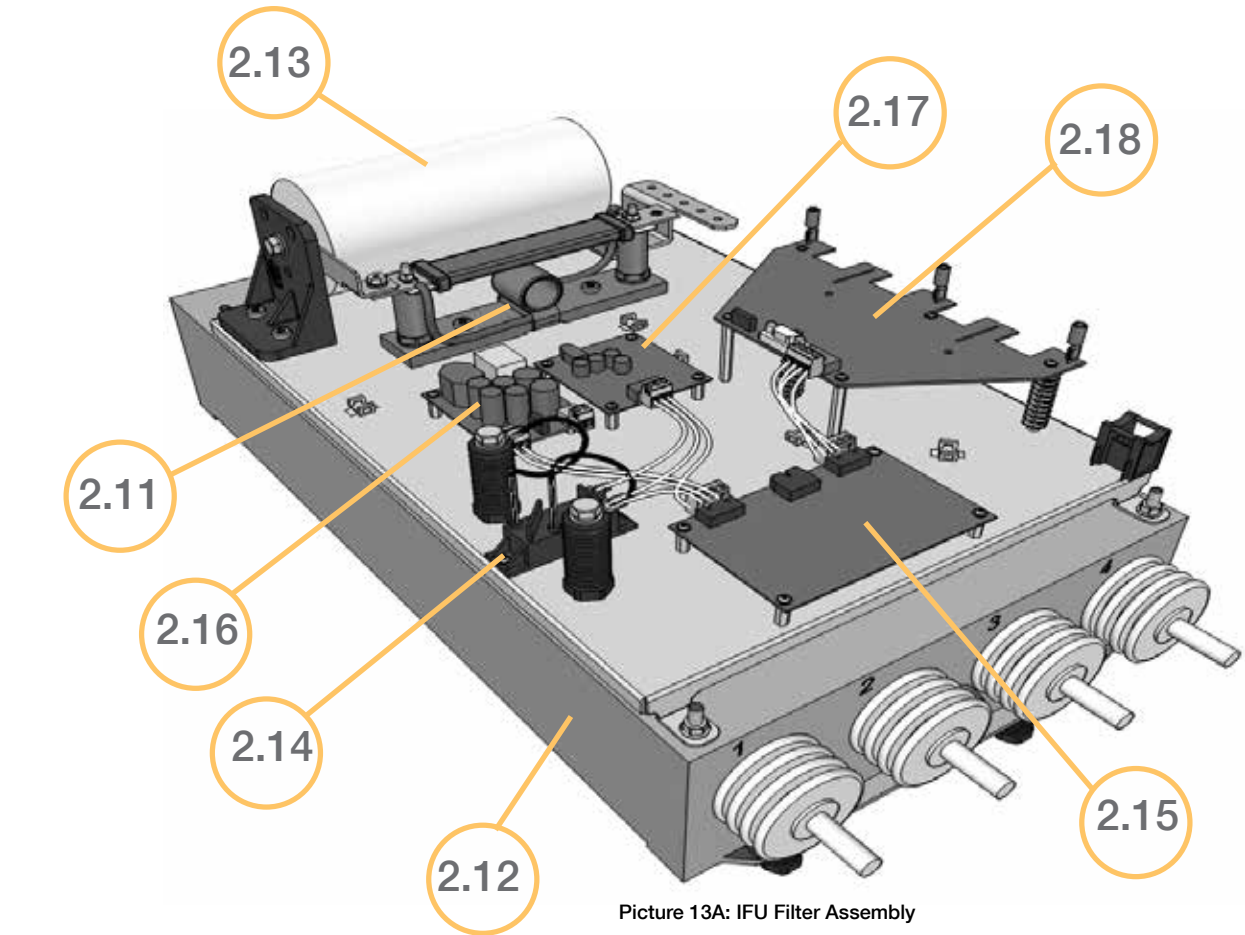
IFU Section
Right Cabinet



Picture 12B: Right Cabinet

Item	Part number	Cabinet Qty	Description	Notes
2.5	2UEA002082	1	Crowbar Stack Asm	
2.6	2UEA001406	1	Capacitor, DC Link	
2.7	3BHE024747R0101	1	Crowbar Driver Board	
2.8	2UEA001348	2	Resistor, DC Link	
2.9	3BHB024327R0001	2	Inrestor	
2.10	3BHE032593R0002	1	IPS Power Supply	

