INDUCTION **UNIT**

Operating **Manual**

Contents

Product Liability and Warranty

General

This operating manual is part of the technical documentation for the INDN BS UNIT.

These operating instructions are important in order to operate the device safely, properly and economically. Their attention helps to avoid hazards, reduce repair costs and downtime, and increase the reliability and service life of the entire machine.
Their content corresponds to the state of construction of the device at the time of creation of these operating instructions. Changes tothe design and the technical data are reserved due to continuous further development and customerspecific design.

Therefore, no claims can be derivedfrom the content of these operating instructions (information, graphics, drawings, descriptions, etc.) The error is reserved!

These instructions shall be read and applied by any person responsible for working on the equipment:

Operation
including setup, troubleshooting in the workflow, disposal of production waste,care, disposal of operating and auxiliary materials

Maintenance
Maintenance, inspection, repair

Transport

In addition to the operating instructions and the binding regulations for accident prevention applicable inthe country of useand at the place of use, the recognized technical rules for safety and professional work must also be observed, as well as the respective workshop-specific rules.

Warranty

The device is expected to maintain its performance, operational safety and workaccuracy for many years. However, this is only guaranteed if the regulations for operation, maintenance and servicing are complied with.

During the warranty period, any disturbancesthat occur will be eliminated in accordance with our warrantyterms and conditions. Unauthorized conversions and changes cause immediate loss of the manufacturer's warranty and all consequences thereof are at the expense of the operator. This applies in particular to such changes that impair the safety of the device.

Warranty is assumed exclusively for original spare parts.

This operating manual does not extend our terms and conditions of sale and delivery.

Intended Use

The INDN BS unit is used for the thermal clamping and tensioning of machining tools in shrink chucks as well as to support the cooling of the heated tool holders.

Any other or other use shall be deemed not to bein accordance with the requirements. We are not liable for any resulting damages. The risk is borne solely by the operator.

The intended use includes the observance of the operating instructions and compliance with the prescribed inspection and maintenanceintervals.

INDN BS unit

1. Coil
2. Hand lever
3. Operation indicator
4. Pushbutton coil
5. Predefined barcodes
6. Pole disc storage
7. Barcode scanner
8. Main switch power supply
9. Pushbutton cooling

Cleaning and Maintenance

The surface of the device can be cleaned with a damp cloth. Make sure that no liquid is allowed to penetrate into the device. Rub the guide rods of the coil unit regularly with a lint-free cloth to avoid contaminationof the plain bearings.

Service

For special problem solutions as well as for the execution of repairs and all changes that are not described in this operating manual, we are at your disposal. If you have any problems or queries, make a note of the device serial number and the serial number of the generator. The serial number of the device can be found on the nameplate on the left side of the device.

Symbols and Pictograms

The following hazard warnings are used in theoperating instructions.

	**Caution**	Possibly imminent danger. If this is not avoided, minor or minor injuries can be the result.
	**Warning**	Possibly imminent danger. If this is not avoided, death or serious injuries can be the result.
	**Danger**	Possibly imminent danger. If this is not avoided, death or serious injuries are the result.

Furthermore, general information is used.

	**Hint**	Identifies a potentially harmful situation. If this is not avoided, the plant or something in its environment can be damaged.

Furthermore, bids are used, which must be strictly followed.

	**Wear Safety Glasses!**	Risk of eye injury.
	**Wear Gloves!**	Risk of injury from cuts or burns.
	**Follow the Instructions for Use!**	Danger due to incorrect operation and wrong action.

Safety

The induction device is built according to the state of the art at the time of delivery and is reliable. Nevertheless, the device may pose a risk if it is not used by trained or at least instructed personnel and / or not for its intendeduse.

Therefore, please note:

Before commissioning and operating the device, read the operating instructions carefully and familiarize them with the operating elements!

The operating instructions are part of the induction device and must always be easily accessible, legible and complete for allpersons working with the system.

The device may only be operated by trained, instructed personnel!

