

PLZ-5W SR Specifications

Unless specified otherwise, the specifications are for the following settings and conditions.

- The product is warmed up for at least 30 minutes.
- TYP: These are typical values that are representative of situations where the product operates in an environment with an ambient temperature of 23 °C (73.4 °F). They are not guaranteed performance values.
- set: Indicates a setting.
- range: Indicates the rated value of each range.
- Values indicated by “reading” are readings.

PLZ6005W SR, PLZ10005W SRp. 2

PLZ15005W SR, PLZ20005W SRp. 14

PLZ6005W SR, PLZ10005W SR

Ratings

Item	PLZ6005W SR	PLZ10005W SR
Operating voltage (DC) ^{*1}	1 V to 150 V	
Current	1200 A	2160 A
Power	6.0 kW	10.8 kW
Load input terminal's isolation voltage	±500 V	

*1. The minimum operating voltage at which current starts flowing through the product is 0.3 V. At the load input terminals on the rear panel.

Constant current (CC) mode

Item		PLZ6005W SR	PLZ10005W SR
Operating range	H range	0.00 A to 1200.00 A	0.00 A to 2160.00 A
	M range	0.000 A to 120.000 A	0.000 A to 216.000 A
	L range	0.0000 A to 12.0000 A	0.0000 A to 21.6000 A
Setting range	H range	0.00 A to 1260.00 A	0.00 A to 2268.00 A
	M range	0.000 A to 126.000 A	0.000 A to 226.800 A
	L range	0.0000 A to 12.6000 A	0.0000 A to 22.6800 A
Resolution	H range	0.05 A	
	M range	0.005 A	
	L range	0.0005 A	
Setting accuracy	H range	±(0.2 % of set + 0.3 % of range)	
	M range	±(0.2 % of set + 0.3 % of range)	
	L range	±(0.2 % of set + 1 % of range)	
Input line regulation ^{*1}		120 mA	216 mA
Ripple ^{*2}	rms ^{*3}	120 mA	216 mA
	p-p ^{*4}	1.0 A	1.8 A

*1. When the input voltage is changed from 2 V to 150 V at a current of rated power/150 V.

*2. At 100 A measurement current.

*3. Measurement frequency bandwidth 10 Hz to 1 MHz.

*4. Measurement frequency bandwidth 10 Hz to 20 MHz.

Constant resistance (CR) mode

Item		PLZ6005W SR	PLZ10005W SR
Operating range ^{*1}	H range	1200.00 S to 0.05 S (0.0008 Ω to 20.0000 Ω)	2160.00 S to 0.05 S (0.0005 Ω to 20.0000 Ω)
	M range	120.000 S to 0.005 S (0.008 Ω to 200.000 Ω)	216.000 S to 0.005 S (0.005 Ω to 200.000 Ω)
	L range	12.0000 S to 0.0005 S (0.08 Ω to 2000.00 Ω)	21.6000 S to 0.0005 S (0.05 Ω to 2000.00 Ω)
Setting range	H range	1260.00 S to 0.00 S (0.0008 Ω to OPEN)	2268.00 S to 0.00 S (0.0004 Ω to OPEN)
	M range	126.000 S to 0.000 S (0.008 Ω to OPEN)	226.800 S to 0.000 S (0.004 Ω to OPEN)
	L range	12.6000 S to 0.0000 S (0.08 Ω to OPEN)	22.6800 S to 0.0000 S (0.04 Ω to OPEN)
Resolution	H range	0.05 S	
	M range	0.005 S	
	L range	0.0005 S	
Setting accuracy ^{*2}	H range, M range	$\pm(0.5 \% \text{ of set}^{*3} + 0.5 \% \text{ of range})$	
	L range	$\pm(0.5 \% \text{ of set}^{*3} + 1.5 \% \text{ of range})$	

*1. Conductance [S] = input current [A]/input voltage [V] = 1/resistance [Ω]

*2. Converted value at the input current. At the sensing terminals.

*3. set = V_{in}/R_{set}

Constant voltage (CV) mode

Item		PLZ6005W SR	PLZ10005W SR
Operating range	H range	1.000 V to 150.000 V	
	L range	1.0000 V to 15.0000 V	
Setting range	H range	0.000 V to 157.500 V	
	L range	0.0000 V to 15.7500 V	
Resolution	H range	0.005 V	
	L range	0.0005 V	
Setting accuracy		$\pm(0.1 \% \text{ of set} + 0.1 \% \text{ of range})$	
Input current variation ^{*1}		12 mV	

*1. For a current change in the range of 10 % to 100 % of the rating at an input voltage of 1 V (during remote sensing).

Constant power (CP) mode

Item		PLZ6005W SR	PLZ10005W SR
Operating range	H range	600.0 W to 6000.0 W	1.0800 kW to 10.8000 kW
	M range	60.00 W to 600.00 W	108.00 W to 1080.00 W
	L range	6.000 W to 60.000 W	10.800 W to 108.000 W
Setting range	H range	0.0 W to 6300.0 W	0.0000 kW to 11.3400 kW
	M range	0.00 W to 630.000 W	0.00 W to 1134.00 W
	L range	0.000 W to 63.0000 W	0.000 W to 113.400 W
Resolution	H range	0.2 W	0.0002 kW
	M range	0.02 W	
	L range	0.002 W	
Setting accuracy	H range	$\pm(0.5 \% \text{ of range} + V_{in} \times \text{current range} \times 0.1 \%)$	
	M range	$\pm(0.5 \% \text{ of range} + V_{in} \times \text{current range} \times 0.2 \%)$	
	L range	$\pm(1 \% \text{ of range} + V_{in} \times \text{current range} \times 0.1 \%)$	

Measurement function

Voltmeter

Item		PLZ6005W SR	PLZ10005W SR
Display	H range	0.00 V to 150.00 V	
	L range	0.000 V to 15.000 V	
Accuracy		$\pm(0.1 \% \text{ of reading} + 0.1 \% \text{ of range})$	

Ammeter

Item		PLZ6005W SR	PLZ10005W SR
Display	H range	0.0 A to 1200.0 A	0.0 A to 2160.0 A
	M range	0.00 A to 120.00 A	0.00 A to 216.00 A
	L range	0.000 A to 12.000 A	0.000 A to 21.600 A
Accuracy	H range	$\pm(0.2 \% \text{ of reading} + 0.3 \% \text{ of range})$	
	M range	$\pm(0.2 \% \text{ of reading} + 0.3 \% \text{ of range})$	
	L range	$\pm(0.2 \% \text{ of reading} + 1 \% \text{ of range})$	

Wattmeter

Item		PLZ6005W SR	PLZ10005W SR
Display ^{*1}	Full range	0.000 W to 6000.000 W	0.000 W to 10800.000 W

^{*1}. Displays the product of the voltmeter reading and ammeter reading.

Switching mode

Item		PLZ6005W SR	PLZ10005W SR
Operation mode		CC and CR	
Frequency setting range		1.0 Hz to 100000.0 Hz	
Duty cycle setting		1 % to 99 % ^{*1}	
Frequency setting Resolution	1.0 Hz to 10.0 Hz	0.1 Hz	
	11.0 Hz to 100.0 Hz	1 Hz	
	110.0 Hz to 1000.0 Hz	10 Hz	
	1100.0 Hz to 10000.0 Hz	100 Hz	
	20000.0 Hz to 100000.0 Hz	20000.0 Hz, 50000.0 Hz, 100000.0 Hz	
Frequency setting accuracy		±(0.5 % of set)	
Duty cycle step ^{*1}	1.0 Hz to 10.0 Hz	5.0 % to 95.0 %, 0.1 % steps	
	11.0 Hz to 100.0 Hz		
	110.0 Hz to 1000.0 Hz		
	1100.0 Hz to 10000.0 Hz	5 % to 95 %, 1 % steps	
	20000.0 Hz to 100000.0 Hz	10 % to 90 %, 1 % steps	

*1. The minimum time span is 5 μ s. The minimum duty cycle is limited by the minimum time span.

