INVERTER-TYPE WELDING TRANSFORMER

IT-H1062A3W

OPERATION MANUAL

AMADA®

Z05OM1203632-07

Thank you for purchasing our Inverter-Type Welding Transformer **IT-H1062A3W**.

- This operation manual explains its method of operation and precautions for use.
- Before using, read this operation manual carefully; after reading, save it in a proper place where you can easily access.

Contents

1. Special Precautions

(1) Safety Precautions

Before using, read "Safety Precautions" carefully to understand the correct method of use.

- These precautions are shown for safe use of our products and for prevention of damage or injury to operators or others. Be sure to read each of them, since all of them are important for safety.
- The meaning of the words and symbols is as follows.

⚠ DANGER

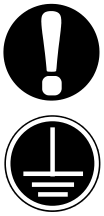
Denotes operations and practices that may imminently result in serious injury or loss of life if not correctly followed.

⚠ WARNING

Denotes operations and practices that may result in serious injury or loss of life if not correctly followed.

⚠ CAUTION

Denotes operations and practices that may result in personal injury or damage to the equipment if not correctly followed.

	These symbols denote "prohibition". They are warnings about actions out of the scope of the warranty of the product.
	These symbols denote actions which operators must take.
	Each symbol with a triangle denotes that the content gives notice of DANGER, WARNING or CAUTION to the operator.

⚠ DANGER

Do not touch the “Terminal block” on the rear panel of the Welding Transformer

Since very high voltage is applied to the “Terminal block”, it is very dangerous to touch it unnecessarily. When connecting or disconnecting a cable, be sure to turn off the power. After connecting the cable, install the terminal cover so that operator can not touch the terminal block during work.

Never disassemble, repair or modify the Welding Transformer

These actions can cause electric shock and fire. Consult us or your distributor for inspection and repair.

Never burn, destroy, cut, crush or chemically decompose the Welding Transformer

This product incorporates parts containing gallium arsenide (GaAs).

⚠ WARNING

Do not put your hands between the electrodes
When welding, keep your fingers and hands away from the electrodes.

Ground the Welding Transformer
If the Transformer is not grounded, you may get an electric shock when there is trouble, or when electricity leaks.

Use the rated voltage
Applying a voltage exceeding rated voltage can cause abnormal heat and fire.

Do not touch +/- terminal, secondary cable, any welded part or electrodes during welding and just after welding finished
These parts are very hot. Do not touch them; otherwise you may be burnt.

Do not damage the power cable and connecting cables
Do not tread on, twist or tense any cable. The power cable and connecting cables may be broken, and that can cause electric shock and fire. If any part needs to be repaired or replaced, consult us or your distributor.

Wear protective glasses
If you look at the flash directly during welding, your eyes may be damaged.
If any spatter gets in your eye, you may lose your eyesight.

Stop the operation if any trouble occurs
Continuous operation after occurrence of a trouble such as burning smell, abnormal sound, abnormal heat, smoke, etc. can cause electric shock and fire. If such a trouble occurs, immediately consult us or your distributor.

Persons with pacemakers must stay clear of the welding machine
A person who uses a pacemaker must not approach the welding machine or walk around the welding shop while the welding machine is in operation, without being permitted by his/her doctor. The welding machine generates a magnetic field and has effects on the operation of the pacemaker while it is turned on.

Protective gear must be worn
Put on protective gear such as protective gloves, long-sleeve jacket, leather apron, etc. Spatter can burn the skin if they touch the skin.

⚠ CAUTION

Do not use this Welding Transformer for purposes other than welding
Use of this equipment in a manner other than specified can cause an electric shock and fire.

Use proper tools (wire strippers, pressure wire connectors, etc) for termination of the connecting cables
Do not cut the conductor of wire. A flaw on it can cause fire and electric shock.

Install the Welding Transformer on firm and level surface
If the Transformer falls or drops, injury may result.

Do not splash water on the Welding Transformer
Water splashed over the electric parts can cause electric shock and short circuits.

Do not place a water container on the Welding Transformer
If water spills, insulation will deteriorate, and this may cause electric leak and fire.

Keep combustible matter away from the welding machine
Spatter can ignite combustible matter. If it is impossible to remove all combustible matter, cover them with non-combustible material.

Do not cover the Welding Transformer with a blanket, cloth, etc.
If such a cover is used, it may be overheated and burn.

Keep a fire extinguisher nearby
Keep a fire extinguisher in the welding shop in case of fire.

Use ear protectors
Loud noises can damage hearing.

