

Goodrive880 Series Active Rectifier Component Hardware Manual



No.	Change description	Version	Release date
1	First release.	V1.0	October 2023

Preface

Thank you for choosing INVT Goodrive880 series engineering variable-frequency drive (VFD).

GD800-91 series are Goodrive880 series active rectifier products, which mainly consist of rectifier units, LCL filtering components, buffer components, lightning protection components, EMI components and voltage detection modules . You can purchase the components for system integration by yourselves.

This manual is Goodrive880 series active rectifier component hardware manual, presenting safety precautions, product overview, configuration list, electrical principle and wiring, and product dimensions. Read through this manual carefully before installation to ensure the product is installed and operated in a proper manner to give full play to its excellent performance and powerful functions. If you have any question about the function and performance of the product, please consult our technical support.

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1 Product overview

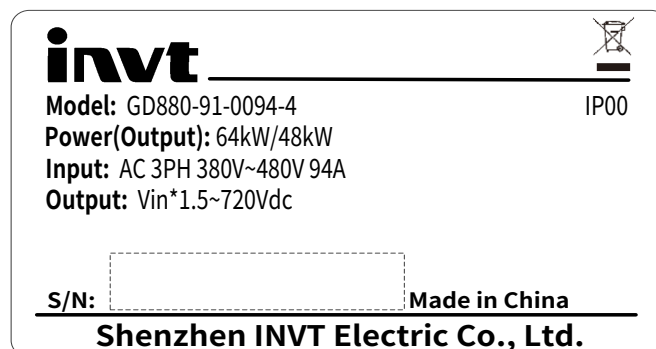
1.1 Product specifications

Table 1-1 Product specifications

Function description		Specifications
Basic performance	AC input voltage	400V, 3PH 380–440V AC $\pm 10\%$ ($-15\% < 1\text{min}$)
	Input frequency	50Hz or 60Hz; Allowed range: 47–63Hz
	Unbalance	Less than $\pm 3\%$ of the rated interphase voltage
	THD	THDI $< 5\%$ (at the rated current) THDU $< 5\%$
	Overload capacity	Light overload: Overload with the current of 110% can last for 1 minute every 5 minutes, and overload with the current of 150% can last for 10 seconds every 5 minutes Heavy overload: Overload with the current of 150% can last for 1 minute every 5 minutes, and overload with the current of 180% can last for 10 seconds every 5 minutes
	Working efficiency	$\geq 97\%$
	Power factor	≥ 0.99 (of the rated current)
Environment condition	Working temperature	$-10^{\circ}\text{C} - +50^{\circ}\text{C}$; Derating is required when the ambient temperature exceeds 40°C .
	Relative humidity	5%–95%, no condensation
	Installation altitude	Below 1000m (Derating is required when the altitude exceeds 1000m. Derate by 1% for every increase of 100m.)
Mechanical data	Anti-vibration performance	Compliant with 3 M4 vibration level in GB/T4798.3
	IP rating	For the module: IP00
	Safety performance	Compliant with EN 61800-5-1
	Cooling method	Forced air cooling
Protection function	Protection function	Including functions of protection against short circuit, overcurrent, overload, overvoltage, undervoltage, overtemperature, and phase loss

1.2 Product nameplate

Figure 1-1 Product nameplate



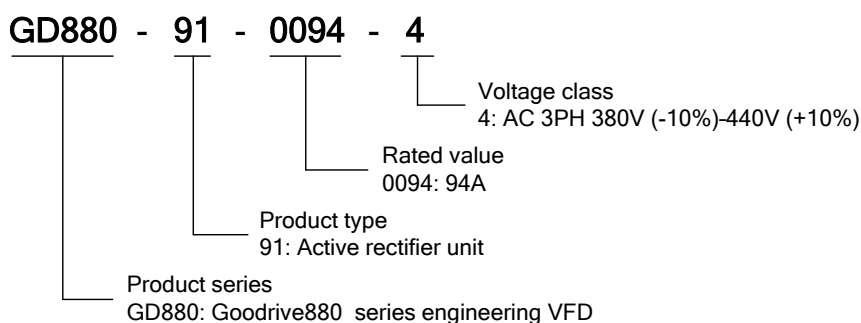
Note:

- Figure 1-1 is a product nameplate example. The specification markings are subject to the machine nameplate.
- The model designation code contains basic product information such as rated current and rated voltage.

1.3 Product model

The model designation code contains product information. You can find the model designation code on product nameplate.

Figure 1-2 Product model code description



1.4 Product ratings

Table 1-2 Product ratings

Model	Rated value					Light overload application		Heavy overload application		Outline dimensions	Heat dissipation (kW)	Air volume (m³/h)
	I _N	I _N	I _{max}	S _N	P _N	I _{LD}	P _{LD}	I _{HD}	P _{HD}			
	A (AC)	A (DC)	A (DC)	kVA	kW (DC)	A (DC)	kW (DC)	A (DC)	kW (DC)			
GD880-91-0094-4	94	107	140	65	64	103	62	81	48	A3	1.92	179
GD880-91-0116-4	116	132	172	80	78	127	76	99	59	A4	2.34	255
GD880-91-0149-4	149	170	221	103	102	164	98	128	77	A4	3.06	255
GD880-91-0183-4	183	209	272	127	126	201	120	157	94	A4	3.78	255
GD880-91-0220-4	220	251	326	153	151	241	145	188	113	A6	4.53	1000