Slew rate

Item		PLZ6005W SR	PLZ10005W SR
Setting range	H range	0.300 A/ μ s to 300.000 A/ μ s	0.54 A/ μ s to 540.00 A/ μ s
	M range	0.0300 A/ μ s to 30.0000 A/ μ s	0.054 A/ μ s to 54.000 A/ μ s
	L range	0.00300 A/ μ s to 3.00000 A/ μ s	0.0054 A/ μ s to 5.4000 A/ μ s
Resolution	H range	0.005 A/ μ s	0.01 A/ μ s
	M range	0.0005 A/ μ s	0.001 A/ μ s
	L range	0.00005 A/ μ s	0.0001 A/ μ s
Setting accuracy	H range	±(10 % of set + 1.25 μ s)	
	M range	±(10 % of set + 1.25 μ s)	
	L range	±(12 % of set + 5 μ s)	

Soft start

Item		PLZ6005W SR	PLZ10005W SR
Operation mode		CC	
Time setting range		100 μ s, 200 μ s, 500 μ s, 1 ms, 2 ms, 5 ms, 10 ms, 20 ms, or off	
Time setting accuracy		±(30 % of set + 10 μ s)	

Alarm Feature

Alarm 1

Item	PLZ6005W SR	PLZ10005W SR
Overvoltage detection	Turns off the load when a voltage that is 110 % or higher of the range's rating is applied.	
Reverse-connection detection	Turns off the load when a reverse voltage (-0.6 V) is applied to the load input terminals or when a reverse current (approx. -1 % of range rating) flows.	
Overheat detection	Turns off the load when the heatsink temperature reaches 100 °C	
Alarm input detection	Turns off the load when a voltage between 0 V and 1.5 V is applied to ALARM INPUT (pin 10) of the EXT CONT connector.	
Parallel operation anomaly detection	Turns off the load when an anomaly occurs during communication, when the booster's power supply is interrupted, or when the booster's overheat detection is activated	

Alarm 2

Item		PLZ6005W SR	PLZ10005W SR
Overcurrent protection (OCP)	Setting range	A value between 0.0 A to 1320.0 A or 110 % of the maximum current of each range	A value between 0.0 A to 2376.0 A or 110 % of the maximum current of each range
	Resolution	0.1 A	
	Protection operation	Either load off or limitation can be selected	
Overpower protection (OPP)	Setting range	A value between 0 W to 6600 W or 110 % of the maximum power of each range	A value between 0.000 kW to 11.880 kW or 110 % of the maximum power of each range
	Resolution	1 W	0.001 kW
	Protection operation	Either load off or limitation can be selected	
Undervoltage protection (UVP)	Setting range	0.00 V to 150.00 V, or off	
	Resolution	0.01 V	
	Protection operation	Load off	
Watchdog protection (WDP)	Setting range	1 s to 3600 s or off	
	Protection operation	Load off	

Sequence function

Item	PLZ6005W SR	PLZ10005W SR
Operation mode	CC, CR, CV, CP	
Maximum number of programs	30	
Maximum number of steps	10000	
Step execution time	25 µs to 1000 h	
Time resolution	1 µs	

Other functions

Item	PLZ6005W SR	PLZ10005W SR
Possible remote sensing compensation voltage	Approx. 7 V (total potential difference between the input terminals and sensing terminals).	
Mutual synchronized operation	Synchronization of load on/off, measurement, sequence execution, and sequence resumption.	
Elapsed time display	Displays the time from load on to load off.	
Range	1 s to 999 h 59 min 59 s.	
Integrated current display	Displays the integrated current from load on to load off.	
Integrated power display	Displays the integrated power from load on to load off.	
Auto load off timer	Automatically turns off the load after the specified time elapses.	
Setting range	1 s to 3599999 s or off.	

EXT CONT connector

Item	PLZ6005W SR	PLZ10005W SR
Load on/off control input	Logic level switchable. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Range control input	The range can be switched between L, M, and H using a 2 bit signal. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Alarm input	An alarm is activated with a voltage between 0 V and 1.5 V. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Alarm clearing input	After an alarm occurs, eliminate the root cause of the alarm, and change the input to pin 5 of the EXT CONT connector from a low level signal to a high level signal. The alarm will be cleared on the rising edge of this signal. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5.0 V, LOW: 0 V to 1.5 V.	
Trigger input	Paused sequence operation resumes when a voltage between 0 V and 0.8 V is received. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 2 V to 5 V, LOW: 0 V to 0.8 V.	
External voltage control input (CC, CR, CP mode)	Controls the load settings of CC, CR, CP mode through external voltage input. The input impedance is approx. 10 k Ω . CC: The setting can be controlled in the range of 0 % to 100 % of the rated current through external voltage input of 0 V to 10 V. CR: The setting can be controlled in the range of 0 % to 100 % of the conductance setting through external voltage input of 0 V to 10 V. CP: The setting can be controlled in the range of 0 % to 100 % of the rated power through external voltage input of 0 V to 10 V.	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range in CC mode)	
External voltage control input (CV mode)	The load setting of CV mode can be controlled through external voltage input. The rated voltage can be controlled in the range of 0 % to 100 % with 0 V to 10 V. The input impedance is approx. 10 k Ω .	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value)	
External voltage control input (superimposing in CC mode)	Controls the load setting of CC mode by adding current through external voltage input. Adds current in the range of -100 % to 100 % of the rated current for -10 V to 10 V. The input impedance is approx. 10 k Ω .	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range)	
Load-on status output	On when load is on. Open-collector output from a photocoupler.*1	
Range status output	Outputs current range state L, M, and H using 2 bits. Open-collector output from a photocoupler.*1	

Item	PLZ6005W SR	PLZ10005W SR
ALARM 1 output	Turns on when overvoltage detection, reverse-connection detection, overheat detection, alarm input detection, front-panel load input terminal overcurrent detection, or parallel operation anomaly detection is activated. Open-collector output from a photocoupler.*1	
ALARM 2 output	Turns on when OCP, OPP, UVP, or WDP is activated.	
DIGITAL 0 output	Logic signal output during a step of a sequence. Output impedance: approx. 330 Ω , output voltage: 3.3 V _{EMF}	
DIGITAL 1 output		
DIGITAL 2 input/output	Input/output switchable. Output: Logic signal output during a step of a sequence. The output impedance is 330 Ω . Input: Trigger input signal for the sequence and the measurement functions. The thresholds are HIGH: 2 V to 5 V, LOW: 0 V to 0.8 V.	
Current monitor output	Outputs 0 V to 10 V for 0 % to 100 % of the rated current of each range	
Accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range)	
Short contact output.	Relay contact turns on when the short function is turned on (30 Vdc/1 A).	

*1. The maximum voltage that can be applied to the photocoupler is 30 V. The maximum current is 4 mA.

BNC connector

Item	PLZ6005W SR	PLZ10005W SR
Trigger output	Transmits 10 μ s pulses during step execution when trigger output is set in a sequence. Transmits 1 μ s pulses during switching operation. Output impedance 200 Ω , output voltage: approx. 5 V _{EMF}	
Current monitor output	Outputs 0 V to 2 V for 0 % to 100 % of the rated current of each range.	
Accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range)	
Isolation voltage	$\pm 30 \text{ V}$	

Communication function

Item	PLZ6005W SR	PLZ10005W SR
RS232C	Hardware	D-SUB 9-pin connector. Baud rate: 9600, 19200, 38400, 115200 bps. Data length: 8 bits, Stop bits: 1 bit, Parity bits: none, Flow control: None/CTS-RTS
	Message terminator	LF during reception, LF during transmission.
USB (device)	Hardware	Standard type B socket. Complies with the USB 2.0 specification. Data rate: 480 Mbps (High Speed).
	Message terminator	LF or EOM during reception, LF + EOM during transmission.
	Device class	Complies with the USBTMC-USB488 device class specifications.
USB (host)	Hardware	Standard type A socket. Complies with the USB 2.0 specification. Data rate: 12 Mbps (Full speed).
LAN	Hardware	IEEE 802.3 100Base-TX/10Base-T Ethernet Auto-MDIX support. IPv4, RJ-45 connector.
	Compliant standards	LXI 1.4 Core Specification 2011
	Communication protocol	VXI-11, HiSLIP, SCPI-RAW, SCPI-Telnet
	Message terminator	VXI-11, HiSLIP: LF or END during reception, LF + END during transmission. SCPI-RAW: LF during reception, LF during transmission.