Maintain and inspect the Welding Transformer periodically
Maintain and inspect the Transformer periodically, and repair any damage nearby before starting operation.

(2) Precautions for Handling

- When transporting or moving the Transformer, do not lay it down. Also, handle the Transformer with care so as not to make an impact such as drop on it. Moving the Transformer by hand must be done by at least two people.

- Install this Welding Transformer on a firm and level surface. If it is inclined, malfunction may result.

- Do not install this Welding Transformer in the following:
  - Damp places where humidity is higher than 90%,
  - Hot or cold places where temperatures are above 45°C or below 5°C,
  - Places near a high noise source,
  - Places where chemicals are handled,
  - Places where water will be condensed,
  - Dusty places,
  - Places exposed to large amounts of vibration or shock, and
  - Places at an altitude above 1000 meters.

- Clean the outside of the Welding Transformer with a soft, dry cloth or one wet with a little water. If it is very dirty, use diluted neutral detergent or alcohol. Do not use paint thinner, benzine, etc., since they can discolor or deform the Welding Transformer.

- For the water-cooled products, use city water or water for industrial use. Note that the water temperature, flow rate and water pressure fall within the specified range.

- Do not put a screw, a coin, etc., in the Welding Transformer, since they can cause a malfunction.

- Operate the Welding Transformer according to the method described in this Operation Manual.

- The welding power supply, the welding head, and the cables for connecting the welding power supply, the welding head and the Transformer are separately needed to use the Transformer.

- When the Transformer has the I/O signals, the I/O signal line to start the Transformer is not attached.

(3) On Disposal

This product incorporates parts containing gallium arsenide (GaAs). At the time of disposal, separate it from general industrial waste or domestic waste and carry out the disposal in accordance with applicable laws and regulations.

(4) Shipping Kit

Verify that contents of the container agree with the kit list.
If you see any damage, please contact us.