Model	Rated value					Light overload application		Heavy overload application		Outline dimensions	Heat dissipation (kW)	Air volume (m³/h)
	I _N	I _N	I _{max}	S _N	P _N	I _{LD}	P _{LD}	I _{HD}	P _{HD}			
	A (AC)	A (DC)	A (DC)	kVA	kW (DC)	A (DC)	kW (DC)	A (DC)	kW (DC)			
GD880-91-0260-4	260	296	385	179	178	284	171	222	133	A6	5.34	1000
GD880-91-0312-4	312	355	462	216	214	341	205	266	161	A7	6.42	1000
GD880-91-0395-4	395	452	587	274	271	433	260	339	203	A7	8.13	1000
GD880-91-0516-4	516	590	767	357	354	565	339	442	265	A7	10.62	1000

1.5 Unit outline dimensions and weight

Outline dimensions	Height (mm)	Width (mm)	Depth (mm)	Net weight (kg)
A3	440	100	435	8.7
A4	440	200	435	19.5
A6	850	200	415	45
A7	980	200	415	55

2 Configuration list

The configuration list of GD800-91 active rectifier products of different power is as follows:

Rated/heavy-load power	No.	Name	Model	Order No.	Qty
64kW/48kW	1	Rectifier unit	GD880-91-0094-4	-	1
	2	LCL filtering component	LCL-0116-0.4SA-4149-RO	-	1
	3	Buffer component	HC-0110-4-Z	19005-00360	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
78kW/59kW	1	Rectifier unit	GD880-91-0116-4	-	1
	2	LCL filtering component	LCL-0116-0.4SA-4149-RO	-	1
	3	Buffer component	HC-0110-4-Z	19005-00360	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
102kW/77kW	1	Rectifier unit	GD880-91-0149-4	-	1
	2	LCL filtering component	LCL-0180-0.4SA-4149-RO	91012-02219	1
	3	Buffer component	HC-0110-4-Z	19005-00360	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1

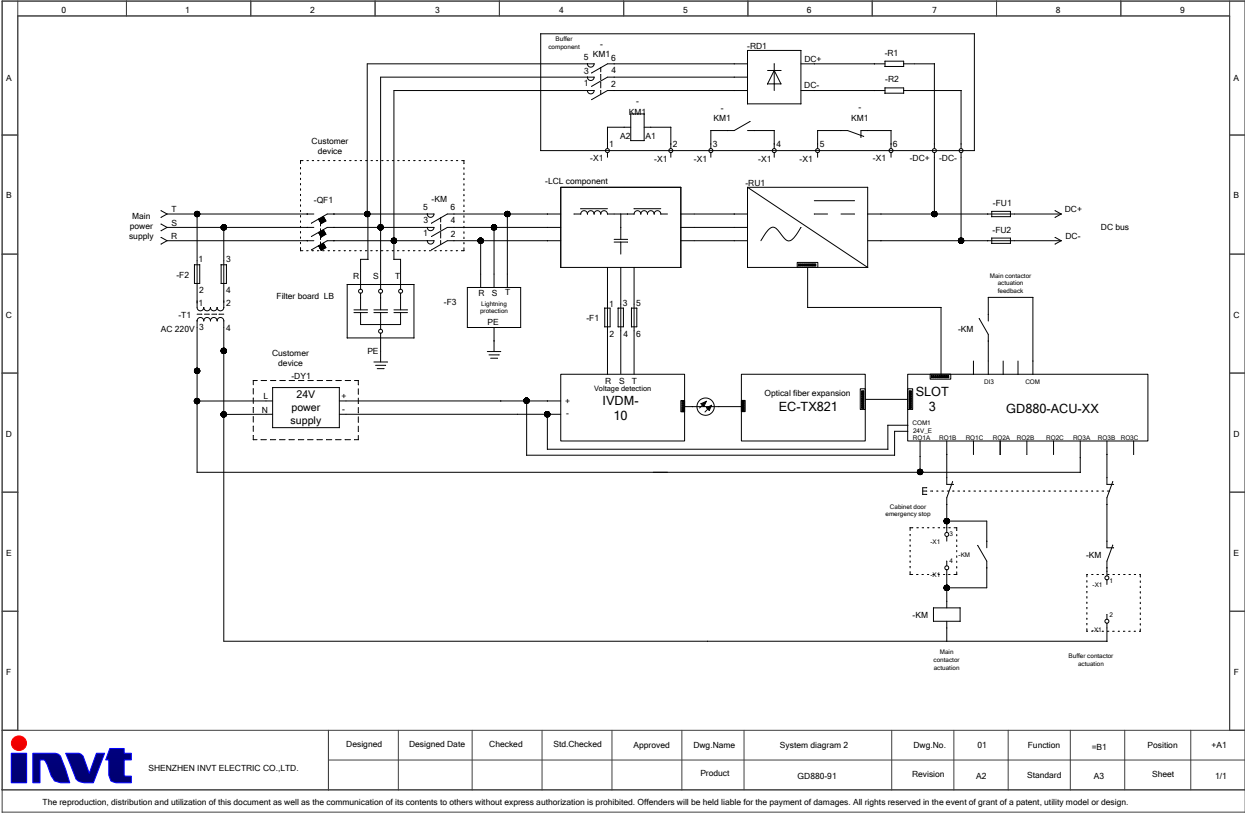
Rated/heavy-load power	No.	Name	Model	Order No.	Qty
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
126kW/94kW	1	Rectifier unit	GD880-91-0183-4	-	1
	2	LCL filtering component	LCL-0180-0.4SA-4149-RO	91012-02219	1
	3	Buffer component	HC-0110-4-Z	19005-00360	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
151kW/113kW	1	Rectifier unit	GD880-91-0220-4	-	1
	2	LCL filtering component	LCL-0220-0.4SA-4149-RO	91012-00885	1
	3	Buffer component	HC-0110-4-Z	19005-00360	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
	9	LCD control panel	SOP-880	-	1
178kW/133kW	1	Rectifier unit	GD880-91-0260-4	-	1
	2	LCL filtering component	LCL-0335-0.4SA-4149-RO	91012-02222	1
	3	Buffer component	HC-200-4	19005-00361	1