General specifications

Item		PLZ6005W SR	PLZ10005W SR
Input voltage range		100 Vac to 240 Vac (90 Vac to 250 Vac) single phase, continuous	
Input frequency range		47 Hz to 63 Hz	
Power consumption		275 VAm _{ax}	465 VAm _{ax}
Inrush current		45 A _{max}	
Operating temperature range		0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity range		20 %rh to 85 rh (no condensation)	
Storage temperature range:		-20 °C to 70 °C (-4 °F to 158 °F)	
Storage humidity range:		90 %rh or less (no condensation)	
Insulation resistance	Between primary and input terminals	500 Vdc, 30 MΩ or greater (at 70 %rh humidity or less)	
	Between primary and chassis		
	between input terminals and chassis		
Withstand-ing voltage	Between primary and input terminals	No abnormalities at 1500 Vac for 1 minute	
	Between primary and chassis	No abnormalities at 1500 Vac for 1 minute	
	between input terminals and chassis	No abnormalities at 750 Vac for 1 minute	
Dimensions		See p. 10 .	See p. 11 .
Weight		Approx. 82 kg (181 lbs)	Approx. 120 kg (265 lbs)
Battery backup		Backs up settings	
Accessories	Power cord	1 pc.	
	Load input terminal screw set	8 set	
	External control connector kit	1 set	
	Heavy object warn-ing label	1 pc.	
	CD-ROM	1 pc.	
	Manuals	Setup Guide (1 pc.), Quick Reference (English/Japanese, 1 sheet each) Safety Information (1 pc.)	
Safety		Complies with the requirements of the following standard. IEC 61010-1: 2010 (Class I ^{*1} , Pollution Degree 2 ^{*2})	

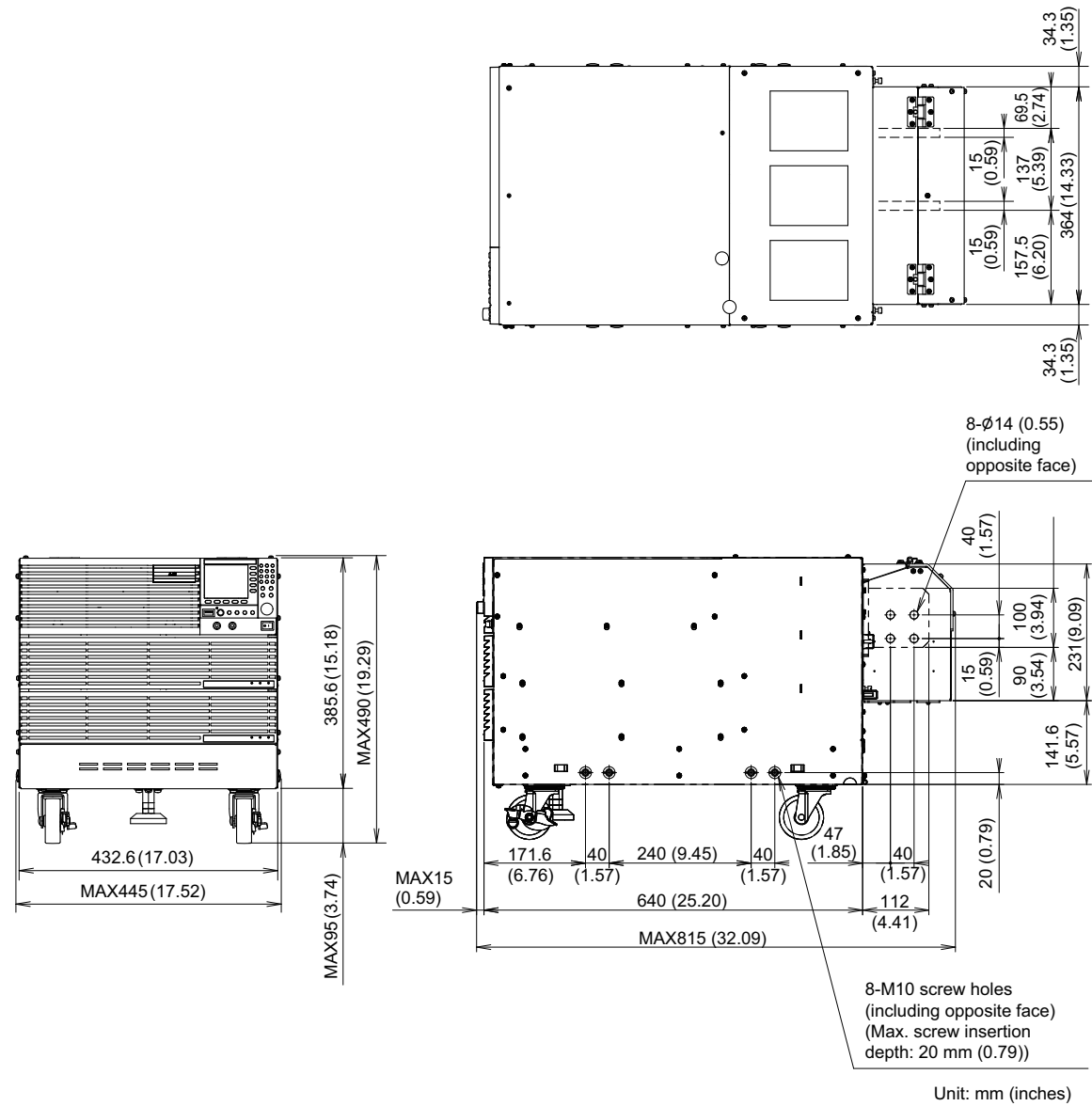
*1. This product conforms to Class I. Be sure to ground the protective conductor terminal of this product. If not grounded properly, safety is not guaranteed.

*2. Pollution is addition of foreign matter (solid, liquid or gaseous) that may produce a reduction of dielectric strength or surface resistivity. Pollution Degree 2 assumes that only non-conductive pollution will occur except for an occasional temporary conductivity caused by condensation.

External dimensions

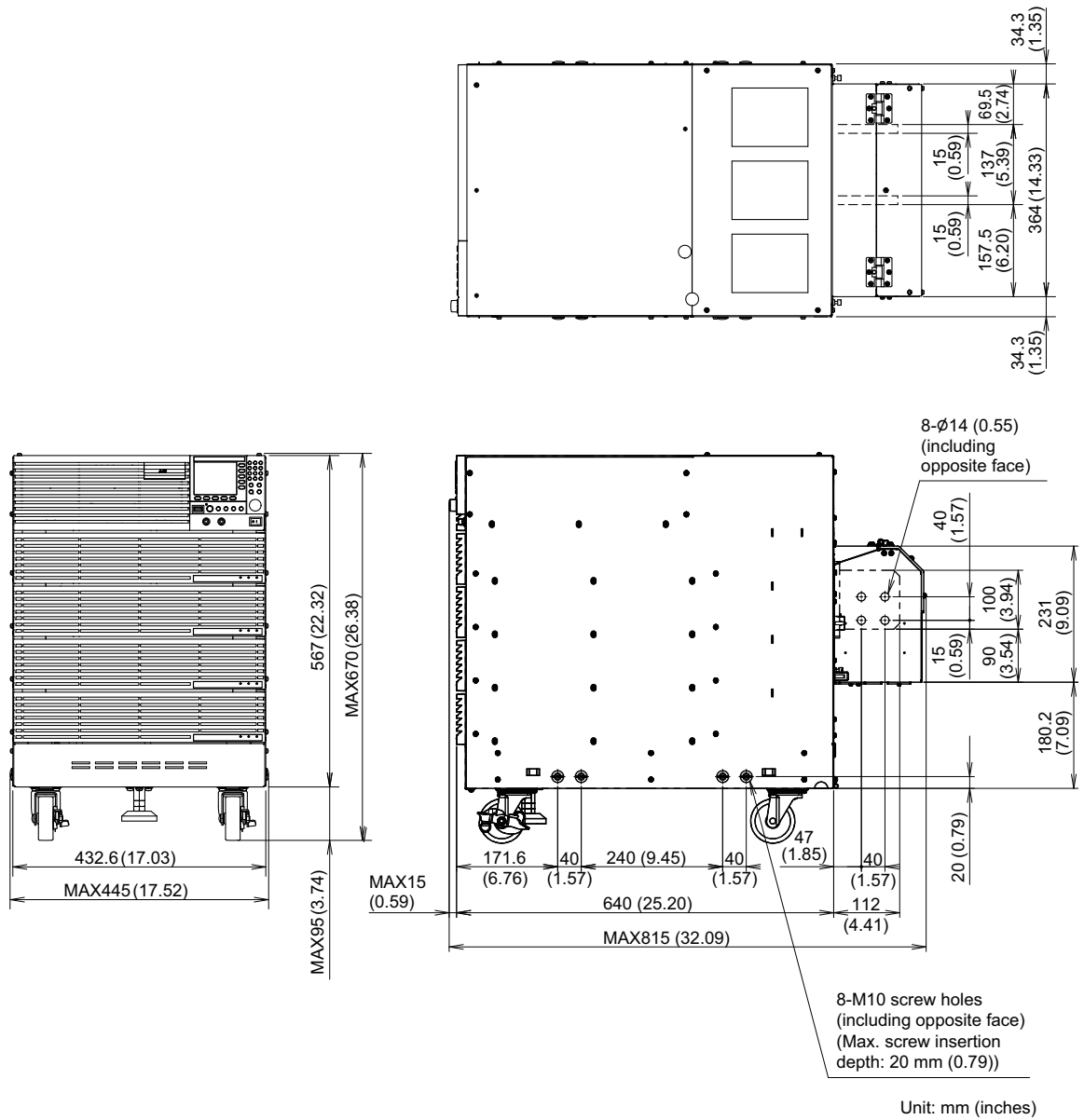
PLZ6005W SR

If you use a model on which handles are implemented, refer to "PLZ6005W SR (With handle)" (p.12).



