

P X Z S E R I E S



High-Capacity Regenerative Electronic Load

PXZ Series

NEW.

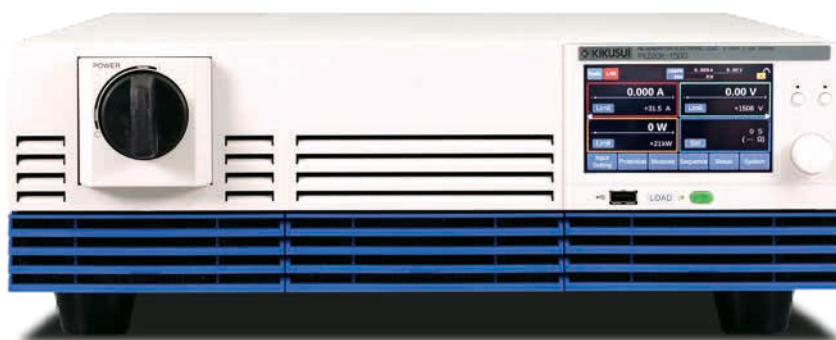
- Rated power of 20 kW in 3U
- Maximum operating voltage of 1500 V
- Operating modes: CC, CR, CV, CP
- Up to 10 units (200 kW) can be operated in parallel
- Equipped with a touch panel display
- Pre-charge function
- I-V characteristic function
- Sequence function

LAN, USB, RS232C, external analog control (isolated type) as standard *GPIB optional
Regenerative efficiency of over 90% (on-site regeneration)





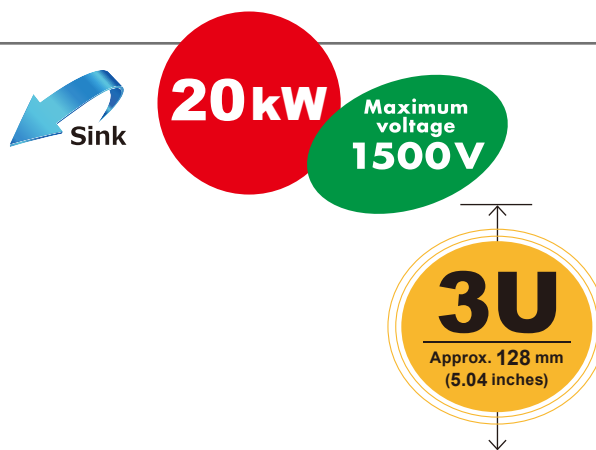
The PXZ series of highly efficient, reliable, high-capacity regenerative electronic loads has a rated power of 20 kW in 3U. In addition to the constant-current, constant-resistance, constant-voltage, and constant-power operating modes, this series has an I-V characteristic function that allows the user to set arbitrary I-V characteristics for each CC and CV operating mode. The series is also equipped with various functions, such as sequence, pre-charge, synchronous operation, pulse, sine, and VMCB functions. LAN, USB, and RS232C communication functions are included as standard, allowing easy integration into various evaluation systems. The PXZ series is highly scalable, and its capacity can be increased up to 200 kW when operating in parallel (up to 10 units).



High-Capacity Regenerative Electronic Load PXZ Series

Features

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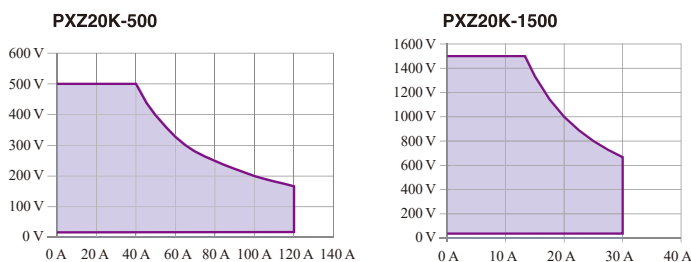


Lineup / Main Specifications

Specifications Model	DC Input rating power	DC Input operating voltage	DC Input rating current	Input current	weight
				AC (200 V 3-phase) / (400 V 3-phase) A	Approx. kg(lbs)
PXZ20K-500	20 kW	10 V to 500 V	120 A	80/40	38(83.78)
PXZ20K-1500		30 V to 1500 V	30 A	80/40	37(81.57)

Expansion Ratio of 2.25 to 3 Times

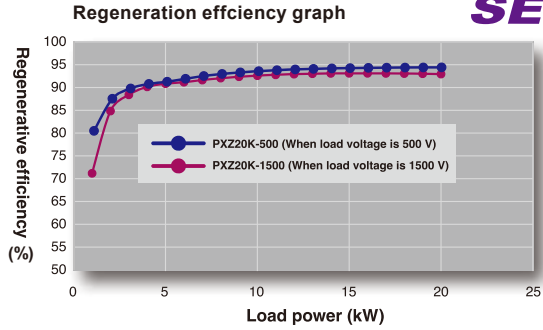
The PXZ20K-500 has an operating range of 10 V to 500 V, while the PXZ20K-1500 has a range of 30 V to 1500 V. An operating area ranges from 2.25 to 3 times the expansion ratio.



Conceptual diagram of operating area

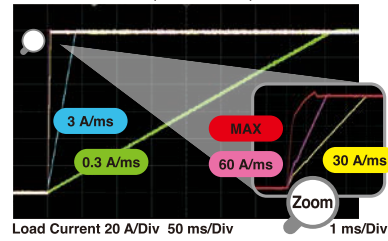


Please note that this product is designed for on-site regeneration.
(This is not a grid-connected device that returns the power to the grid.)