Packaged Kit	Quantity
IT-H1062A3W	1
Operation Manual	1

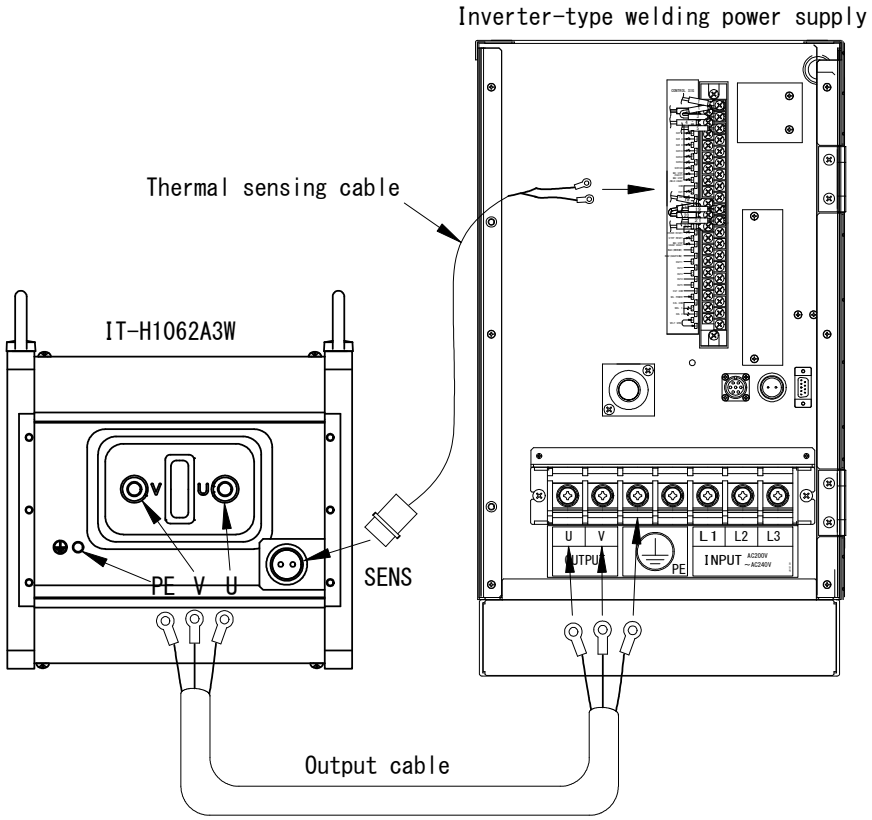
Options

Item	Model No. (Item No.)	Specifications	Conformity Welder	Remarks
Thermal sensing cable	SK-1205604 (1205604)	Cabtyre cable 0.5 sq-2 cores, 2 m	IS-800A IS-1400A	Metal connector / Crimping terminal (2P connector / Terminal for M3.5)
	SK-1205605 (1205605)	Cabtyre cable 0.5 sq-2 cores, 3 m		
	SK-1205606 (1205606)	Cabtyre cable 0.5 sq-2 cores, 5 m		
Output cable	PK-1209847 (1209847)	600 V VCT cable 22 sq-3 cores, 2 m	IS-800A	Power supply side: M8 terminal (3) Transformer side: M8 terminal (2) M6 terminal (1)
	PK-1209848 (1209848)	600 V VCT cable 22 sq-3 cores, 5 m		
	PK-1209849 (1209849)	600 V VCT cable 22 sq-3 cores, 10 m		
	PK-1205244 (1205244)	600 V VCT cable 22 sq-3 cores, 2 m		Power supply side: M8 terminal (3) Transformer side: M8 terminal (2) M6 terminal (1) CE compliant
	PK-1205245 (1205245)	600 V VCT cable 22 sq-3 cores, 5 m		
	PK-1205246 (1205246)	600 V VCT cable 22 sq-3 cores, 10 m		
	PK-1209850 (1209850)	600 V VCT cable 22 sq-3 cores, 2 m	IS-1400A	Power supply side: M12 terminal (2) M10 terminal (1) Transformer side: M8 terminal (2) M6 terminal (1)
	PK-1209851 (1209851)	600 V VCT cable 22 sq-3 cores, 5 m		
	PK-1209852 (1209852)	600 V VCT cable 22 sq-3 cores, 10 m		
	PK-1208454 (1208454)	600 V VCT cable 22 sq-3 cores, 2 m		Power supply side: M12 terminal (2) M10 terminal (1) Transformer side: M8 terminal (2) M6 terminal (1) CE compliant
	PK-1208455 (1208455)	600 V VCT cable 22 sq-3 cores, 5 m		
	PK-1208456 (1208456)	600 V VCT cable 22 sq-3 cores, 10 m		