Rated/heavy-load power	No.	Name	Model	Order No.	Qty
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
	9	LCD control panel	SOP-880	-	1
214kW/161kW	1	Rectifier unit	GD880-91-0312-4	-	1
	2	LCL filtering component	LCL-0335-0.4SA-4149-RO	91012-02222	1
	3	Buffer component	HC-200-4	19005-00361	1
	4	Lightning protection component	RV-380V	12029-00014	1
	5	EMI component	GD800-LB	90001-03990	1
	6	Optical fiber expansion module	EC-TX821	11023-00157	1
	7	AC voltage detection module	IVDM-10	11023-00162	1
	8	1m optical fiber	HFBR-1M	-	1
	9	LCD control panel	SOP-880	-	1
271kW/203kW	1	Rectifier unit	GD880-91-0395-4	90001-02885	1
	2	LCL filtering component	LCL-380A-00214-2	91012-02082	1
	3		CBU-C65-6-D	11029-00093	1
	4	Buffer component	HC-200-4	19005-00361	1
	5	Lightning protection component	RV-380V	12029-00014	1
	6	EMI component	GD800-LB	90001-03990	1
	7	Optical fiber expansion module	EC-TX821	11023-00157	1
	8	AC voltage detection module	IVDM-10	11023-00162	1
	9	1m optical fiber	HFBR-1M	-	1

Rated/heavy-load power	No.	Name	Model	Order No.	Qty
	10	LCD control panel	SOP-880	-	1
354kW/265kW	1	Rectifier unit	GD880-91-0516-4	90001-02885	1
	2	LCL filtering component	LCL-380A-00214-2	91012-02082	1
	3		CBU-C65-6-D	11029-00093	1
	4	Buffer component	HC-200-4	19005-00361	1
	5	Lightning protection component	RV-380V	12029-00014	1
	6	EMI component	GD800-LB	90001-03990	1
	7	Optical fiber expansion module	EC-TX821	11023-00157	1
	8	AC voltage detection module	IVDM-10	11023-00162	1
	9	1m optical fiber	HFBR-1M	-	1
	10	LCD control panel	SOP-880	-	1

3 Electrical principle and wiring

The electrical principle and wiring diagram of GD880-91 active rectifier products are as follows:



Note: Except for the components in 2 Configuration list, other components in the above figure need to be purchased separately.

4 Product dimensions

4.1 Rectifier unit dimensions

Figure 4-1 0094-0116 rectifier unit dimensions (unit: mm)

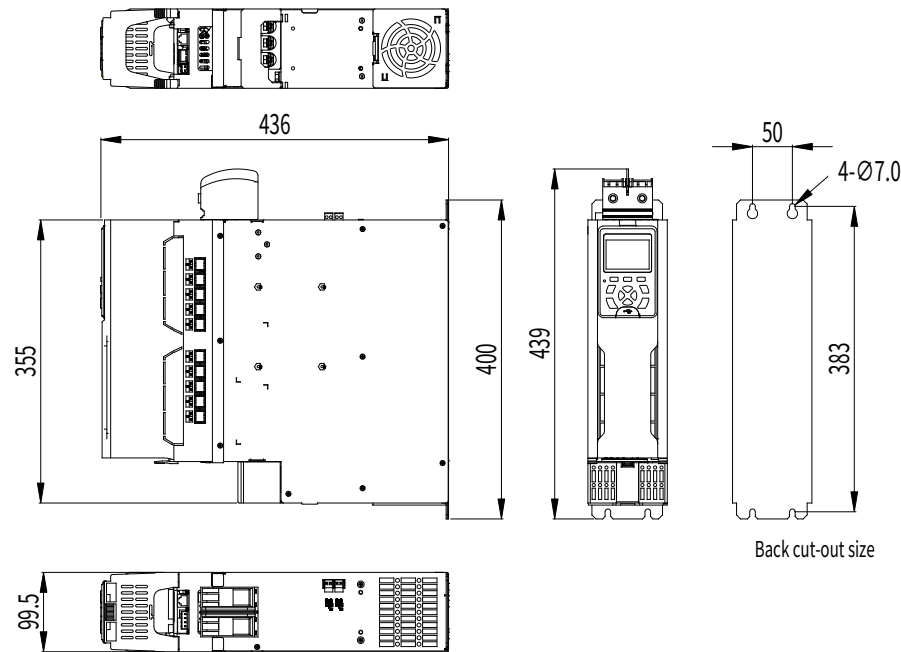


Figure 4-2 0149-0183 rectifier unit dimensions (unit: mm)