In CV and CC modes, the speed at which the current or voltage changes can be set. This allows the user to set the optimum test conditions for DUT applications.

CC Mode: 0-120 A (PXZ20K-500)



Model	Operating modes	Slew rate
PXZ20K-500	CV [V/ms]	0.125 / 1.25 / 12.5 / 125 / MAX
	CC [A/ms]	0.3 / 3 / 30 / 60 / MAX
PXZ20K-1500	CV [V/ms]	0.375 / 3.75 / 37.5 / 375 / MAX
	CC [A/ms]	0.075 / 0.75 / 7.5 / 15 / MAX

CC	The set current value is maintained even if the voltage changes.
DC	Normal input mode. Current is controlled by the current set value.
PULSE	Controlled by pulse function.
SINE	Controlled by sine function.
I-V	Controlled by arbitrary I-V characteristics.
EXT	The current set value is controlled by an external voltage. The external voltage input to EXT CONT is treated as an absolute value and applied to the current set value.
CR	A current proportional to the change in voltage is applied using the set conductance value as a proportionality constant.
OFF	Not controlled by conductance set value.
DC	Normal input mode. Current and voltage are controlled by the conductance set value.
PULSE	Controlled by pulse function.
EXT	The conductance set value is controlled by an external voltage.
CV	The set voltage value is maintained even if the current changes.
DC	Normal input mode. The voltage is controlled by the voltage set value.
PULSE	Controlled by pulse function.
SINE	Controlled by sine function.
I-V	Controlled by arbitrary I-V characteristics.
EXT	The voltage is controlled by external voltage.
CP	The set power is maintained even if the voltage and/or current change.
DC	Normal input mode. Power is controlled by the power set value.
EXT	The power set value is controlled by an external voltage.

By pressing or swiping the display with a finger, the user can select an item on the screen or set a numerical value. The display is pressure-sensitive and can be operated even with gloves on.



Contributing to Carbon Neutrality

The calculations were made assuming the maximum load power is 20 kW, and the device operates continuously for one month.



Model	Load power	Internal loss	CO2 emissions
PXZ20K-1500	20 kW	2 kW	631 kg
PLZ20005WH2	20 kW	20 kW	6,307 kg

The EXT CONT connector on the rear panel can be used to control the PXZ series with external devices. The general-purpose digital input and output terminals can be assigned any function, facilitating system construction in combination with other measurement devices. Digital I/O is standard for both NPN and PNP-type PLCs. Analog I/O is isolated from output terminals as standard, allowing safe analog control from PLC.



Terminal No.	Method	I/O	Name	Description
1	Digital	O	OUT Ch.1	General-purpose output terminal
2	Digital	O	OUT Ch.2	General-purpose output terminal
3	Digital	O	OUT Ch.3	General-purpose output terminal
4	-	-	DO COM	Digital output common
5	-	-	DI COM	Digital input common
6	Digital	I	IN Ch.1	General-purpose input terminal
7	Digital	I	IN Ch.2	General-purpose input terminal
8	Digital	I	IN Ch.3	General-purpose input terminal
9	-	O	+12 V OUT	12 V reference voltage available for digital input
10	-	-	-	Not used
11	-	-	A COM	Analog signal common
12	Analog	O	VMON	Voltage monitor
13	Analog	O	IMON	Current monitor
14	Digital	O	OUT Ch.4	General-purpose output terminal
15	Digital	O	OUT Ch.5	General-purpose output terminal
16	Digital	O	OUT Ch.6	General-purpose output terminal
17	-	-	DO COM	Digital output common
18	-	-	DI COM	Digital input common
19	Digital	I	IN Ch.4	General-purpose input terminal
20	Digital	I	IN Ch.5	General-purpose input terminal
21	Digital	I	H ALARM IN	HIGH alarm EXT HIGH occurrence
22	-	-	12 V COM	12 V reference voltage common
23	-	-	A COM	Analog signal common
24	Analog	I	EXT CV	Voltage control in the constant voltage mode
25	Analog	I	EXT CC/CP	Current control in the constant current / power modes

Method	Function
Analog input	Voltage and current value settings
Analog output	Monitoring of voltage and current values
General-purpose isolated digital input (Ch.1 to ch.5) *Photocoupler isolated input (Supports both current sink and source)	<ul style="list-style-type: none"> • Load on/off • LOW alarm on/off • Start/stop integration measurement • Reset integrated value • Input the measurement trigger • Recall settings from preset memory
Digital input (Ch.6)	Generating HIGH alarm (fxed)
General-purpose isolated digital output (Ch.1 to ch.6) *Semiconductor relay output	<ul style="list-style-type: none"> • Monitor the load on/off status • Monitor the power on • Monitor the alarm • Monitor the operation mode • Monitor the preset memory

General-purpose isolated digital input terminals are available for Ch.1 to Ch.5. Any setting value from the items listed on the right can be selected.

- ▶ OFF
- ▶ LOAD ON
- ▶ LOAD OFF
- ▶ LOAD CTRL
- ▶ L ALARM IN
- ▶ ALARM CLR
- ▶ SEQ RUN
- ▶ SEQ PAUSE
- ▶ INTEG CTRL
- ▶ INTEG RESET
- ▶ ACQUIRE TRIG
- ▶ SEQ TRIG IN
- ▶ MEM1 RECALL
- ▶ MEM2 RECALL

* Ch.6 is fixed at "H Alarm IN".