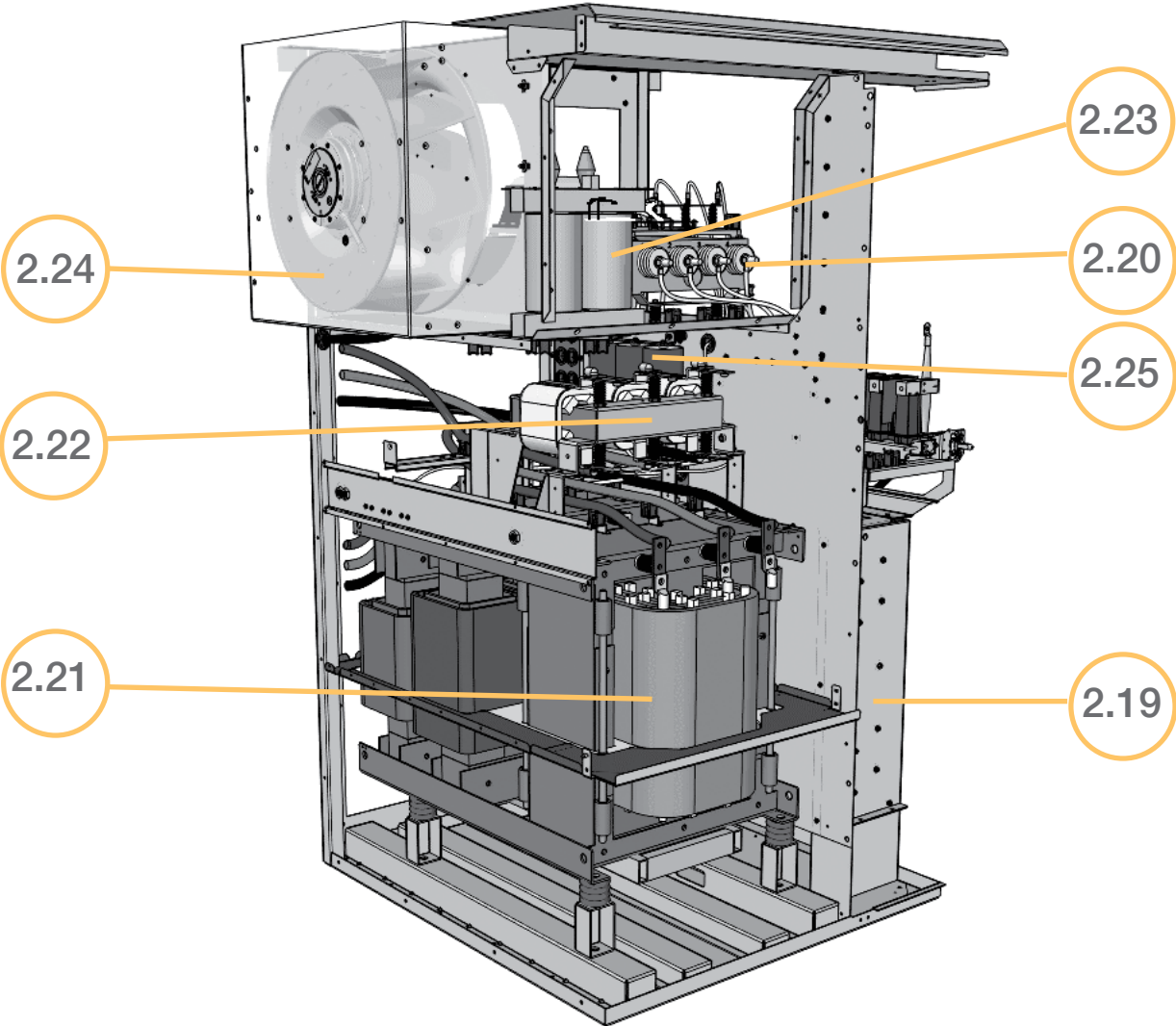
IFU Section Filter Assembly



Picture 13A: IFU Filter Assembly

Item	Part number	Cabinet Qty	Description	Notes
2.11	3BHB024326R0001	1	Filter Assembly	
2.12	2UEA001352	1	IFU Capacitor	
2.13	3BHB020698R0010	1	NP Grounding Capacitor	
2.14	2UEA000967	1	High Voltage Relay	
2.15	3BHE005555R0101	1	Sync Board	
2.16	3BHE020959R0127	1	IGBT Power Supply Board	
2.17	3BHE006373R0101	1	Optical Electrical Interface	
2.18	3BHE032285R0102	1	High Voltage Divider Board	