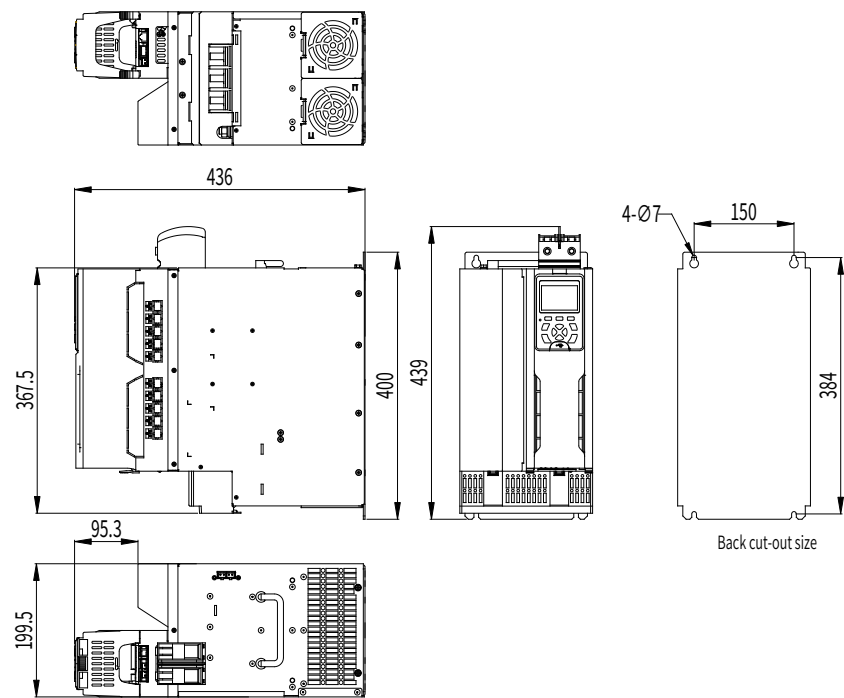


Figure 4-3 0220-0260 rectifier unit dimensions (unit: mm)

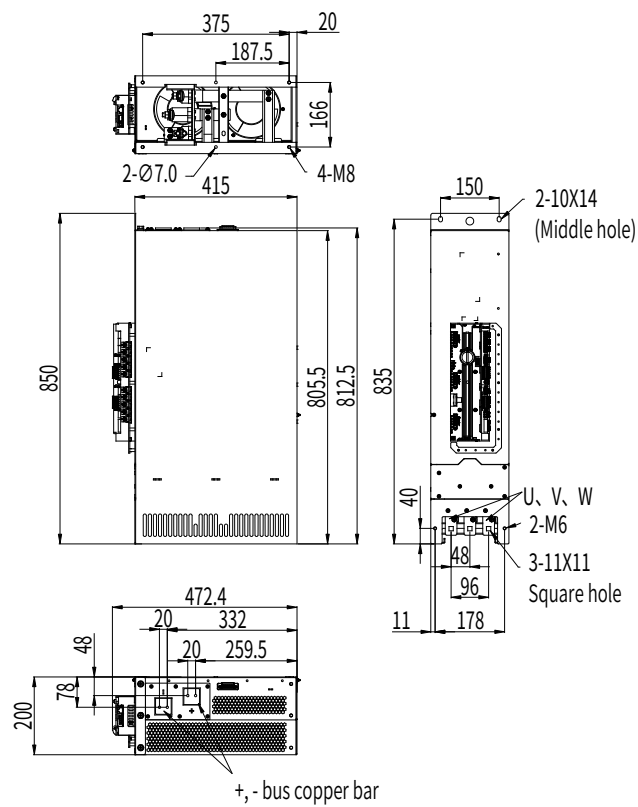
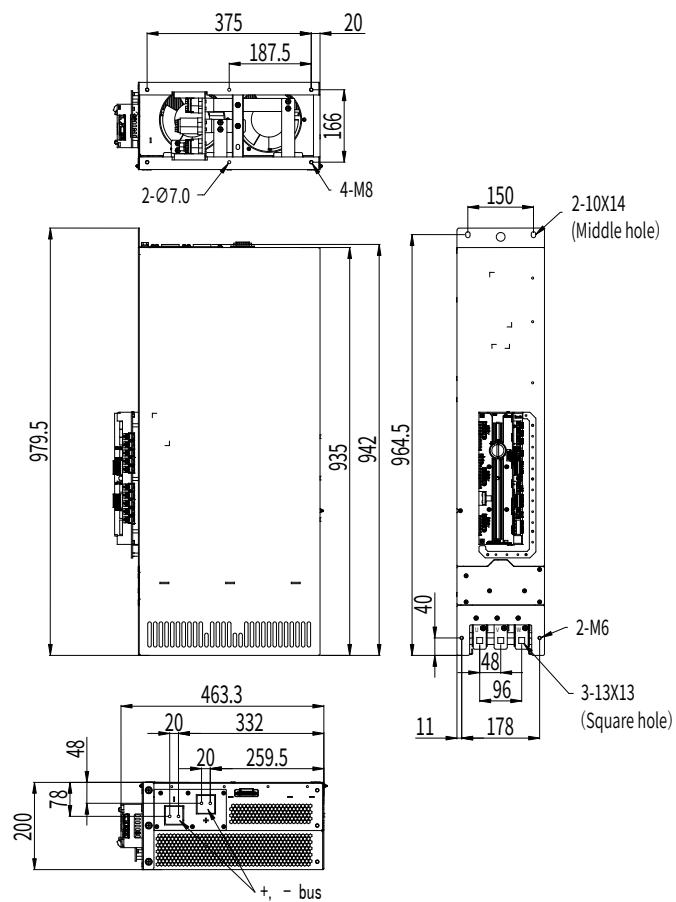
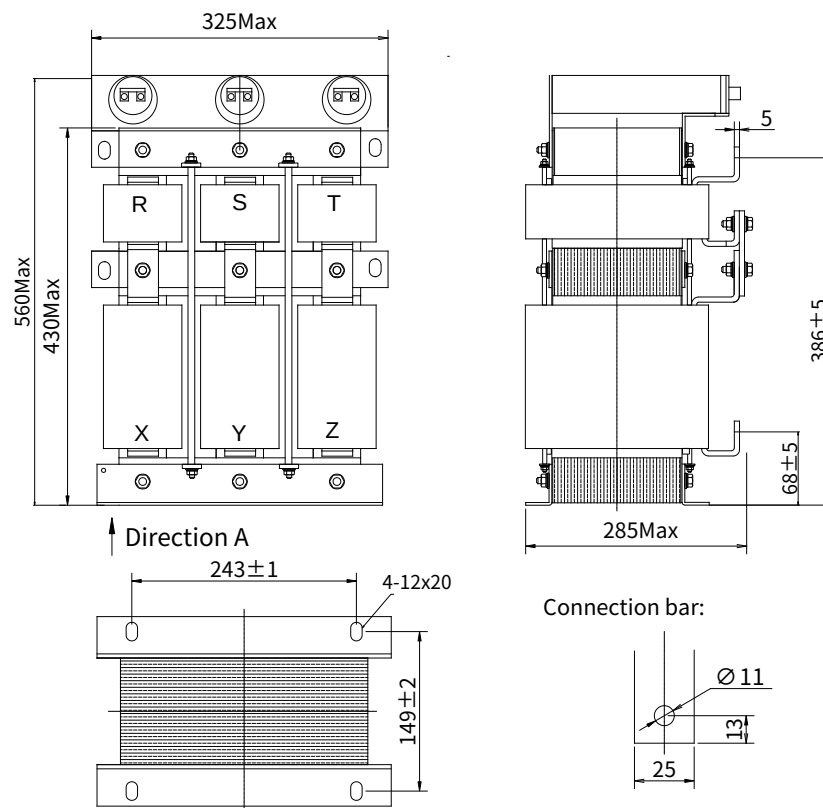