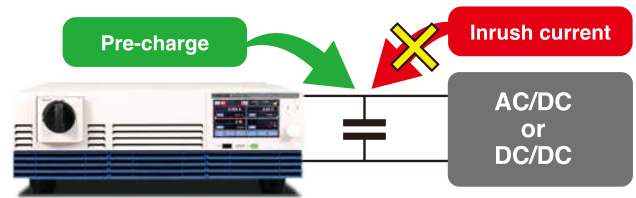
General-purpose isolated digital output terminals are available for Ch.1 to Ch.6. Any setting value from the items listed on the right can be selected.

- ▶ OFF
- ▶ LOAD ON
- ▶ POWER ON
- ▶ H ALARM OUT
- ▶ L ALARM OUT
- ▶ CC STATUS
- ▶ CV STATUS
- ▶ SEQ TRIG OUT
- ▶ SEQ STATUS
- ▶ EXT DIN BUSY
- ▶ MEM1 ACT TIME
- ▶ MEM2 ACT TIME
- ▶ RELAY DRIVE

● Sequence Function

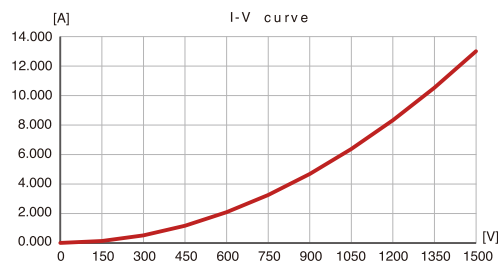
Programs can be linked

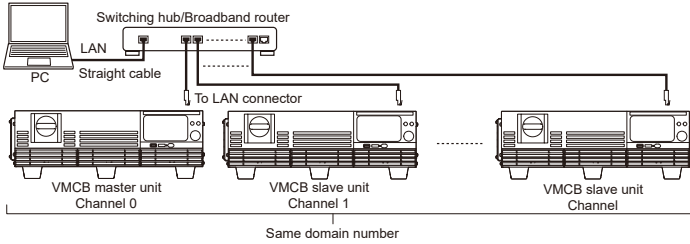
A total of 30 programs can be created.
Up to 10,000 steps can be created for all programs combined.
Example) Where number of Loops in program 1 is 2.



PXZ20K-1500 CC mode setting example

Points	Voltage [V]	Current [A]
1	0	0.000
2	150	0.130
3	300	0.520
4	450	1.170
5	600	2.080
6	750	3.250
7	900	4.680
8	1050	6.370
9	1200	8.320
10	1350	10.530
11	1500	13.000





Communication monitoring function

This function monitors the communication status. For example, the alarm will be activated and the output will be turned off when the LAN cable is disconnected and the communication is not being confirmed within the specified time of setting. This function protects the operation from the uncontrolled condition, and it improves the system reliability.

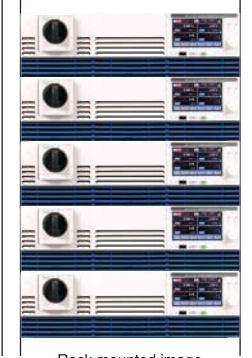


● **Security for LAN connections**

Access to the built-in web server can be restricted with a password. Also, when using VXI-11, HISLIP, and SCPI-RAW for control, host restrictions can be set with the IP address. It is possible to prevent access from any terminal other than the ones registered as a host (up to 4 hosts can be registered).

*

Intake and exhaust on the front and back only, allowing for close mounting

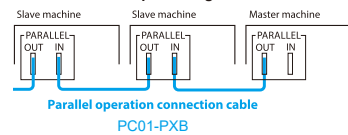


Rack mounted image

* Parallel operation is possible between models with different input rated voltages.

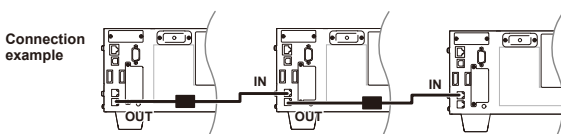
● Please contact us if you wish to operate more than 10 units in parallel.

Connection conceptual diagram



▲ Graph display example

● Synchronizing load on/off of multiple devices.



Connect the OUT connector and IN connector of the EXT SYNC with a synchronized operation signal cables.



- OVP (Over Voltage Protection)
- UVP (Under Voltage Protection)
- WDOG (Communication error protection)
- EXT LOW (External input alarm detection)
- OPP (Over Power Protection)
- OCP (Over Current Protection)

Specifications

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

• The product is warmed up for at least 30 minutes.

The used terminology is as follows:

• 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).

These values do not guarantee the performance of this product.

• setting: Indicates a setting.

• reading: Indicates a readout value.

• rating: Indicates a rated value.

• Open: Indicates equivalence to the state in which the DC INPUT terminals are opened.

• Vin: Indicates an input voltage.

● Rating

Item	PXZ20K-500	PXZ20K-1500
Rated power	20000 W	
Rated voltage (DC) *1	10 V to 500V	30 V to 1500 V
Rated current *1	120 A	30 A

*1. Maximum input current and maximum input voltage are limited by maximum input power.