2. Connection and Circuit Diagram

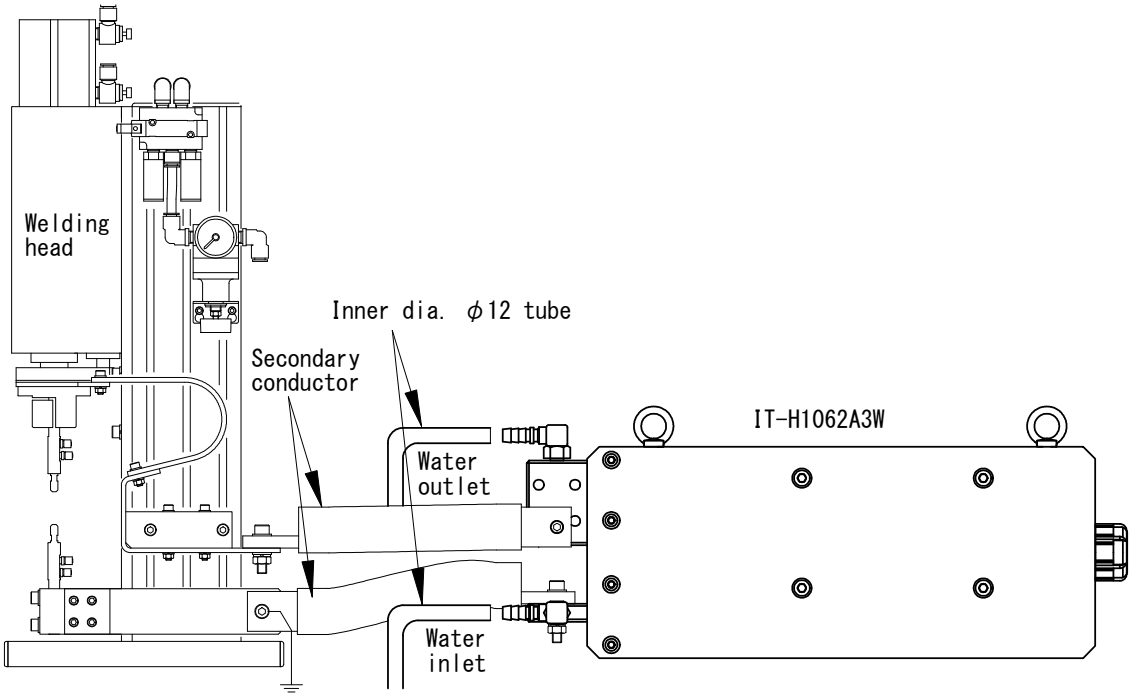
(1) Connection

Example connection with the inverter-type welding power supply

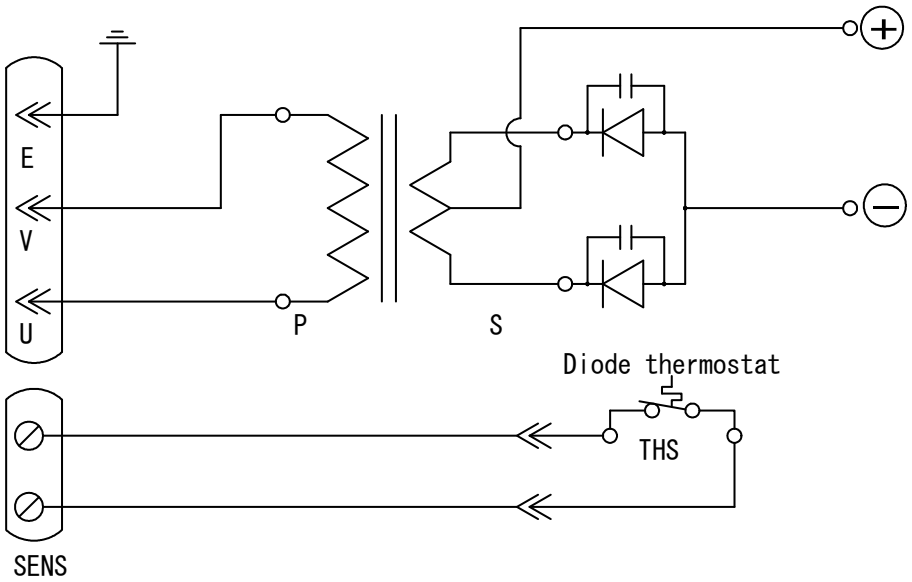


The output cable and thermal sensing cable are sold separately.
The terminal screw of **IT-H1062A3W** is M8 (PE terminal is M6).