Figure 4-4 0312-0516 rectifier unit dimensions (unit: mm)



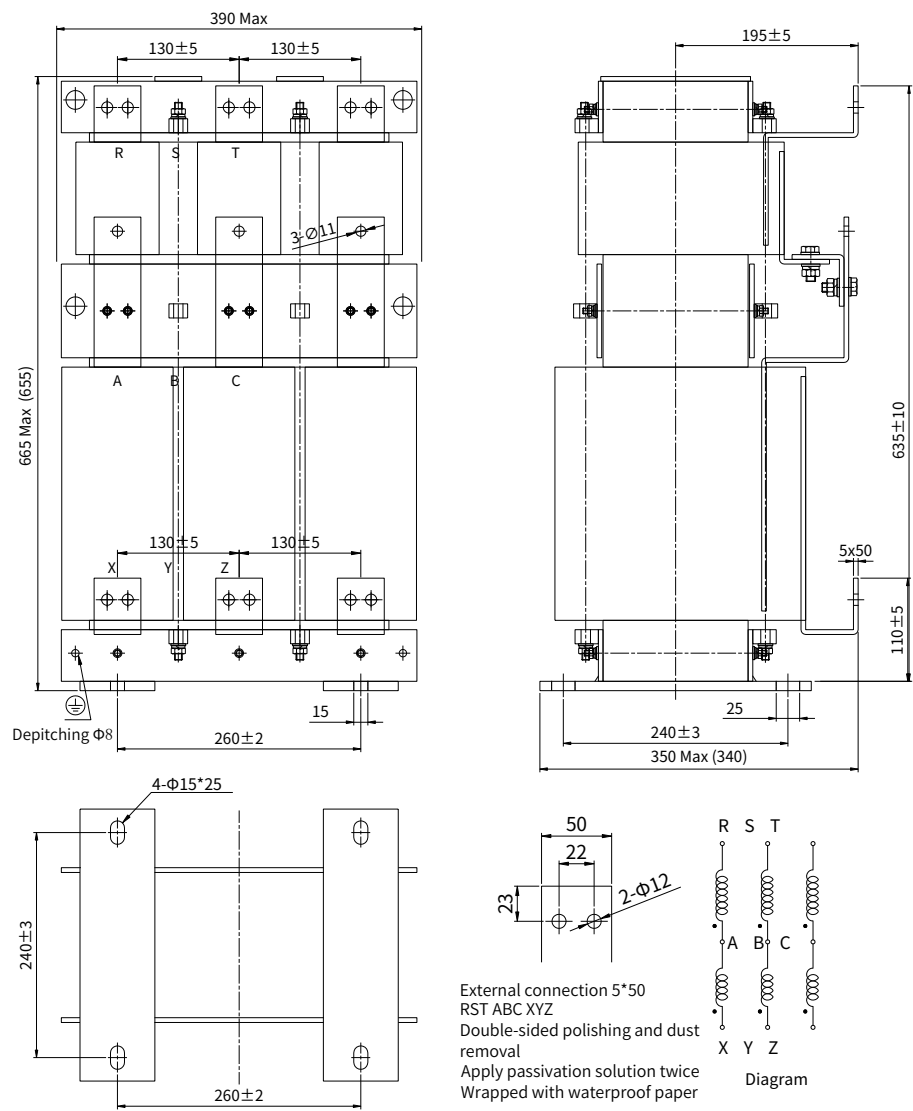
4.2 LCL filtering component dimensions

Figure 4-5 0094-0312 LCL filtering component dimensions (unit: mm)