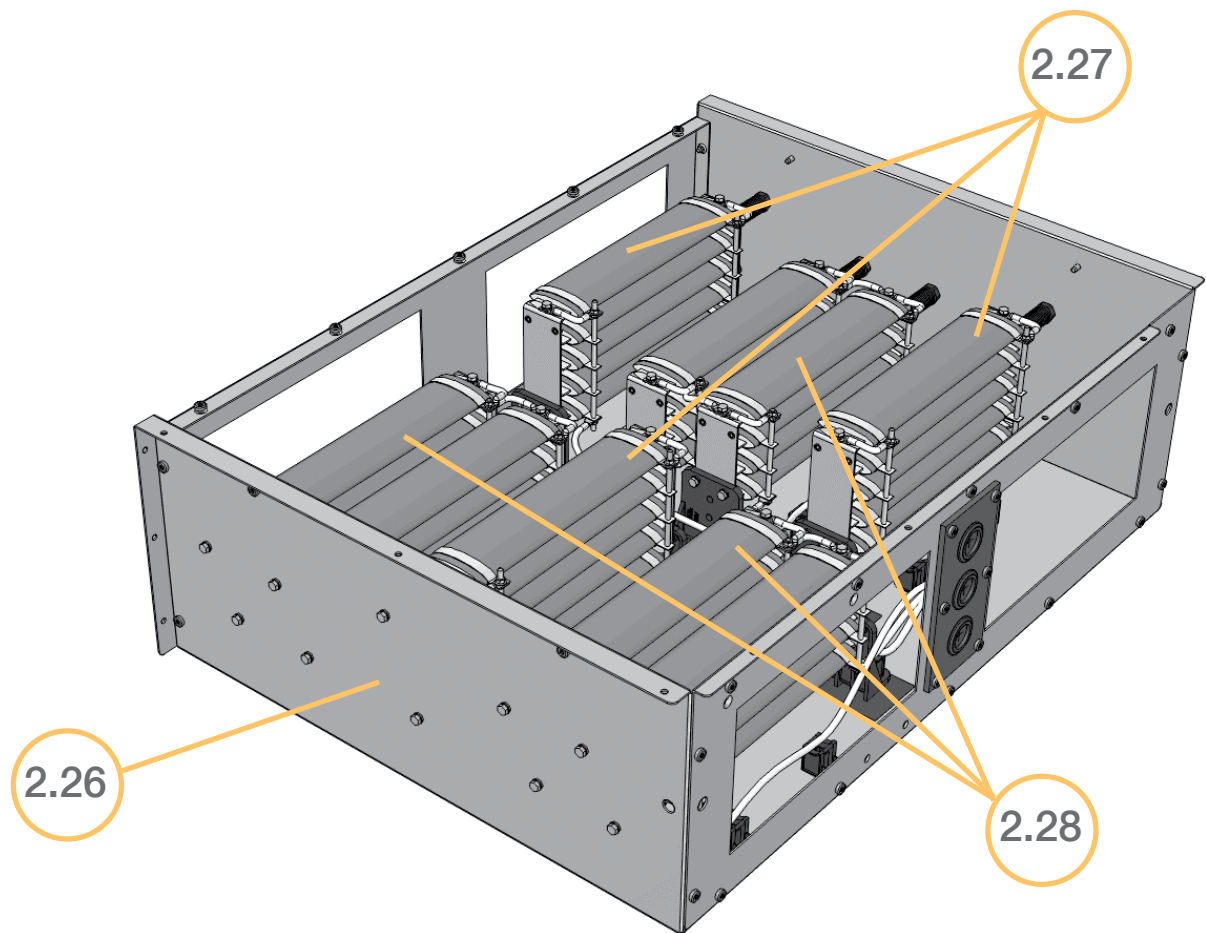
IFU Section
Left Cabinet



Picture 14A: Left IFU Cabinet

Item	Part number	Cabinet Qty	Description	Notes
2.19	2UEA002379	1	IFU Resistor Box	
2.20	2UEA001352	1	IFU Capacitor	
2.21	2UEA002554	1	Inductor Stack	
2.22	2UEA001351	1	Inductor, EMC Filter	
2.23	2UEA000138	1	Charging Transformer	
2.24	2UEA001051	2-3	Cooling Fan	
2.25	2UEA001404	3	EMC Capacitor	