● Constant current (CC) mode

Item	PXZ20K-500	PXZ20K-1500
Maximum settable current	+126 A	+31.5 A
Setting accuracy *1	±(0.75 % of rating)	
Setting resolution	0.01 A	0.002 A
Power fluctuation *2	±240 mA	±60 mA
Load variation *3	±240 mA	±60 mA
Rise time (TYP) *4	1 ms	
Fall time (TYP) *5	1 ms	
Response switching	FAST, SLOW	
Slew rate switching (TYP)	120 A/ms or more *6	30 A/ms or more *6
	60 A/ms	15 A/ms
	30 A/ms	7.5 A/ms
	3 A/ms	0.75 A/ms
	0.3 A/ms	0.075 A/ms

*1. Applies to a range of 1 % to 100 % of the rated current.

*2. 180 Vac to 252 Vac for 200 Vac input, 342 Vac to 504 Vac for 400 Vac input. At the constant load.

*3. This is the amount of change when the voltage is changed from the rated voltage and rated power to 1/10 of the rated voltage.

*4. In the case that the CC mode response setting is set to FAST. The time required for the input current in CC mode to change from 10 % to 90 % of the rated current when the input current value is changed from 0 % to 100 % of the rated current. When the slew rate is set to MAX.

*5. In the case that the CC mode response setting is set to FAST. The time required for the input current in CC mode to change from 90 % to 10 % of the rated current when the input current value is changed from 100 % to 0 % of the rated current. When the slew rate is set to MAX.

*6. MAX will appear on the display.

● Constant resistance (CR) mode

Item	PXZ20K-500	PXZ20K-1500
Conductance rating	2400.0 mS	200.000 mS
Setting range	0 mS to 2520.0 mS	0 ms to 210.000 mS
Setting accuracy *1	±(0.5 % of setting + 0.5 % of rating)	
Setting resolution	0.20 mS	0.02 mS
Response switching	FAST, SLOW	

*1. Converted value at the input current.

● Constant voltage (CV) mode

Item	PXZ20K-500	PXZ20K-1500
Maximum settable voltage	525 V	1575 V
Setting accuracy	±(0.2 % of setting + 0.1 % of rating)	
Setting resolution	0.05 V	0.1 V
Remote sensing Maximum compensation voltage (reciprocating) (TYP)	10 % of rating	
Response switching	FAST, SLOW	
Slew rate switching (TYP)	125 V/ms or more *1	375 V/ms or more *1
	125 V/ms	375 V/ms
	12.5 V/ms	37.5 V/ms
	1.25 V/ms	3.75 V/ms
	0.125 V/ms	0.375 V/ms

*1. MAX will appear on the display.

● Constant power (CP) mode

Item	PXZ20K-500	PXZ20K-1500
Maximum settable power	21000 W	
Setting accuracy *1	±(0.5 % of power rating + 0.5 % of current rating × Vin)	
Setting resolution	2 W	

*1. Guaranteed in the range from 5 % to 100 % of rated power. Rating indicates the rated current value.

Specifications

●200 V three-phase three-wire input Specifications for models having an input voltage rating of 200 Vac.

Item	PXZ20K-500	PXZ20K-1500
Nominal AC input rating	200 Vac to 240 Vac, 50 Hz to 60 Hz	
AC Input voltage range	180 Vac to 252 Vac	
AC Input frequency range	47 Hz to 63 Hz	
AC Input current (MAX) *1	80 A (When Input voltage is 180 V)	
AC Input power (MAX) *1	22 kVA	
Inrush current (TYP) *2	90 A	
Power factor (TYP) *1	0.96	
Input hold time	10 ms or more	

*1. At the rated input power for the rated input current.

*2. Maximum peak current value when the POWER switch is turned on. (Excluding the surge current to the input filter capacitor.)

●400 V three-phase three-wire input Specifications for models having an input voltage rating of 400 Vac.

Item	PXZ20K-500	PXZ20K-1500
Nominal AC input rating	380 Vac to 480 Vac, 50 Hz to 60 Hz	
AC Input voltage range	342 Vac to 504 Vac	
AC Input frequency range	47 Hz to 63 Hz	
AC Input current (MAX) *1	40 A (When Input voltage is 342 V)	
AC Input power (MAX) *1	22 kVA	
Inrush current (TYP) *2	70 A	
Power factor (TYP) *1	0.96	
Input hold time	10 ms or more	

*1. At the rated input power for the rated input current.

*2. Maximum peak current value when the POWER switch is turned on. (Excluding the surge current to the input filter capacitor.)

●Display

Item	PXZ20K-500	PXZ20K-1500	
Voltmeter	Maximum display	±600.00 V	±1800.00 V
	Display accuracy	±(0.1 % of reading + 0.2 % of rating)	
Ammeter	Maximum display	±168.000A	±42.000A
	Display accuracy	±(0.75 % of rating)	
Wattmeter	Maximum display *1	±24.000 kW	
	Display accuracy	Display the integrated value of voltmeter and ammeter	
Operation display	Load ON / OFF	The LOAD LED on the front panel lights in green	
	Operation mode	Indicate the followings on the upper left part of the display CV: CV icon, CC: CC icon, CR: CR icon, CP: CP icon	
	Remote (LAN)	Indicate the followings on the upper left part of the display	
	Alarm	Indicate the details of activated protection function on the display	
	SCPI error	Indicate the error occurring at present on the display	
	POWER off	Indicate residual charge warning and an instruction to turn off the display, then reboot	
	Key lock	Indicate the key lock status on the upper right part of the display	
	Sensing	When sensing is enabled, indicate the sensing icon on the upper right part of the display	
	During parallel operation	Displaying the slave state on the slave unit	
	External control	When digital input/output is enabled, indicate the EXT icon on the upper right part of the display	

*1. The unit will be W if it is less than 10 kW.