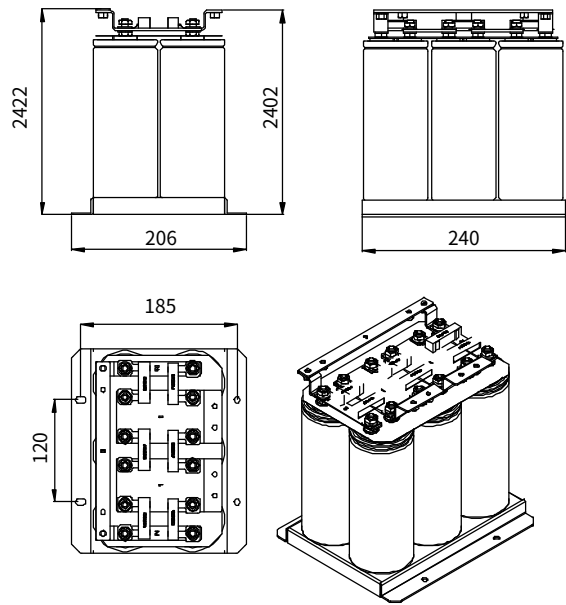
LCL model	Outline dimension (mm)			Installation dimension (mm)				Net weight (kg)	Heat dissipation (kW)
	W	H	D	W1	D1	d1	d2		
LCL-0116-0.4SA-4149-RO	325	560	285	243±1	149±2	4-M12	Ø11	75	0.43
LCL-0180-0.4SA-4149-RO	390	590	330	260±1	174±2	4-M15	Ø13	136	0.51
LCL-0220-0.4SA-4149-RO	630	390	340	260±1	184±2	4-M15	Ø13	146	0.67
LCL-0335-0.4SA-4149-RO	430	725	350	350±1	196±2	4-M15	Ø13	180	1.45

Figure 4-6 0395-0516 reactor component dimensions (unit: mm)



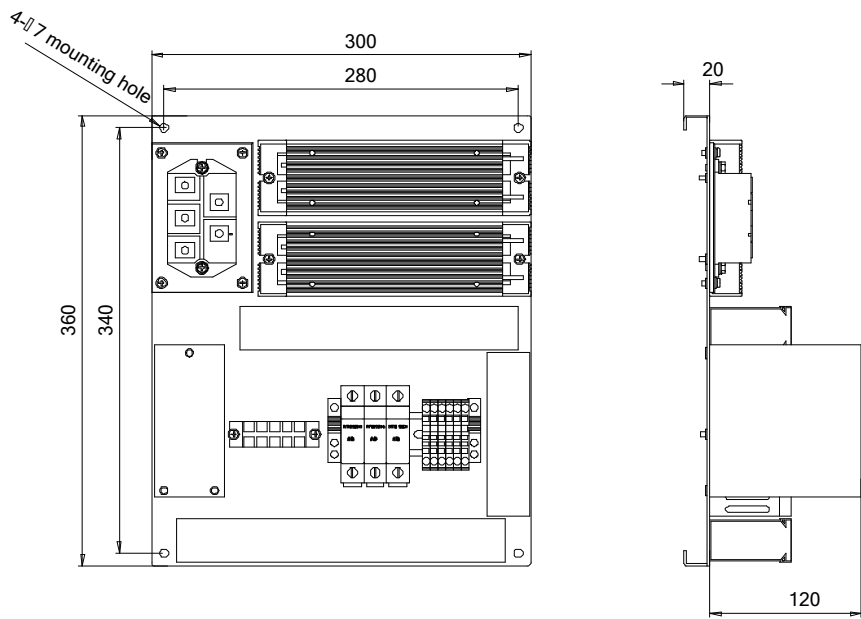
Model of reactor with double L	Outline dimension (mm)			Installation dimension (mm)				Net weight (kg)	Heat dissipation (kW)
	W	H	D	W1	D1	d1	d2		
LCL-380A-00214-2	390	630	340	260±2	184±3	4-M15	Ø13	190	1.62
LCL-516A-01504-2	390	665	350	260±1	240±2	4-M15	2* Ø12	220	1.1

Figure 4-7 0395–0516 capacitor component dimensions (unit: mm)



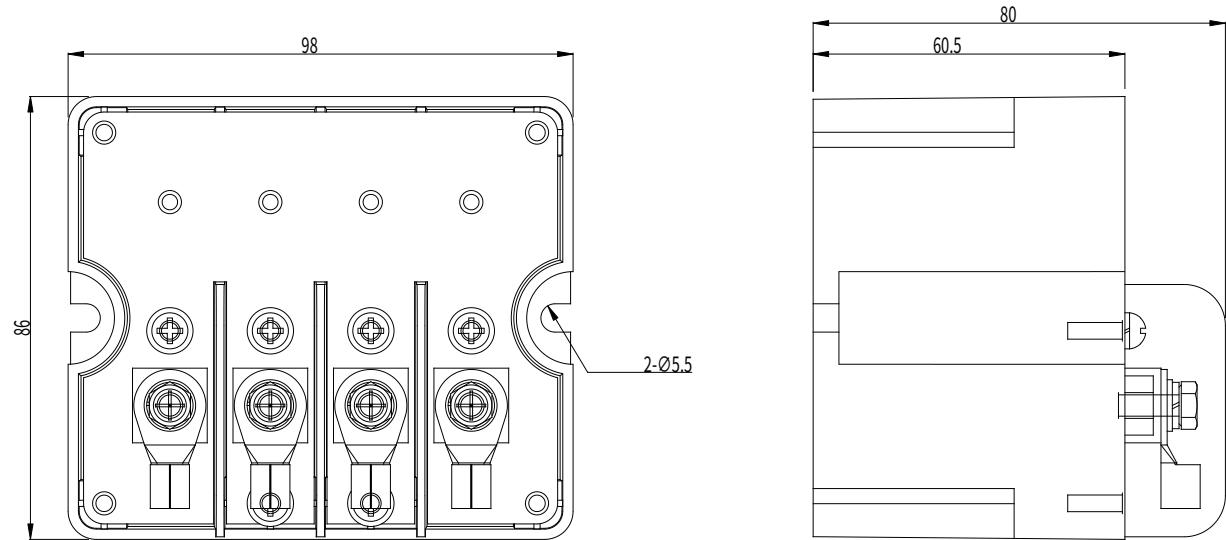
4.3 Buffer component dimensions

Figure 4-8 0094–0516 filtering component dimensions (unit: mm)