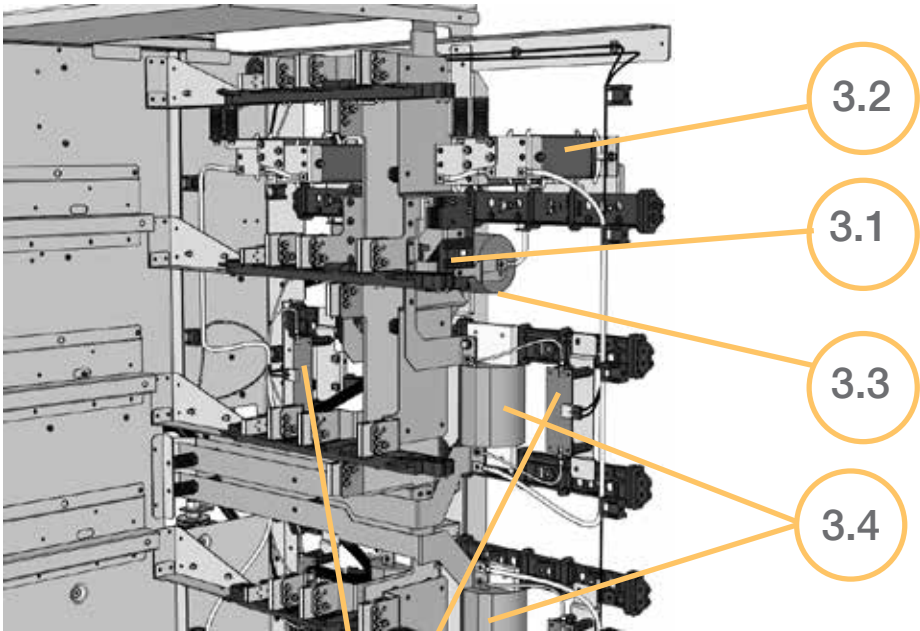
IFU Section
Resistor Box



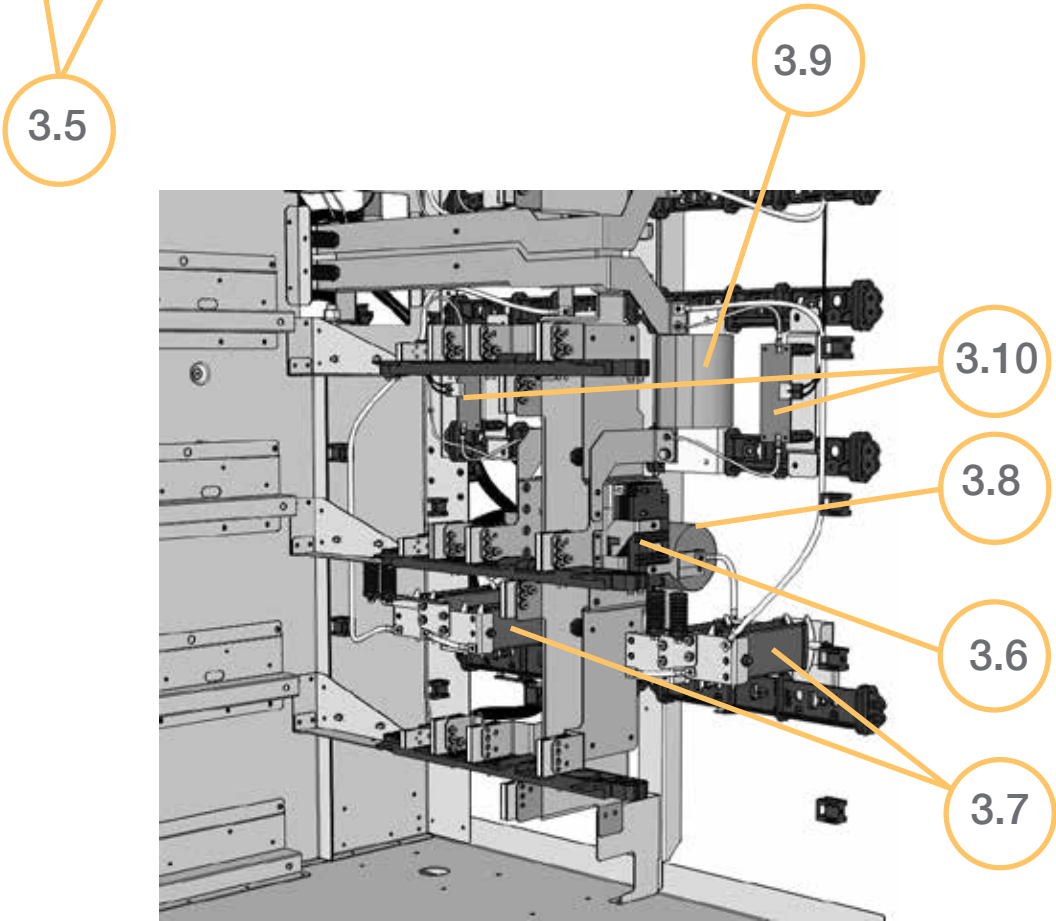
Picture 14A: Resistor Box -
view from the top