●Protection Specifications LOW alarm An alarm not requiring a reboot to be cleared.

Item	PXZ20K-500	PXZ20K-1500	
OVP (overvoltage protection)	Protection operation	Load off, indicate "OVP" on the display. SLV OVP is displayed on the slave unit.	
	Setting range	50 V to 550 V	150 V to 1650 V
	Setting accuracy	±(0.1 % of setting + 0.2 % of rating)	
	Setting resolution	0.05 V	0.1 V
OCP (overcurrent protection)	Protection operation	Load off, indicate "OCP" on the display. SLV OCP is displayed on the slave unit.	
	Setting range	12 A to 132 A	3 A to 33 A
	Setting accuracy	±(0.75 % of rating)	
	Setting resolution	0.01 A	0.002 A
OPP (overpower protection)	Protection operation	Load off, indicate "OPP" on the display. SLV OPP is displayed on the slave unit.	
	Setting range	2 kW to 24 kW	
	Setting accuracy	±(1.0 % of power rating + 1.0 % of current rating × Vin)	
	Setting resolution	2 W	
UVP (undervoltage protection)	Protection operation	Load off, indicate "UVP" on the display. SLV UVP is displayed on the slave unit.	
	Setting range	0 V to 500 V	0 V to 1500 V
	Selectable	Enable/Disable	
	Setting accuracy	±(0.1 % of setting + 0.2 % of rating)	
Watchdog Alarm (Communication error protection)	Setting resolution	0.05 V	0.1 V
	Protection operation	Load off, indicate "WDOG" on the display	
	Setting range	1 s to 3600 s	
	Selectable	Enable/Disable	
External Alarm LOW Level (external input alarm detection)	Protection operation	Load off, indicate "EXT LOW" on the display	

Specifications

●Protection Specifications HIGH alarm An alarm requiring a reboot to be cleared.

Item	PXZ20K-500	PXZ20K-1500
Reverse Alarm (Reverse-connection detection protection)	Protection operation	Load off, indicate "REVE" on the display
OHP (Overheat protection)	Protection operation	Load off, indicate "OHP" on the display. SLV OHP is displayed on the slave unit.
Line OVP (Grid overvoltage protection)	Protection operation	Load off, indicate "LOVP" on the display. SLV LOVP is displayed on the slave unit.
	Setting range	Input voltage rating 200 Vac model: 200 V to 258 V Input voltage rating 400 Vac model: 380 V to 516 V
Line UVP (Grid undervoltage protection)	Protection operation	Load off, indicate "LUV" on the display. SLV LUV is displayed on the slave unit.
	Setting range	Input voltage rating 200 Vac model: 175 V or less. Input voltage rating 400 Vac model: 333 V or less.
Line Frequency Error (Grid abnormal frequency protection)	Protection operation	Load off, indicate "FREQ" on the display. SLV FREQ is displayed on the slave unit.
	Detection value	42 Hz/68 Hz
External Alarm HIGH Level (External input alarm detection)	Protection operation	Load off, indicate "EXT HIGH" on the display
SENS Alarm (incorrect sensing connection detection)	Protection operation	Load off, indicate "SENS" on the display
	Setting range	Enable/Disable
Parallel Communication Error (Parallel operation communication error detected)	Protection operation	Load off, indicate "PARA COM" on the display
Para Other Slave Alarm (Parallel operation slave error occurred)	Protection operation	Load off, indicate "SLV OTHR" on the display
Incorrect Slave Alarm (Not applicable device connected)	Protection operation	Load off, indicate "SLV INC" on the display
Too many connections (Too many parallel connections)	Protection operation	Load off, indicate "TOO MANY" on the display
Hardware ERR *1 (Hardware error)	Protection operation	Load off, indicate "ERRH" on the display. SLV ERRH is displayed on the slave unit.
Software ERR *2 (Software error)	Protection operation	Load off, indicate "ERRS" on the display. SLV ERRS is displayed on the slave unit.

*1. It occurs when an abnormality related to the hardware is detected and the internal unit comes to an emergency stop.

*2. It occurs when an abnormality related to the software is detected and the internal unit comes to an emergency stop.

●External analog I/O

Item	PXZ20K-500	PXZ20K-1500	
Input	Input points	2 points	
	Voltage (CV) control	Setting range	0 % to 100 % of the rated voltage
		Input voltage range	0 V to 5 V or 0 V to 10 V (Selectable)
		Accuracy	±(1 % of rating)
	Current (CC) control Power (CP) control	Setting range	0 % to 100 % of the rated current, rated power and rated conductance
		Input voltage range	0 V to 5 V or 0 V to 10 V (Selectable)
Resistance (CR) control *1	Accuracy	±(1 % of rating)	
Output	Output points	2 points	
	Voltage monitor (VMON)	Output range	0 % to 100 % of the rated voltage
		Output voltage	0 V to 5 V or 0 V to 10 V (Selectable)
		Accuracy	±(1 % of rating)
	Current monitor (IMON)	Output range	0 % to 100 % of the rated current
		Output voltage	0 V to 5 V or 0 V to 10 V (Selectable)
		Accuracy	±(1 % of rating)

*1. Select either current control or power control.