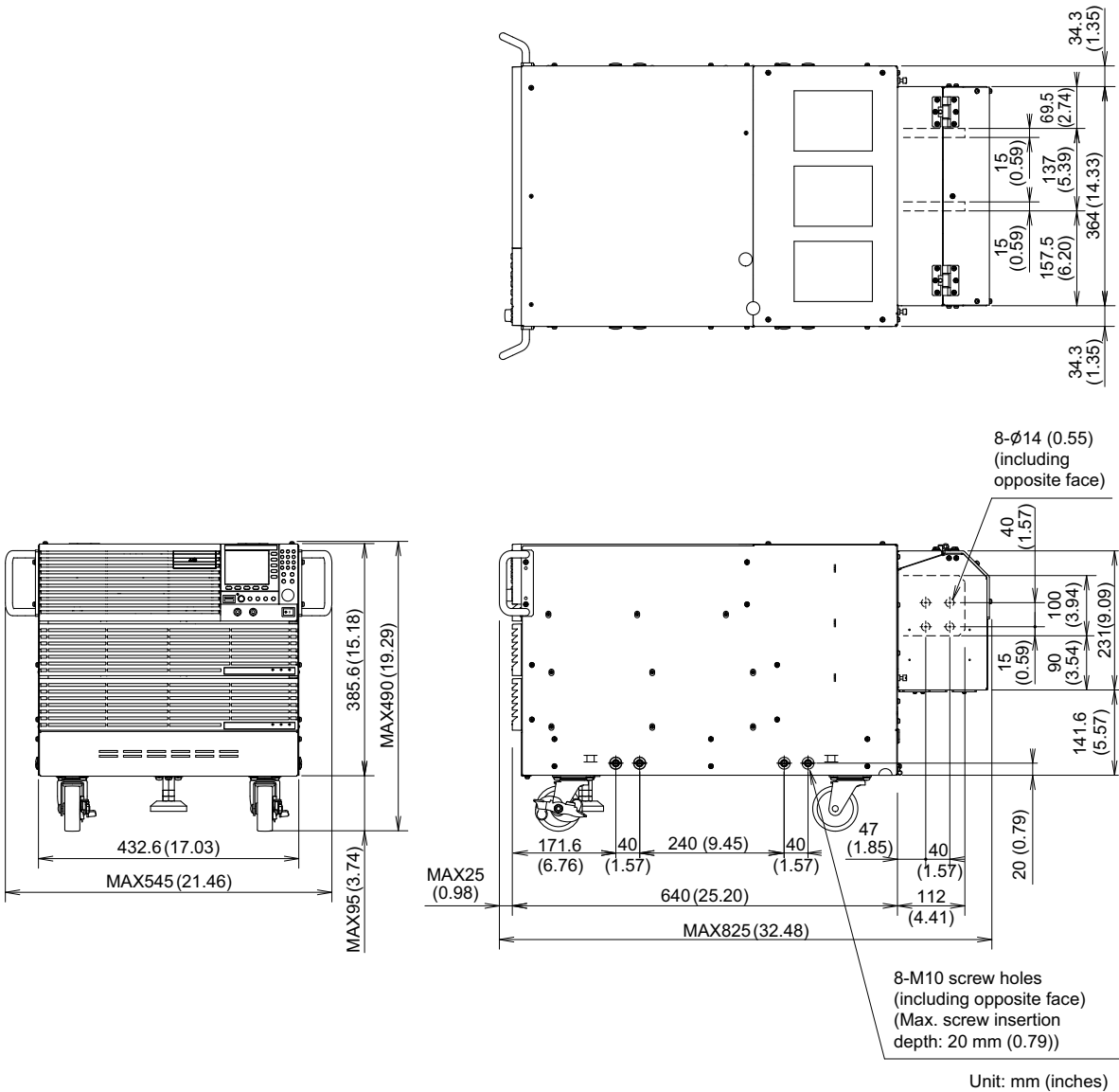
PLZ10005W SR

If you use a model on which handles are implemented, refer to "PLZ10005W SR (With handle)" (p.13).



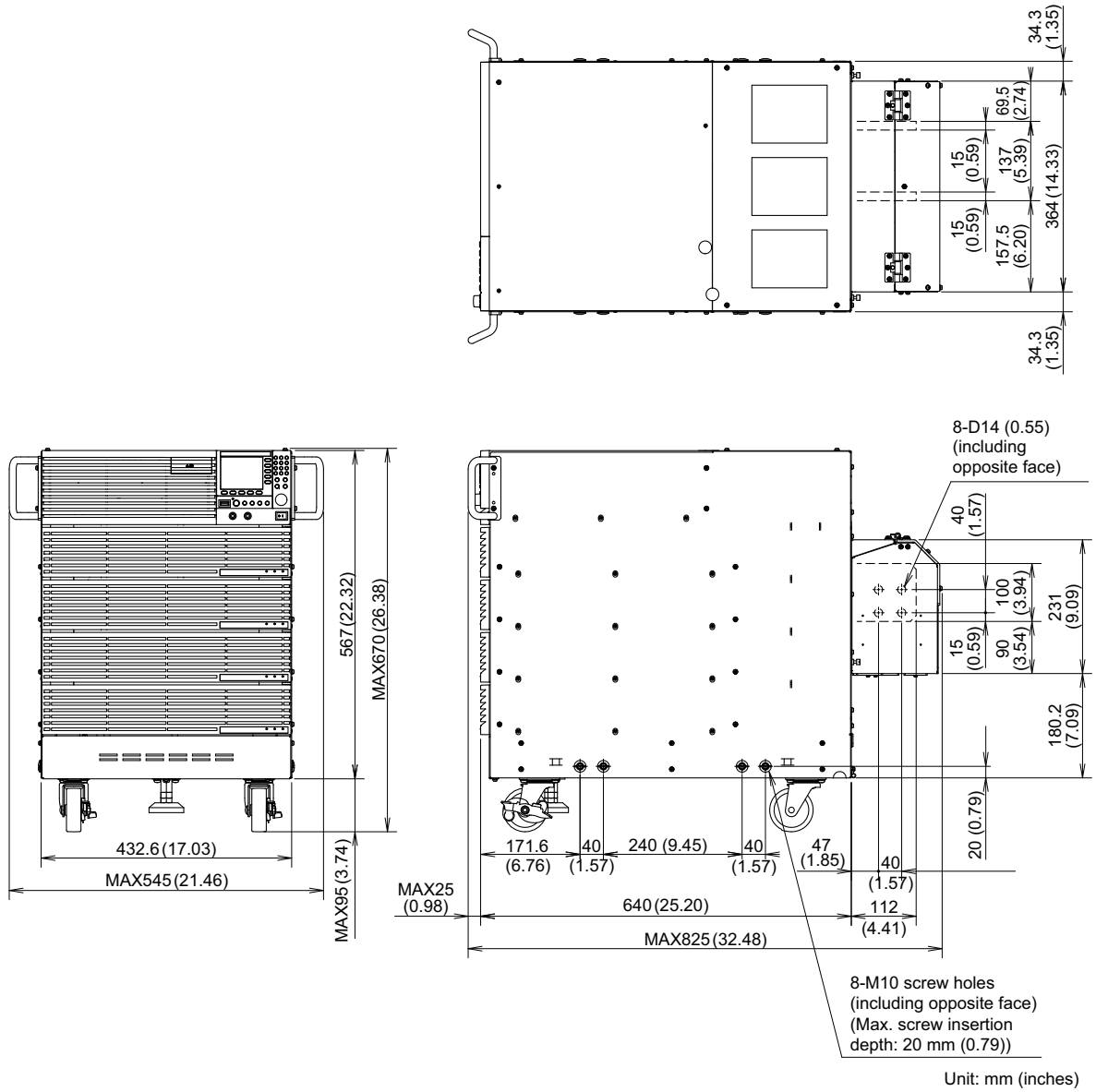
PLZ6005W SR (With handle)

Handles are implemented on some older models. If you use a model on which handles are not implemented, refer to "PLZ6005W SR" (p.10).



PLZ10005W SR (With handle)

Handles are implemented on some older models. If you use a model on which handles are not implemented, refer to "PLZ10005W SR" (p.11).