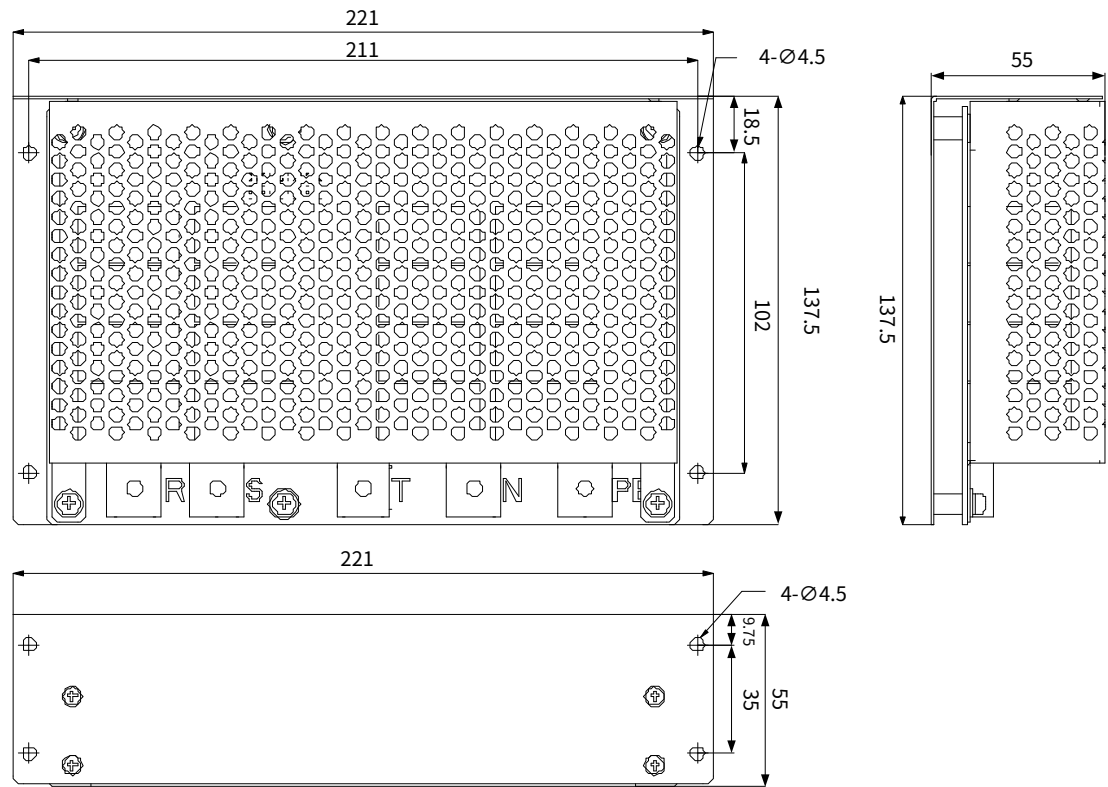
4.4 Lightning protection component dimensions

Figure 4-9 0094-0516 lightning protection component dimensions (unit: mm)



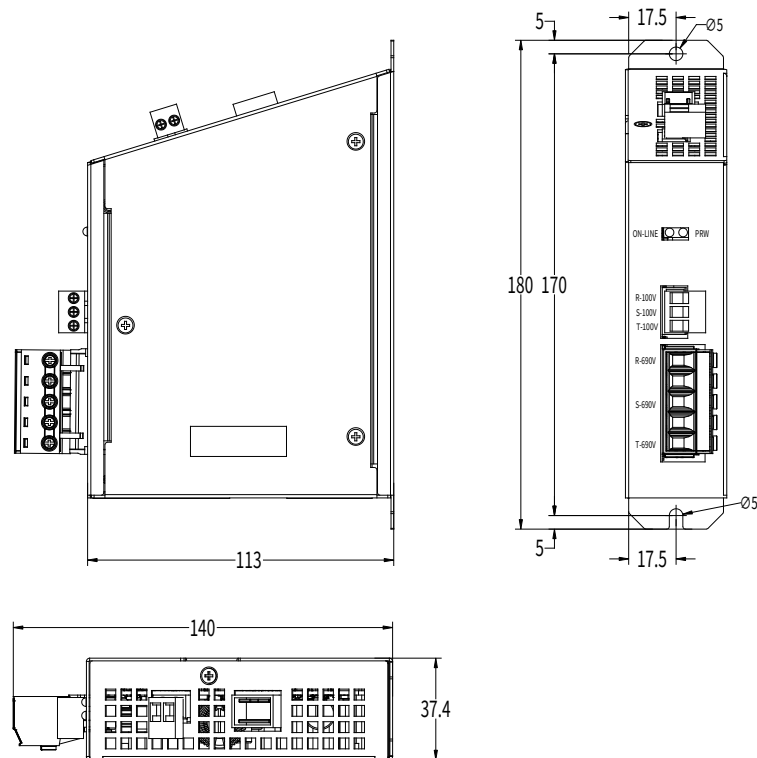
4.5 EMI component dimensions

Figure 4-10 0094-0516 lightning protection component dimensions (unit: mm)