●External digital input

Item	PXZ20K-500	PXZ20K-1500
Fixed input points		1 point (Polarity switchable)
Selected input points		5 points (Polarity switchable)
Input form		Photocoupler isolated input (Applicable to both current sink / source output)
Fixed function	ALARM IN	HIGH alarm occurrence
	OFF	Do not use terminals
	LOAD ON	Turn on the load
	LOAD OFF	Turn off the load
	LOAD CTRL	Turn on of off the load
	L ALARM IN	LOW alarm occurrence
	ALARM CLR	LOW alarm clearance
	SEQ RUN	Sequence start/end
	SEQ PAUSE	Sequence pause/resume
	SEQ TRIG IN	Input the trigger for sequence
	ACQUIRE TRIG	Input the measurement trigger
	MEM1 RECALL	Recall preset memory 1
	MEM2 RECALL	Recall preset memory 2
	INTEG CTRL	Starting/stopping integration measurement
INTEG RESET	Resetting integration measurement data	
External circuit power supply range		12 V to 24 Vdc (±10 %)

Specifications

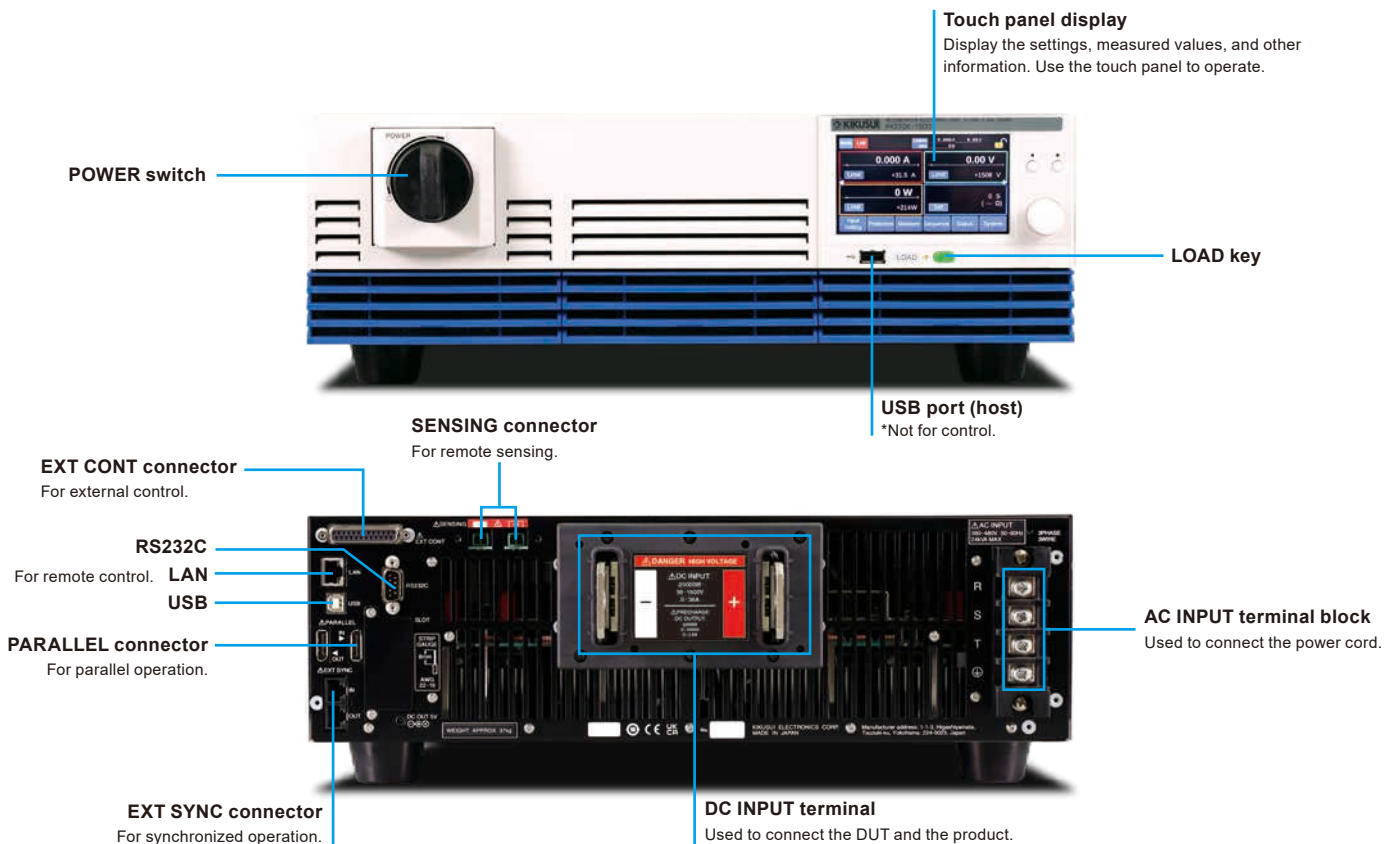
External digital output

Item	PXZ20K-500	PXZ20K-1500
Output points	6 points (Polarity switchable)	
Output form	Semiconductor relay output	
Selecting function	OFF	Do not use terminals
	LOAD ON	Outputs a signal when load is turned on
	POWER ON	Signal is output when power supply is on and load is possible
	H ALARM OUT	Output a signal when a HIGH alarm occurs
	L ALARM OUT	Output a signal when a LOW alarm occurs
	CC STATUS	Output a signal when operating in the CC mode
	CV STATUS	Output a signal when operating in the CV mode
	SEQ TRIG OUT	Output the trigger for sequence
	SEQ STATUS	Signal is output while the sequence is running
	EXT DIN BUSY	Output a signal when the digital input is in BUSY status
	MEM1 ACT TIME	Signal is output when the setting is completed for preset memory 1
	MEM2 ACT TIME	Signal is output when the setting is completed for preset memory 2
	RELAY DRIVE	Links with load on/off and outputs a signal with a time difference of approx. 100 ms. You can set this parameter to only Ch.6.