Example connection with the welding head and the cooling water



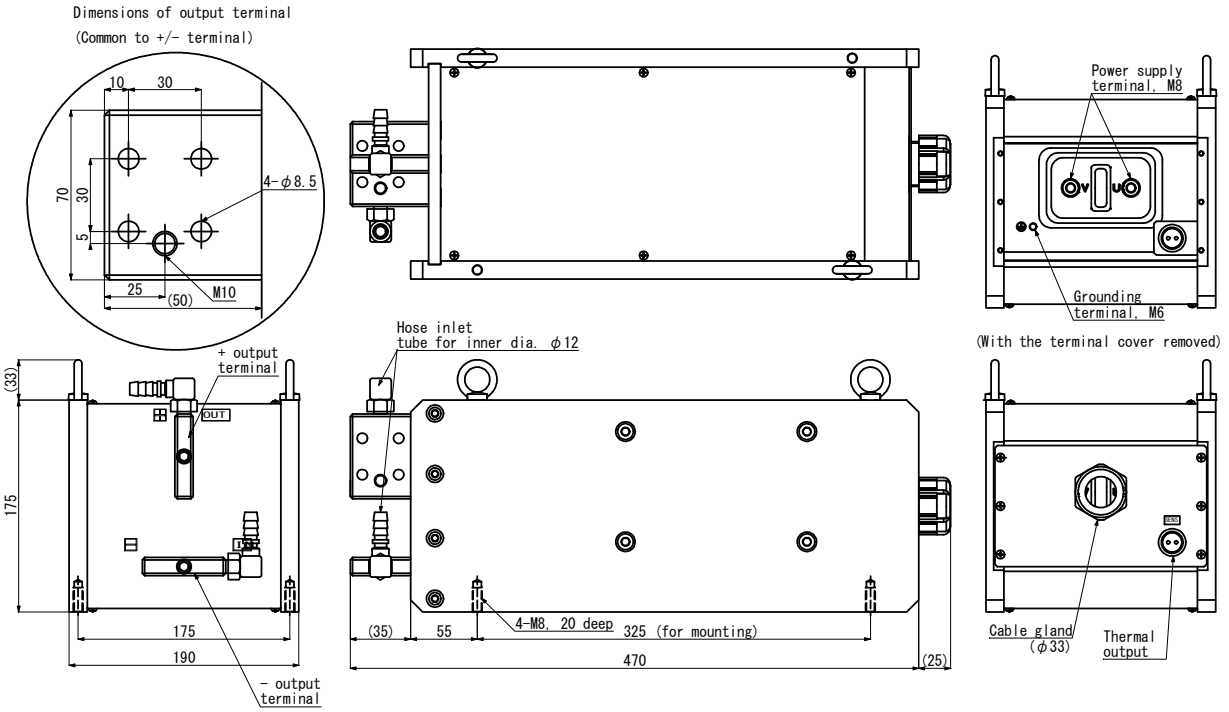
(2) Circuit Diagram



3. Outline Drawing and Specifications

(1) Outline Drawing

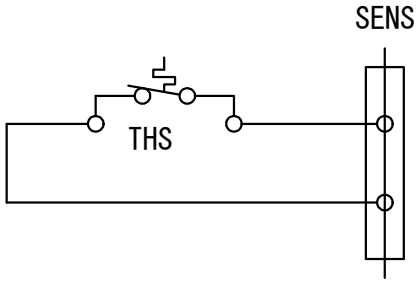
(Dimensions in mm)



(2) Specifications

Rated supply voltage	300 V AC
Number of phases	1
Rated frequency	1 kHz
Rated permanent apparent input power	31.2 kVA (100% rating)
No-load voltage values	12.5 V (Turn ratio: 24:1)
Output current under load condition	8500 A (Resistance load: 800 μΩ)
Permanent output current	2493 A
Maximum duty cycle	8.6% (8500 A)
Cooling method	Water cooling
Rated cooling liquid flow	30°C or less, 3 L/min. or more (Water pressure: 0.2 MPa or more and 0.5 MPa or less)
SENS output	70°C, B-contact thermal sensor
Operating environment	Temperature +5°–+45°C, Humidity 90% or less (Dew condensation not allowed), Altitude 1000 meters or lower Caution: Use this product in the environment without conductive dust. If conductive dust enters in the product, this may result in a failure, electric shock, or fire. When using this product in this environment, make contact with us.
Storage environment	Temperature -10°–+55°C and dew condensation not allowed
Insulation class	F
Protection class	IP20
Protection class for electric shock	I
Compliance standards	ISO 5826:2014
Mass	25 kg
Outline dimensions	175 (H) mm × 190 (W) mm× 470 (D) mm (Not including projections)