PLZ15005W SR, PLZ20005W SR

Ratings

Item	PLZ15005W SR	PLZ20005W SR
Operating voltage (DC)	1 V to 150 V	
Current	2160 A (MAX 3120 A ^{*1})	2160 A (MAX 4080 A ^{*1})
Power	15.6 kW	20.4 kW

*1. The PLZ15005W SR can receive up to 3120 A, and the PLZ20005W SR up to 4080 A. However, if the load input terminal temperature reaches 100 °C or the internal bus bar reaches 80 °C, the protection function is activated, and the load is turned off. Conditions vary depending on the ambient temperature, used power, and the load cable shape, but if you are running electricity for 30 minutes or more, set the current to 2160 A or less for use.

Constant current (CC) mode

Item		PLZ15005W SR	PLZ20005W SR
Operating range	H range ^{*1}	0.0 A to 3120.0 A	0.0 A to 4080.0 A
	M range	0.00 A to 312.00 A	0.00 A to 408.00 A
	L range	0.000 A to 31.200 A	0.000 A to 40.800 A
Setting range	H range	0.0 A to 3276.0 A	0.0 A to 4284.0 A
	M range	0.00 A to 327.60 A	0.00 A to 428.40 A
	L range	0.000 A to 32.760 A	0.000 A to 42.840 A
Resolution	H range	0.1 A	
	M range	0.01 A	
	L range	0.001 A	
Setting accuracy	H range	±(0.2 % of set + 0.3 % of range)	
	M range	±(0.2 % of set + 0.3 % of range)	
	L range	±(0.2 % of set + 1 % of range)	
Input line regulation ^{*2}		312 mA	408 mA
Ripple ^{*3}	rms ^{*4}	312 mA	408 mA
	p-p ^{*5}	2.6 A	3.4 A

*1. Conditions vary depending on the ambient temperature, used power, and the load cable shape, but if you are running electricity for 30 minutes or more, set the current to 2160 A or less for use.

*2. When the input voltage is changed from 2 V to 150 V at a current of rated power/150 V.

*3. At 100 A measurement current.

*4. Measurement frequency bandwidth 10 Hz to 1 MHz.

*5. Measurement frequency bandwidth 10 Hz to 20 MHz.

Constant resistance (CR) mode

Item		PLZ15005W SR	PLZ20005W SR
Operating range ^{*1}	H range ^{*2}	3120.0 S to 0.1 S (0.00032 Ω to 10.00000 Ω)	4080.0 S to 0.1 S (0.00025 Ω to 10.00000 Ω)
	M range	312.00 S to 0.01 S (0.0032 Ω to 100.0000 Ω)	408.00 S to 0.01 S (0.0025 Ω to 100.0000 Ω)
	L range	31.200 S to 0.001 S (0.032 Ω to 1000.000 Ω)	40.800 S to 0.001 S (0.025 Ω to 1000.000 Ω)
Setting range	H range	3276.0 S to 0.0 S (0.00031 Ω to OPEN)	4284.0 S to 0.0 S (0.00023 Ω to OPEN)
	M range	327.60 S to 0.00 S (0.0031 Ω to OPEN)	428.40 S to 0.00 S (0.0023 Ω to OPEN)
	L range	32.760 S to 0.000 S (0.031 Ω to OPEN)	42.840 S to 0.000 S (0.023 Ω to OPEN)
Resolution	H range	0.1 S	0.1 S
	M range	0.01 S	0.01 S
	L range	0.001 S	0.001 S
Setting accuracy ^{*3}	H range	$\pm(0.5\% \text{ of set}^{*4} + 0.5\% \text{ of range})$	
	M range	$\pm(0.5\% \text{ of set}^{*3} + 0.5\% \text{ of range})$	
	L range	$\pm(0.5\% \text{ of set}^{*3} + 1.5\% \text{ of range})$	

*1. Conductance [S] = input current [A]/input voltage [V] = 1/resistance [Ω]

*2. Set the OCP to 2160 A or less for use.

*3. Converted value at the input current. At the sensing terminals.

*4. set = V_{in}/R_{set}

Constant voltage (CV) mode

Item		PLZ15005W SR	PLZ20005W SR
Operating range ^{*1}	H range	1.000 V to 150.000 V	
	L range	1.0000 V to 15.0000 V	
Setting range	H range	0.000 V to 157.500 V	
	L range	0.0000 V to 15.7500 V	
Resolution	H range	0.005 V	
	L range	0.0005 V	
Setting accuracy		$\pm(0.1\% \text{ of set} + 0.1\% \text{ of range})$	
Input current variation ^{*2}		12 mV	

*1. Set the OCP to 2160 A or less for use.

*2. For a current change in the range of 10 % to 100 % of the rating at an input voltage of 1 V (during remote sensing).

Constant power (CP) mode

Item		PLZ15005W SR	PLZ20005W SR
Operating range	H range*1	1.5600 kW to 15.6000 kW	2.0400 kW to 20.4000 kW
	M range	156.00 W to 1560.00 W	204.00 W to 2040.00 W
	L range	15.600 W to 156.000 W	20.400 W to 204.000 W
Setting range	H range	0.0000 kW to 16.3800 kW	0.0000 kW to 21.4200 kW
	M range	0.00 W to 1638.00 W	0.00 W to 2142.00 W
	L range	0.000 W to 163.800 W	0.000 W to 214.200 W
Resolution	H range	0.0005 kW	
	M range	0.05 W	
	L range	0.005 W	
Setting accuracy	H range	$\pm(0.5 \% \text{ of range} + V_{in} \times \text{current range} \times 0.1 \%)$	
	M range	$\pm(0.5 \% \text{ of range} + V_{in} \times \text{current range} \times 0.2 \%)$	
	L range	$\pm(1 \% \text{ of range} + V_{in} \times \text{current range} \times 0.1 \%)$	

*1. Set the OCP to 2160 A or less for use.

Measurement function

Voltmeter

Item		PLZ15005W SR	PLZ20005W SR
Display	H range	0.00 V to 150.00 V	
	L range	0.000 V to 15.000 V	
Accuracy		$\pm(0.1 \% \text{ of reading} + 0.1 \% \text{ of range})$	

Ammeter

Item		PLZ15005W SR	PLZ20005W SR
Display	H range	0.0 A to 3120.0 A	0.0 A to 4080.0 A
	M range	0.00 A to 312.00 A	0.00 A to 408.00 A
	L range	0.000 A to 31.200 A	0.000 A to 40.800 A
Accuracy	H range	$\pm(0.2 \% \text{ of reading} + 0.3 \% \text{ of range})$	
	M range	$\pm(0.2 \% \text{ of reading} + 0.3 \% \text{ of range})$	
	L range	$\pm(0.2 \% \text{ of reading} + 1 \% \text{ of range})$	

Wattmeter

Item		PLZ15005W SR	PLZ20005W SR
Display*1	Full range	0.000 W to 15600.000 W	0.000 W to 20400.000 W

*1. Displays the product of the voltmeter reading and ammeter reading.

Switching mode

Item		PLZ15005W SR	PLZ20005W SR
Operation mode		CC and CR	
Frequency setting range		1.0 Hz to 100000.0 Hz	
Duty cycle setting range		1 % to 99 % ^{*1}	
Frequency setting Resolution	1.0 Hz to 10.0 Hz	0.1 Hz	
	11.0 Hz to 100.0 Hz	1 Hz	
	110.0 Hz to 1000.0 Hz	10 Hz	
	1100.0 Hz to 10000.0 Hz	100 Hz	
	20000.0 Hz to 100000.0 Hz	20000.0 Hz, 50000.0 Hz, 100000.0 Hz	
Frequency setting accuracy		±(0.5 % of set)	
Duty cycle step ^{*1}	1.0 Hz to 10.0 Hz	5.0 % to 95.0 %, 0.1 % steps	
	11.0 Hz to 100.0 Hz		
	110.0 Hz to 1000.0 Hz		
	1100.0 Hz to 10000.0 Hz	5 % to 95 %, 1 % steps	
	20000.0 Hz to 100000.0 Hz	10 % to 90 %, 1 % steps	

*1. The minimum time span is 5 μ s. The minimum duty cycle is limited by the minimum time span.