Communication Specifications

Item	PXZ20K-500	PXZ20K-1500
Common specifications	Software protocol	IEEE std. 488.2-1992
	Command language	Complies with SCPI Specification 1999.0
RS232C	Hardware	D-SUB 9-pin connector Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps Data length: 8 bits, Stop bits: 1 bit, Parity bit: None Flow control: No, CTS-RTS
	Program message terminator	LF during reception, LF during transmission
USB (device)	Hardware	Standard type B socket. Complies with the USB 2.0 specifications; data rate: 480 Mbps (high speed)
	Program 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: 480 Mbps (high speed)
LAN	Hardware	IEEE 802.3 100BASE-TX or 10BASE-T Ethernet
	Communication protocol	SCPI-RAW, SCPI-Telnet, HiSLIP, VXI-11
	Program message terminator	HiSLIP: LF or END during reception, LF + END during transmission. SCPI-RAW: LF during reception, LF during transmission
	Compliant standards	LXI Version 1.5 Specifications 2016

Panel explanation



Specifications

●Others

Item		PXZ20K-500	PXZ20K-1500	
Synchronization function (clock synchronization)	Overview	SYNC icon is displayed on the display when synchronization is established with the internal clock after connecting with other PXZ series using the EXT SYNC connector.		
	Sequence synchronization	Synchronization of the program start and step start.		
	Measurement synchronization	Synchronization of the measurement start		
	Load synchronization	Synchronization of load ON/OFF		
Sequence function	Operation mode	CV, CC, CR and CP modes		
	Maximum number of programs	30		
	Maximum number of steps	10000		
	Step execution time	1 ms to 3600000 s		
	Loop count	1 to 100000, or infinite		
Sine function	Operation mode	CV/CC mode		
	Frequency setting range	1 Hz to 1000 Hz		
	Frequency precision setting	1 Hz to 10 Hz	0.2 Hz	
		12 Hz to 100 Hz	2 Hz	
		120 Hz to 1000 Hz	20 Hz	
	CV	Maximum setting	Setting range up to 105 % of rated voltage	
		Maximum offset setting		
CC	Maximum setting	Setting range up to 105 % of rated current		
	Maximum offset setting			
Pulse function	Operation mode	CV/CC/CR mode		
	Frequency setting range	1 Hz to 1000 Hz		
	Frequency precision setting	1 Hz to 10 Hz	0.01 Hz	
		12 Hz to 100 Hz	0.1 Hz	
		120 Hz to 1000 Hz	1 Hz	
	CV	High level	Setting range up to 105 % of rated voltage	
		Low level		
	CC	High level	Setting range up to 105 % of rated current	
		Low level		
	CR	High level	Setting range up to 105 % of rated conductance	
Low level				
Duty cycle	2.5 % to 97.5 %			
Over current protection (OCP) delay function	Setting range	1 ms to 2000 ms		
	Setting resolution	1 ms		
Multichannel (VMCB) function	Connection between the master unit and a PC	LAN, USB, RS232C		
	Connection with slave units	LAN		
Measurement trigger	Measurement start condition (trigger source)	Conditions for starting measurement can be selected (when inputting from display, when inputting commands by remote control, when inputting signals by external control, when operating in synchronization, and when load off)		
	Number of measurements	1 to 65536		
	Measurement delay time	Setting range	0 s to 100 s	
		Setting resolution	0.1 ms	
	Measurement interval	Setting range	0.1 ms to 3600 s	
		Setting resolution	0.1 ms	
Measurement time	Setting range	0.1 ms to 1 s		
	Setting resolution	0.1 ms		
I-V characteristic function	Operation mode	CV/CC mode		
	Number of setup items	3 to 100 items (interpolated between points with straight lines)		
Preset value Memory	Number of memory entries	20		
	Saved setting	Values in CV, CC, CP, and CR modes, and protection function values		
Setup Memory	Number of memory entries	21		
	Saved setting	Load on/off, Input voltage value/Input current value/Input power value/Conductance value, Input mode, Response, Slew Rate, Priority operation mode (Priority when load is ON), Value of the pulse function (Duty, Frequency, High, Low), Value of the sine function (Amplitude, Frequency, Offset), Number of I-V characteristics (Count), Over voltage protection (OVP), Under voltage protection (UVP, UVP Enable), Over current protection (OCP, Delay), Over power protection (OPP), Line overvoltage protection (Line OVP), Measurement trigger settings (Source, Count, Delay, Enable, Timer), Integration settings (Gate, Reset)		
Key Lock	Level 1	Load on/off and preset memory recall are available		
	Level 2	Load on/off are available		
	Level 3	Load off is available		
Number of units in parallel operation	Up to 10 units			
Pre-charge function *1	Maximum settable voltage	105 % of voltage ratings		
	Voltage setting accuracy	±(0.2 % of setting + 0.1 % of rating)		
	Current setting accuracy *2	±(1.0 % of rating)		

*1. Release the interlock.

*2. Fixed set value of 5 % of rated current.