Item	Part number	Cabinet Qty	Description	Notes
2.26	2UEA002379	1	IFU Resistor Box	
2.27	2UEA001350	1	IFU Resistor	
2.28	2UEA001505	3	EMC Resistor	

Phase Module Section
NP Frame



Picture 15A: NP Frame Top



Picture 15B: NP Frame Bottom

Phase Module Section

NP Frame

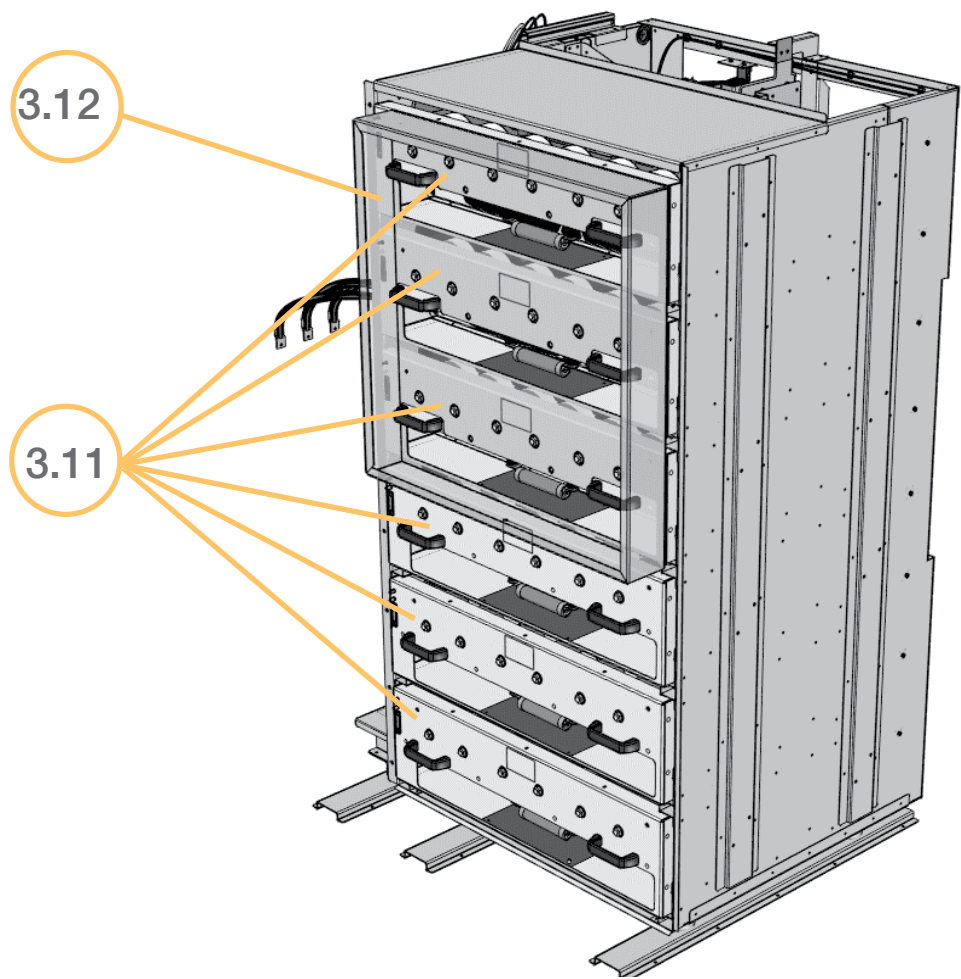
NP Frame Top

Item	Part number	Cabinet Qty	Description	Notes
3.1	2UEA000911	8	Clamp Diode	
3.2	2UEA000360	8	Clamp Resistor	
3.3	2UEA001405	4	Capacitor, Clamp	
3.4	2UEA001403	4	Inductor, Clamp	
3.5	3BHE009017R0102	4	Short Circuit Detection 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	Capacitor, Clamp	
3.9	2UEA001403	4	Inductor, Clamp	
3.10	3BHE009017R0102	4	Short Circuit Detection Board	

Phase Module Section
Front



Item	Part number	Cabinet Qty	Description	Notes
3.11	2UEA002083	6	Phase Module	
3.12	2UEA001770	2	Air Plenum	

Contact us

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