Slew rate

Item		PLZ15005W SR	PLZ20005W SR
Setting range	H range	0.78 A/ μ s to 780.00 A/ μ s	1.02 A/ μ s to 1020.00 A/ μ s
	M range	0.078 A/ μ s to 78.000 A/ μ s	0.102 A/ μ s to 102.000 A/ μ s
	L range	0.0078 A/ μ s to 7.8000 A/ μ s	0.0102 A/ μ s to 10.2000 A/ μ s
Resolution	H range	0.02 A/ μ s	
	M range	0.002 A/ μ s	
	L range	0.0002 A/ μ s	
Setting accuracy	H range	±(10 % of set + 1.25 μ s)	
	M range	±(10 % of set + 1.25 μ s)	
	L range	±(12 % of set + 5 μ s)	

Soft start

Item		PLZ15005W SR	PLZ20005W SR
Operation mode		CC	
Time setting range		100 μ s, 200 μ s, 500 μ s, 1 ms, 2 ms, 5 ms, 10 ms, 20 ms, or off	
Time setting accuracy		±(30 % of set + 10 μ s)	

Alarm Feature

Alarm 1

Item	PLZ15005W SR	PLZ20005W SR
Overvoltage detection	Turns off the load when a voltage that is 110 % or higher of the range's rating is applied.	
Reverse-connection detection	Turns off the load when a reverse voltage (-0.6 V) is applied to the load input terminals or when a reverse current (approx. -1 % of range rating) flows.	
Overheat detection	Turns off the load when the heatsink temperature reaches 100 °C Turns off the load when the internal bus bar reaches 80 °C. Turns off the load when the load input terminal reaches 100 °C.	
Alarm input detection	Turns off the load when a voltage between 0 V and 1.5 V is applied to ALARM INPUT (pin 10) of the EXT CONT connector.	
Parallel operation anomaly detection	Turns off the load when an anomaly occurs during communication, when the booster's power supply is interrupted, or when the booster's overheat detection is activated	

Alarm 2

Item		PLZ15005W SR	PLZ20005W SR
Overcurrent protection (OCP)*1	Setting range	A value between 0 A to 3432 A or 110 % of the maximum current of each range	A value between 0 A to 4480 A or 110 % of the maximum current of each range
	Resolution	1 A	
	Protection operation	Either load off or limitation can be selected	
Overpower protection (OPP)	Setting range	A value between 0.000 kW to 17.160 kW or 110 % of the maximum power of each range	A value between 0.000 kW to 22.440 kW or 110 % of the maximum power of each range
	Resolution	0.001 kW	
	Protection operation	Either load off or limitation can be selected	
Undervoltage protection (UVP)	Setting range	0.00 V to 150.00 V, or off	
	Resolution	0.01 V	
	Protection operation	Load off	
Watchdog protection (WDP)	Setting range	1 s to 3600 s or off	
	Protection operation	Load off	

*1. Set the OCP to 2160 A or less for use.

Sequence function

Item	PLZ15005W SR	PLZ20005W SR
Operation mode	CC, CR, CV, CP	
Maximum number of programs	30	
Maximum number of steps	10000	
Step execution time	25 μs to 1000 h	
Time resolution	1 μs	

Other functions

Item	PLZ15005W SR	PLZ20005W SR
Possible remote sensing compensation voltage	Approx. 7 V (total potential difference between the input terminals and sensing terminals).	
Mutual synchronized operation	Synchronization of load on/off, measurement, sequence execution, and sequence resumption.	
Elapsed time display	Displays the time from load on to load off.	
Range	1 s to 999 h 59 min 59 s	
Integrated current display	Displays the integrated current from load on to load off.	
Integrated power display	Displays the integrated power from load on to load off.	
Auto load off timer	Automatically turns off the load after the specified time elapses.	
Setting range	1 s to 3599999 s or off.	

EXT CONT connector

Item	PLZ15005W SR	PLZ20005W SR
Load on/off control input	Logic level switchable. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Range control input	The range can be switched between L, M, and H using a 2 bit signal. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Alarm input	An alarm is activated with a voltage between 0 V and 1.5 V. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5 V, LOW: 0 V to 1.5 V.	
Alarm clearing input	After an alarm occurs, eliminate the root cause of the alarm, and change the input to pin 5 of the EXT CONT connector from a low level signal to a high level signal. The alarm will be cleared on the rising edge of this signal. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 3.5 V to 5.0 V, LOW: 0 V to 1.5 V.	
Trigger input	Paused sequence operation resumes when a voltage between 0 V and 0.8 V is received. Pulled up to 5 V by a 10 k Ω resistor. The thresholds are HIGH: 2 V to 5 V, LOW: 0 V to 0.8 V.	
External voltage control input (CC, CR, CP mode)* ¹	Controls the load settings of CC, CR, CP mode through external voltage input. The input impedance is approx. 10 k Ω . CC: The setting can be controlled in the range of 0 % to 100 % of the rated current through external voltage input of 0 V to 10 V. CR: The setting can be controlled in the range of 0 % to 100 % of the conductance setting through external voltage input of 0 V to 10 V. CP: The setting can be controlled in the range of 0 % to 100 % of the rated power through external voltage input of 0 V to 10 V.	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range in CC mode)	
External voltage control input (CV mode)	The load setting of CV mode can be controlled through external voltage input. The rated voltage can be controlled in the range of 0 % to 100 % with 0 V to 10 V. The input impedance is approx. 10 k Ω .	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value)	
External voltage control input (superimposing in CC mode)	Controls the load setting of CC mode by adding current through external voltage input. Adds current in the range of -100 % to 100 % of the rated current for -10 V to 10 V. The input impedance is approx. 10 k Ω .	
Setting accuracy	$\pm(1 \text{ \% of range})$ (TYP value of H range)	
Load-on status output	On when load is on. Open-collector output from a photocoupler.* ²	
Range status output	Outputs current range state L, M, and H using 2 bits. Open-collector output from a photocoupler.* ²	

Item	PLZ15005W SR	PLZ20005W SR
ALARM 1 output	Turns on when overvoltage detection, reverse-connection detection, overheat detection, alarm input detection, front-panel load input terminal overcurrent detection, or parallel operation anomaly detection is activated. Open-collector output from a photocoupler.*2	
ALARM 2 output	Turns on when OCP, OPP, UVP, or WDP is activated.	
DIGITAL 0 output	Logic signal output during a step of a sequence. Output impedance: approx. 330 Ω , output voltage: 3.3 V _{EMF}	
DIGITAL 1 output		
DIGITAL 2 input/output	Input/output switchable. Output: Logic signal output during a step of a sequence. The output impedance is 330 Ω . Input: Trigger input signal for the sequence and the measurement functions. The thresholds are HIGH: 2 V to 5 V, LOW: 0 V to 0.8 V.	
Current monitor output	Outputs 0 V to 10 V for 0 % to 100 % of the rated current of each range	
Accuracy	$\pm(1 \text{ % of range})$ (TYP value of H range)	
Short contact output.	Relay contact turns on when the short function is turned on (30 Vdc/1 A).	

*1. In CC mode, set the load value to 2160 A or less for use.

*2. The maximum voltage that can be applied to the photocoupler is 30 V. The maximum current is 4 mA.

BNC connector

Item	PLZ15005W SR	PLZ20005W SR
Trigger output	Transmits 10 μ s pulses during step execution when trigger output is set in a sequence. Transmits 1 μ s pulses during switching operation. Output impedance 200 Ω , output voltage: approx. 5 V _{EMF}	
Current monitor output	Outputs 0 V to 2 V for 0 % to 100 % of the rated current of each range.	
Accuracy	$\pm(1 \text{ % of range})$ (TYP value of H range)	
Isolation voltage	$\pm 30 \text{ V}$	

Communication function

Item	PLZ15005W SR	PLZ20005W SR
RS232C	Hardware	D-SUB 9-pin connector. Baud rate: 9600, 19200, 38400, 115200 bps. Data length: 8 bits, Stop bits: 1 bit, Parity bits: none, Flow control: None/CTS-RTS
	Message terminator	LF during reception, LF during transmission.
USB (device)	Hardware	Standard type B socket. Complies with the USB 2.0 specification. Data rate: 480 Mbps (High Speed).
	Message terminator	LF or EOM during reception, LF + EOM during transmission.
	Device class	Complies with the USBTMC-USB488 device class specifications.
USB (host)	Hardware	Standard type A socket. Complies with the USB 2.0 specifications. Data rate: 12 Mbps (Full speed).
LAN	Hardware	IEEE 802.3 100Base-TX/10Base-T Ethernet Auto-MDIX support. IPv4, RJ-45 connector.
	Compliant standards	LXI 1.4 Core Specification 2011
	Communication protocol	VXI-11, HiSLIP, SCPI-RAW, SCPI-Telnet
	Message terminator	VXI-11, HiSLIP: LF or END during reception, LF + END during transmission. SCPI-RAW: LF during reception, LF during transmission.