Specifications

•General Specifications

Item	PXZ20K-500	PXZ20K-1500	
Weight	Approx. 38 kg (83.78 lbs)		
Dimensions	430 (16.93)(MAX455 (17.91))W × 128 (5.04)(MAX160 (6.30))H × 720 (28.35)(MAX980 (38.58))D mm (inches) Refer to Outline Drawing		
Environmental conditions	Operating environment	Indoor use, Overvoltage category II	
	Operating temperature	0 °C to +50 °C (32 °F to +122 °F)	
	Operating humidity	20 % rh to 85 % rh (no condensation)	
	Storage temperature	-25 °C to +60 °C (-13 °F to +140 °F)	
	Storage humidity	90 % rh or less (no condensation)	
Altitude	Up to 2000 m		
Cooling system	Forced air cooling using fan		
Accessories	AC INPUT terminal cover, External control connector kit (1 set), Chassis connection wire, DC INPUT terminal cover, DC INPUT terminal screws (1 pair), EXT SYNC connector cover, SENSING connector cover, SENSING connector (2 pc.), Synchronized operation signal cable kit, Safety Information (1 copy), China RoHS sheet (1 sheet), Getting Started Guide (1 copy), Heavy object warning label (1 piece)		
Withstand voltage	Between primary and FG	2200 Vac for 1 minute	
	Between primary and secondary		
	Between secondary and FG		1800 Vdc for 1 minute
Insulation resistance	Between primary and FG	30 MΩ, 500 Vdc	
	Between primary and secondary	30 MΩ, 1000 Vdc	
Isolation voltage	±1000 V	+2000 V/-1000 V	
Electromagnetic compatibility (EMC) *1 *2	Complies with the requirements of the following directive and standards. EMC Directive 2014/30/EU EN 61326-1 (Class A *3)		
Safety *1	Complies with the requirements of the following directive and standards. Low Voltage Directive 2014/35/EU *2 EN 61010-1 (Class I *4, Overvoltage category II, Pollution Degree 2 *5)		

*1. Does not apply to specially ordered or modified products.

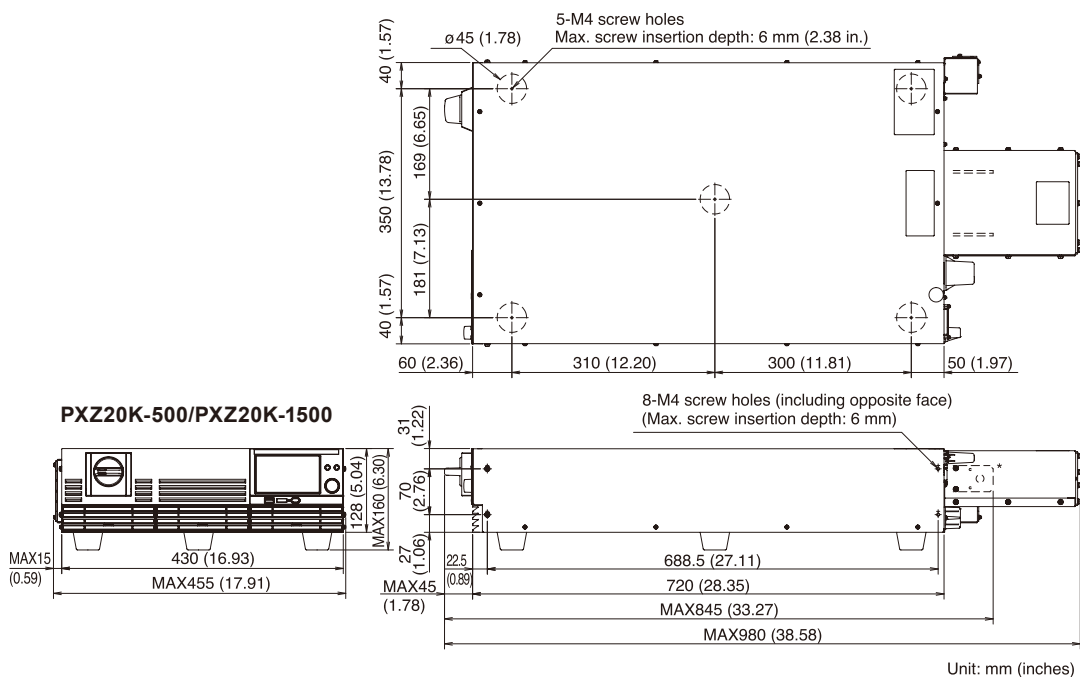
*2. Only for models with CE marking / UKCA marking on their body.

*3. This is a Class A instrument. This product is intended for use in an industrial environment. This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

*4. This is a Class I instrument. Be sure to ground this product's protective conductor terminal. The safety of this product is guaranteed only when the product is properly grounded.

*5. 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.

•Outline Drawing *Maximum dimensions include protrusions and accessory covers.



* The number of holes in the busbars varies depending on the model.

Ordering information

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Options

- Parallel operation signal cable kit
PC01-PXB (Cable length: 1.5 m)

Model name	Length	Maximum allowable current	Terminal size	Applicable models
DC80-2P3M-M10M10	3 m	200 A	M10/M10	PXZ20K-500
HV22-2P3M-M12M8		80 A	M12/M8	PXZ20K-1500

* The switchboard ends of the power cords have not been prepared for connection.

Model name	Length	Nominal cross-sectional area	Terminal size	Applicable models
AC22-4P3M-M6C-4S	3 m	22 mm ²	M6	All models



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