4.6 Voltage detection module

Figure 4-11 Installation dimensions of 0094-0516 AC voltage detection module (unit: mm)



4.7 Installation of the control panel

Figure 4-12 Installation dimensions of 0094-0183 control panel (unit: mm)

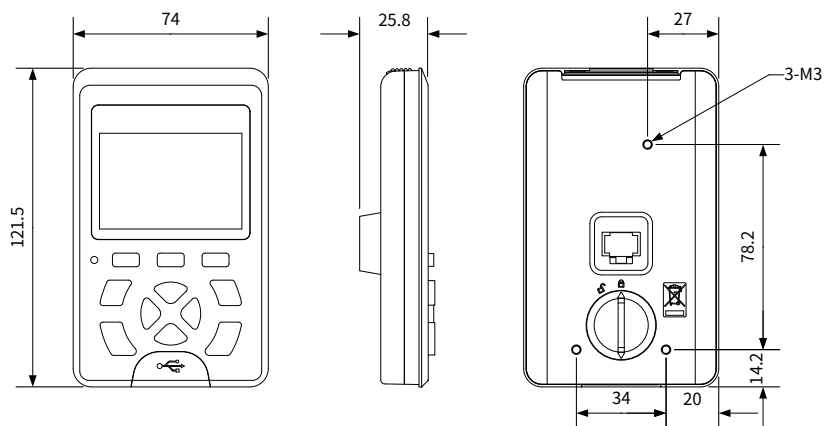
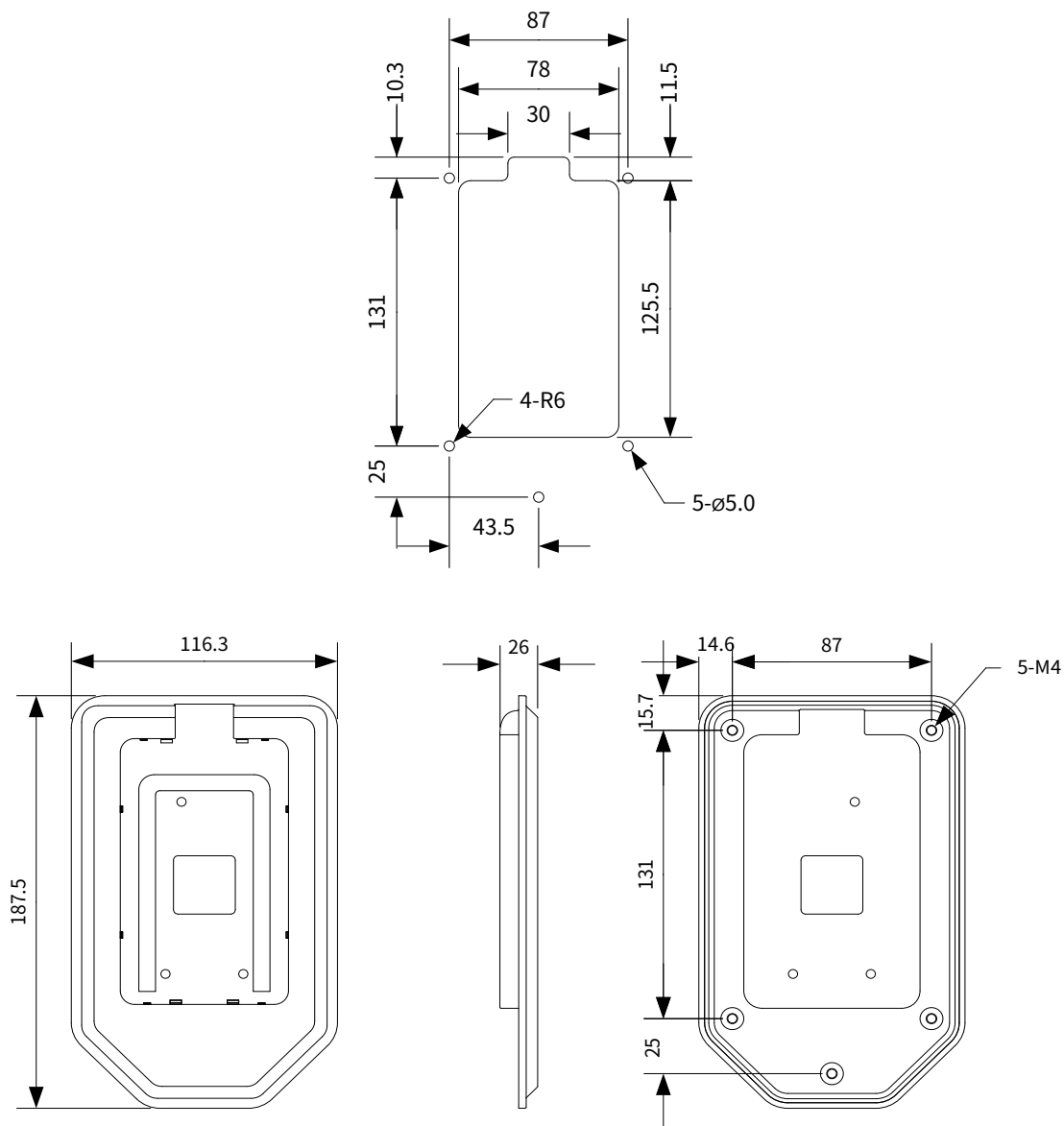


Figure 4-13 External installation dimensions of 0220-0516 control panel (unit: mm)



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