General specifications

Item		PLZ15005W SR	PLZ20005W SR
Input voltage range		100 Vac to 240 Vac (90 Vac to 250 Vac) single phase, continuous	
Input frequency range		47 Hz to 63 Hz	
Power consumption		655 VAmax	845 VAmax
Inrush current		45 Amax	
Operating temperature range		0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity range		20 %rh to 85 rh (no condensation)	
Storage temperature range:		-20 °C to 70 °C (-4 °F to 158 °F)	
Storage humidity range:		90 %rh or less (no condensation)	
Insulation resistance	Between primary and input terminals	500 Vdc, 30 MΩ or greater (at 70 %rh humidity or less)	
	Between primary and chassis		
	between input terminals and chassis		
Withstand-ing voltage	Between primary and input terminals	No abnormalities at 1500 Vac for 1 minute	
	Between primary and chassis	No abnormalities at 1500 Vac for 1 minute	
	between input terminals and chassis	No abnormalities at 750 Vac for 1 minute	
Dimensions		See p. 22 .	See p. 23 .
Weight		Approx. 160 kg (353 lbs)	Approx. 200 kg (441 lbs)
Battery backup		Backs up settings	
Accesso-ries	Power cord	1 pc.	
	Load input terminal screw set	8 set	
	External control connector kit	1 set	
	Heavy object warn-ing label	1 pc.	
	CD-ROM	1 pc.	
	Manuals	Setup Guide (1 pc.), Quick Reference (English/Japanese, 1 sheet each) Safety Information (1 pc.)	
Safety		Complies with the requirements of the following standard. IEC 61010-1: 2010 (Class I ^{*1} , Pollution Degree 2 ^{*2})	

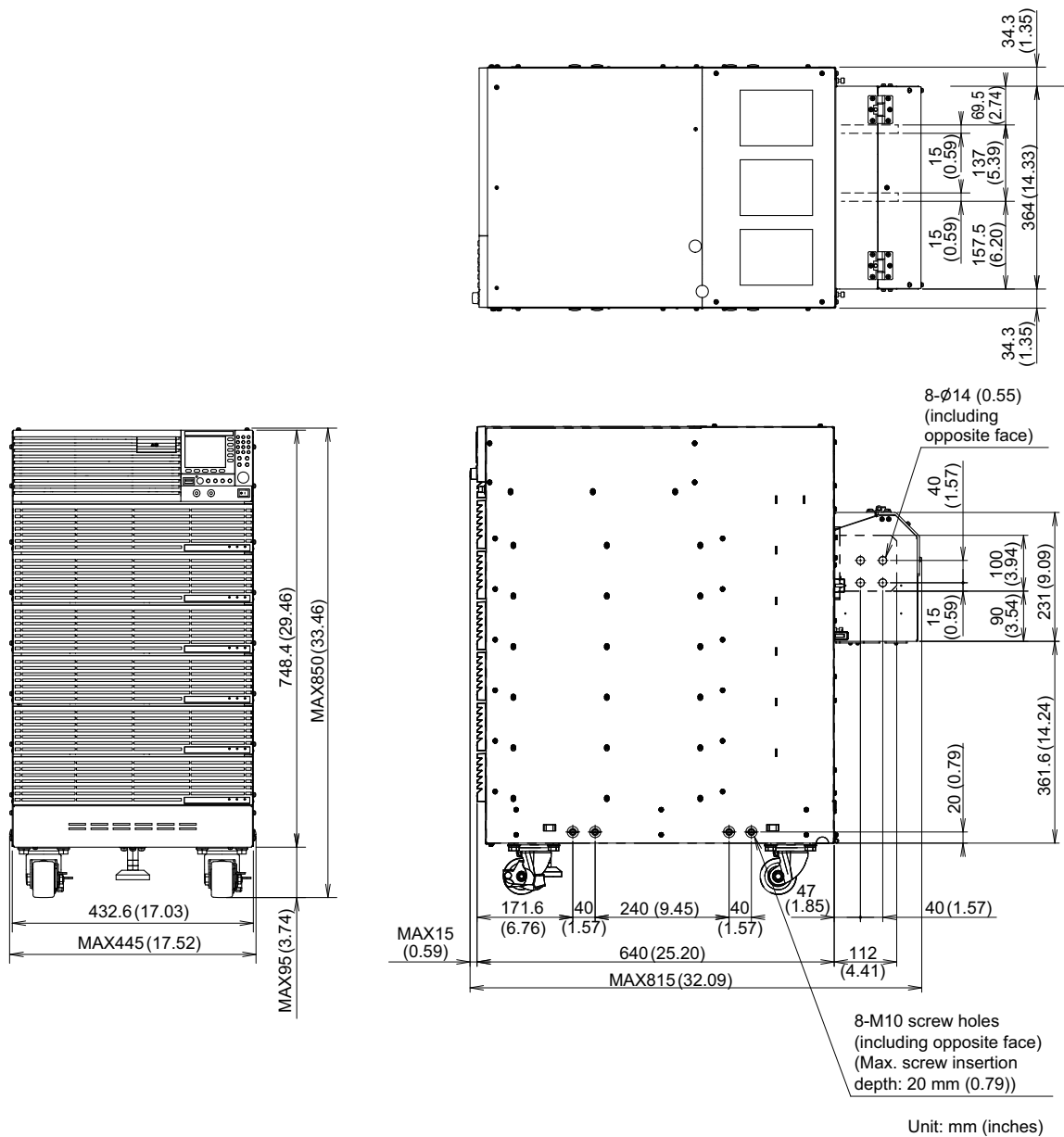
*1. This product conforms to Class I. Be sure to ground the protective conductor terminal of this product. If not grounded properly, safety is not guaranteed.

*2. Pollution is addition of foreign matter (solid, liquid or gaseous) that may produce a reduction of dielectric strength or surface resistivity. Pollution Degree 2 assumes that only non-conductive pollution will occur except for an occasional temporary conductivity caused by condensation.

External dimensions

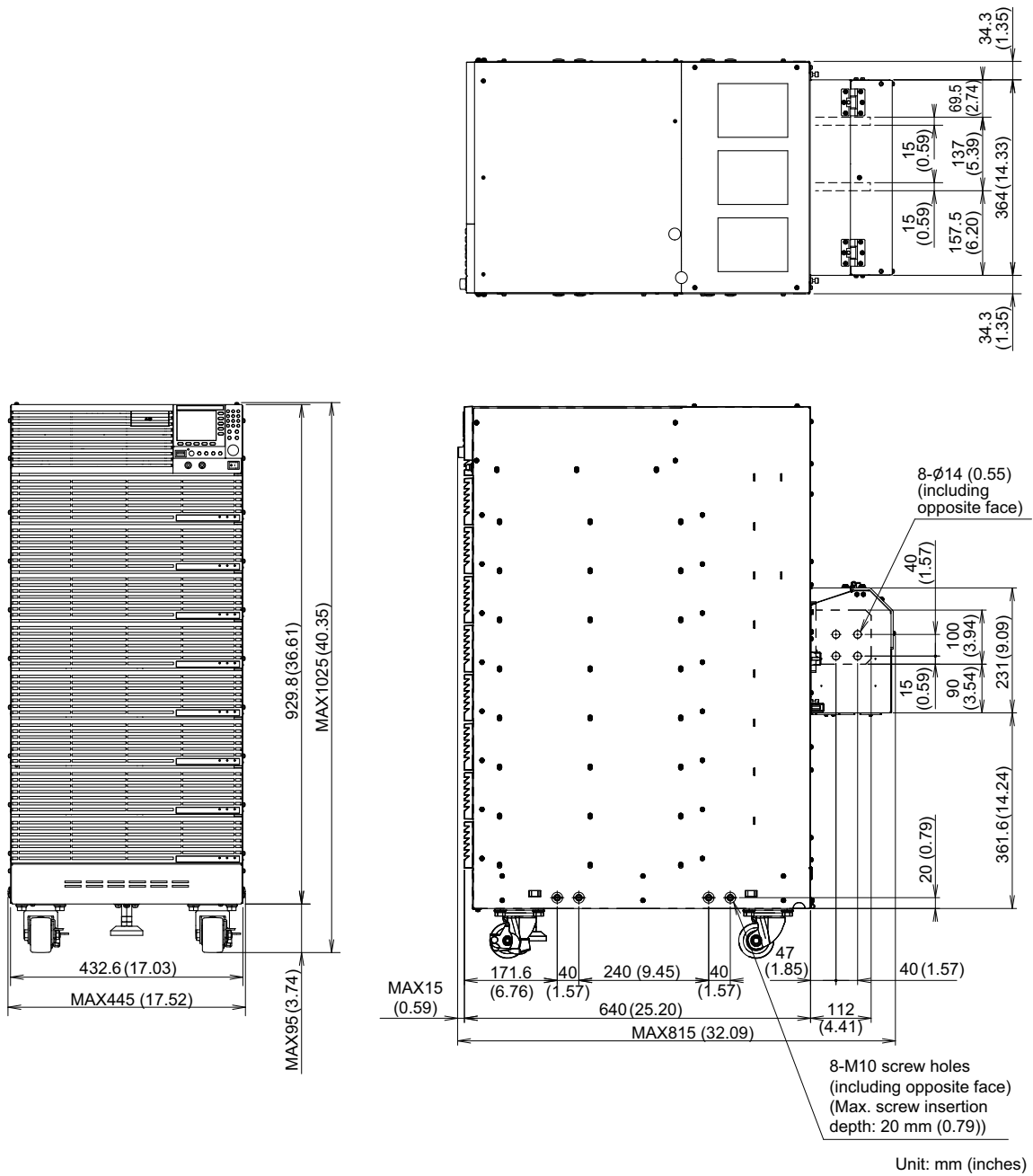
PLZ15005W SR

If you use a model on which handles are implemented, refer to "PLZ15005W SR (With handle)" (p.24).