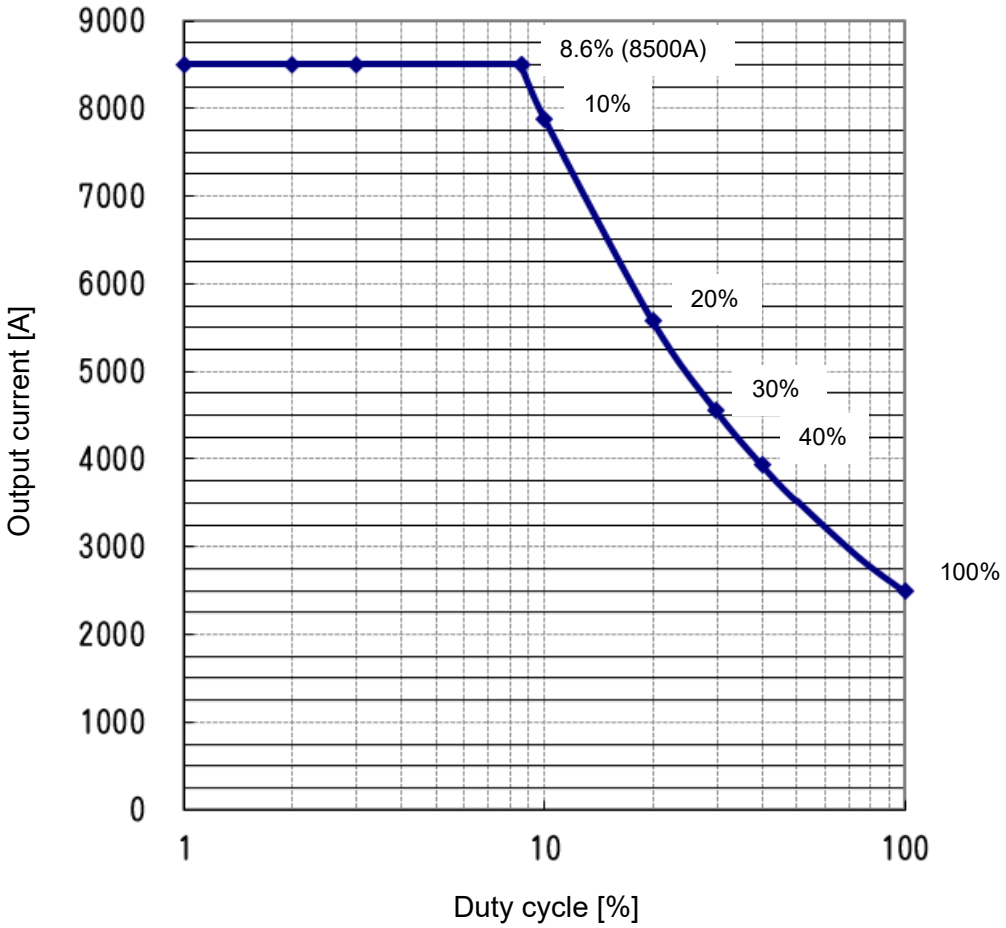
(3) SENS Output



Connector, SNS-1602-RM
(SANWA DENKI KOGYO Co., Ltd.)
or
Thermal sensing cable (option)

(4) Duty Cycle Graph

Environment: Temperature 45°C or less
Water temperature 30°C or less
Flow rate 3 L/min. or more



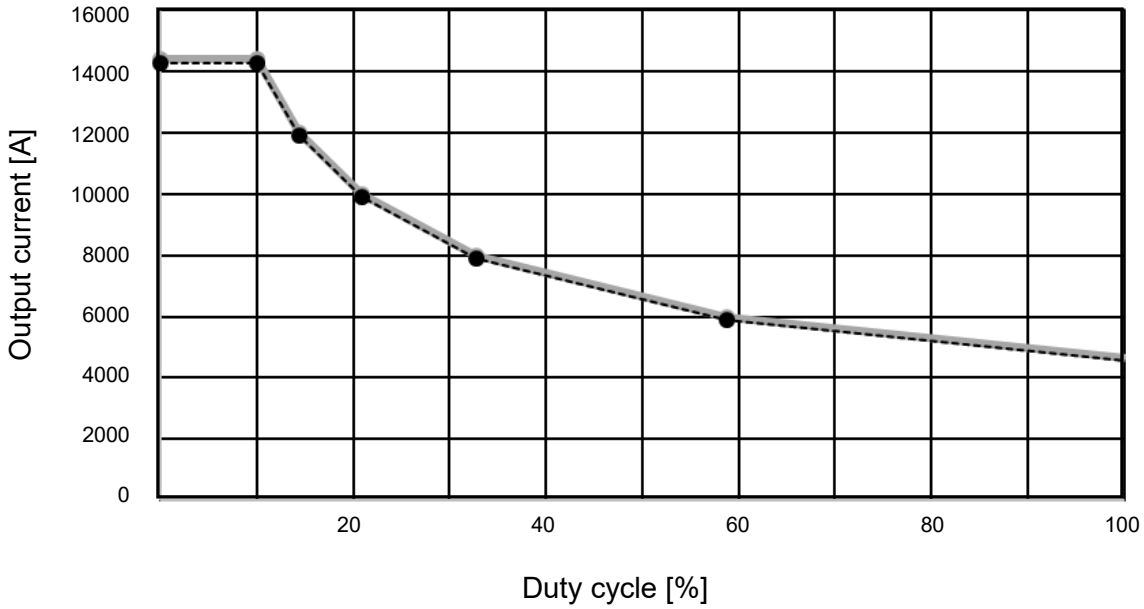
4. Comparison with SIT-F241-HC

(1) Specifications

	SIT-F241-HC	IT-H1062A3W
Conformity welder	IS-300A/600A/800A/1400A	
Cooling method	Water cooling	
Outline dimensions	240 (H) × 180 (W) × 481 (D) mm	175 (H) × 190 (W) × 470 (D) mm
Mass	35 kg	25 kg
Output current under load condition	6800 A (Resistance load: 800 μΩ)	8500 A (Resistance load: 800 μΩ)
Maximum output current	14400 A (Duty cycle: 10%, Resistance load: 299 μΩ)	
Turn ratio	24:1	

(2) Duty Cycle Graph

Black dotted line: **SIT-F241-HC** Gray solid line: **IT-H1062A3W**



(3) Options

	SIT-F241-HC	IT-H1062A3W
Name	SENS cable	Thermal sensing cable
Model No.	SEN-C20-C2SGO	SK-1205604
	SEN-C30-C2SGO	SK-1205605
	SEN-C50-C2SGO	SK-1205606