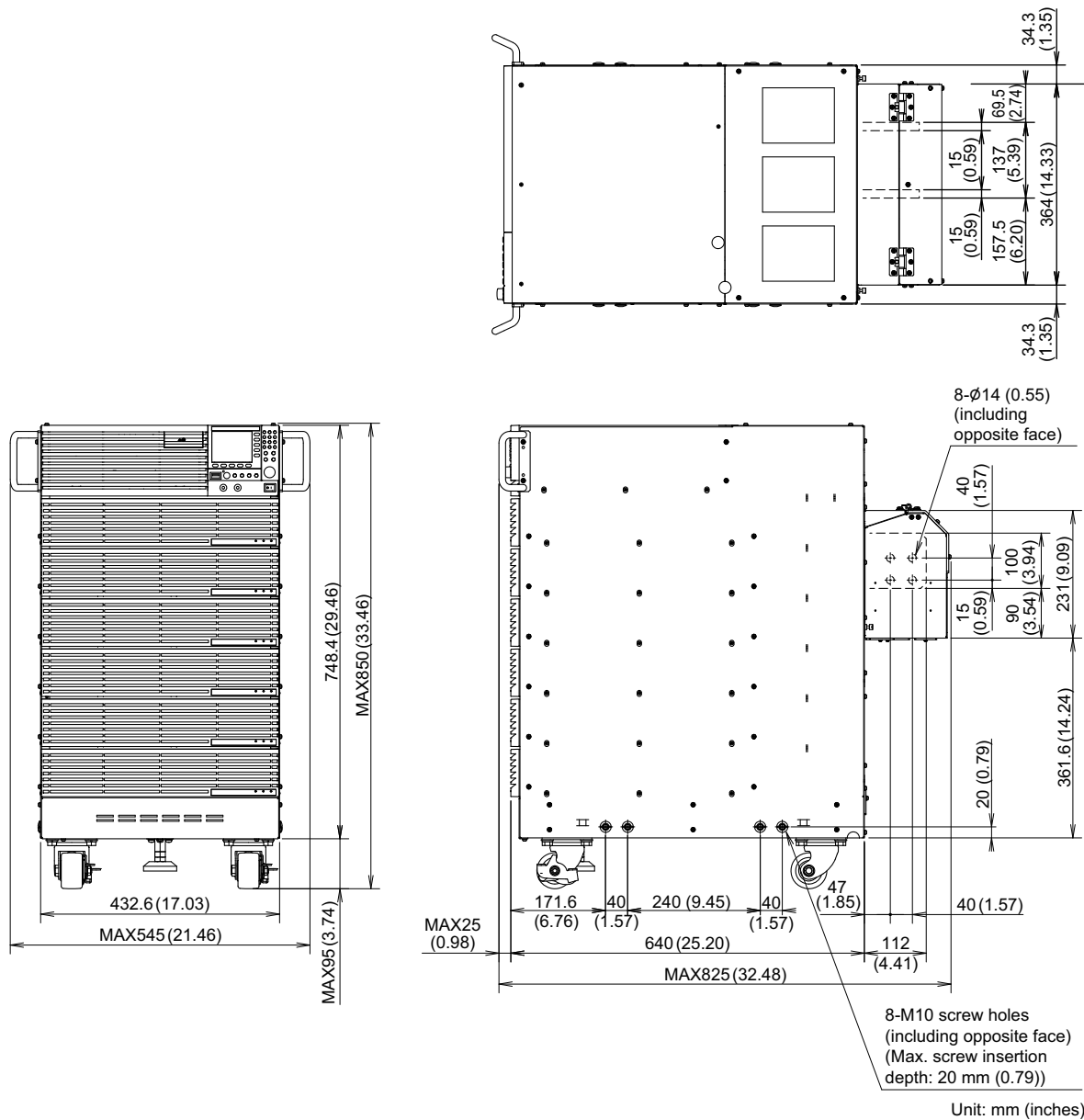
PLZ20005W SR

If you use a model on which handles are implemented, refer to "PLZ20005W SR (With handle)" (p.25).



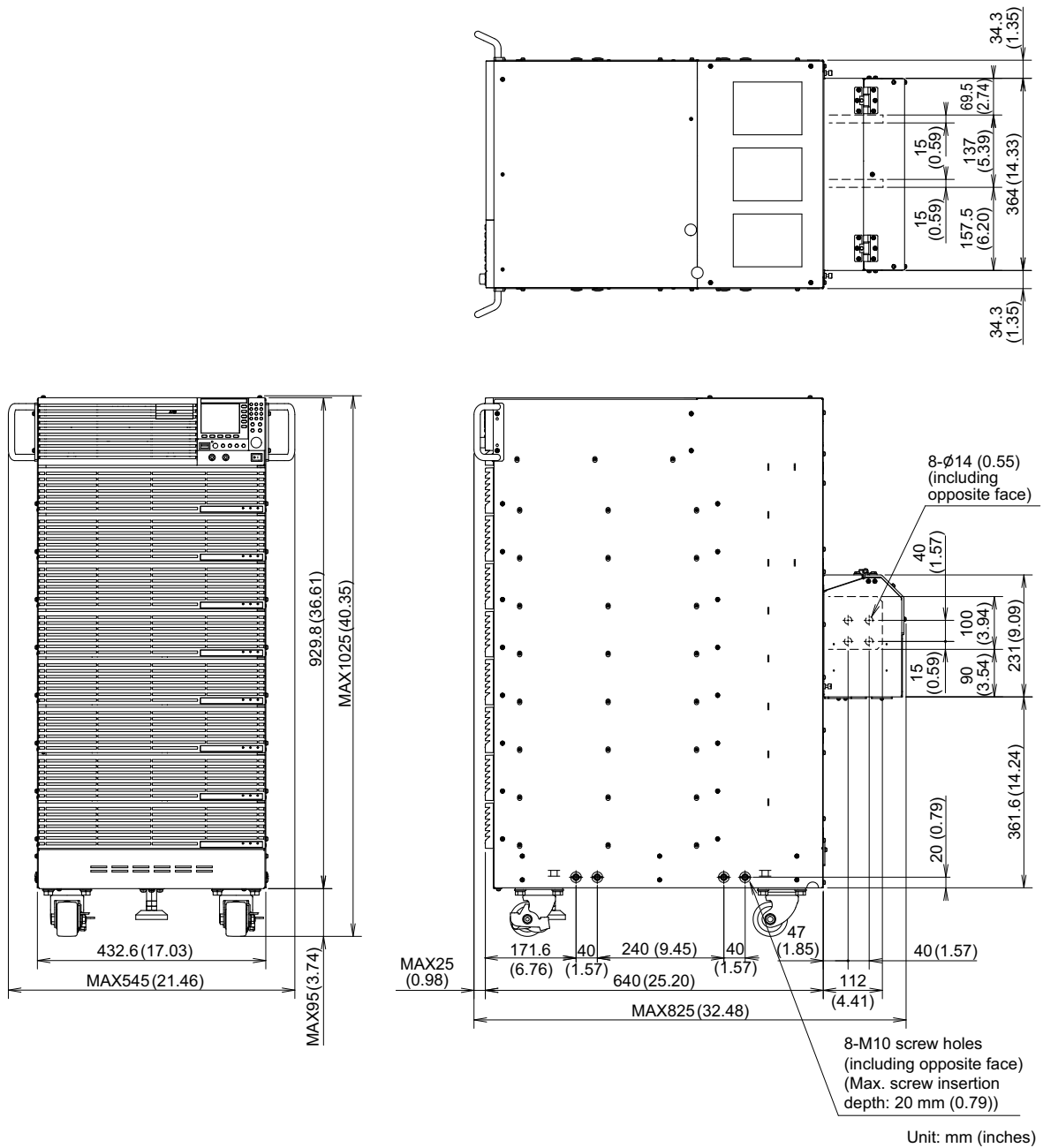
PLZ15005W SR (With handle)

Handles are implemented on some older models. If you use a model on which handles are not implemented, refer to "PLZ15005W SR" (p.22).



PLZ20005W SR (With handle)

Handles are implemented on some older models. If you use a model on which handles are not implemented, refer to "PLZ20005W SR" (p.23).



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