The device may only be operated as intended and in a functional condition!

The inductiondevice is designed and coordinated for changing tools for IMC group shrink chucks . When shrinking / shrinking in other chuck designs, problems can occur, up to permanent damage to chucks or the induction device itself.

Ifyou make any interventions or modifications to the device, any warranty of the manufacturer expires immediately. The risk of endangering the life and limb of the user or third parties as well as damage to the induction device and other material assets is borne bythe operator!

Choice of Installation Location

The INDN BS unit is designed as a tabletop unit and can be installed safely and vibration-free in a dry and clean workplace.

Protect the device from dirt, dust and splashing water!

Direct sunlight should be avoided.

Dangers from Electrical Energy

In the device there are current-carrying components with contact-hazardous voltages.

Keep the following points in mind for your safety:

	**Electrical Hazards**	The device must not be operated with the housing open! The device may only be opened by our service personnel! Keep the device clean and clean it regularly! Avoid the ingress of metal chips and liquids!

Dangers from Hot Temperatures

The very effective form of heating heats only the relevant edge zones of the chucks with low heat input. The surface of the feed is heated up to approx. 400°C. Coil and other components of the shrink device do not heat up or only insignificantly in properoperation.

	**Risk of Combustion on Hot Parts**	The heat is distributed from the shrinkage area to the tool and chuck if a chuck is not cooled appropriately immediately after shrinking! Do not stop the chuck from cooling after the shrinking process! Only use shrink fit chucks. There is a risk of injury when heating other chucks, especially for hydrodehn chucks!

For your own safetywhen working with the device, follow the following protectivemeasures:

	**Fire**	The device must not be operated in potentially explosive atmospheres! Do not use highly flammable detergents! Make sure that hot partscannot be touched properly! When shrinking tools, wear the supplied gloves to protect against burns and cuts! Place hot tools on the non-flammable, heat-resistant base! Apart from the chuck and tools, do not bring any metallic objects into the interior of the induction coil, otherwise they will also heat up! Do not reach into the heating area of the coil during operation, as rings or chains, for example, heat up very quickly! Wear safety glasses when shrinking! When heating, fragments of tools or recordings can flake off and cause injuries!

Protection of Chucks Against Overheating

When heating shrink chucks, observe the manufacturer's specifications.

	**Hint**	Shrinking too long or heating up a chuck several times in a short time can lead to overheating of the chuck and the tool. Therefore, when shrinking, the shrinkage timeshould be kept as short as possible. Avoid overheating of the chucks due to too long shrinkage times! Do not heat up a heated chuck again without prior cooling to room temperature.

Dangers from Electromagnetic Radiation

With proper use of the system, no hazardous electromagnetic radiation acts on the environment. The radiation safety of the plant is controlled and proven by testing in accordance with the EC Machinery Directive.

	**Electro-Magnetic Fields**	The shrinkingprocess must not be started without the ferrite disc being used. If the induction heating is started without the ferrite disc used, the magnetic field also acts in the downstream area above the coil.
	**Electro-Magnetic Fields**	The shrinking process must not be started without the tool holder being inserted. If the induction heating is started without the tool holder inserted, the magnetic field also acts in the downstream area below the coil.
	**Danger of Death for Implant Wearers and Pacemakers**	There may bea risk of death for implant wearers, especially pacemakers! As a wearer of an implant, especially with a pacemaker, keep a safety distance of 3 m until it is clarified with the manufacturer of the implant or your doctor that the implant remains unaffected by the induction field.

Special Hazards

	**Risk of Crushing and Cutting**	Make sure that you do not bring any body parts or objects into the range of motion of the coil during the operation of the induction device. The weight of the coil can cause bruises and, in conjunction with tool cutting, cuts.
	**Danger of High Voltages**	By using non-ThermoGrip® shrink chucks, hot linings and coil bodies can come into contact and destroy the insulation. In the event of any damage to the coil body and / or electrical device, the device must be stopped immediately and contact the manufacturer.

Installation and Commissioning

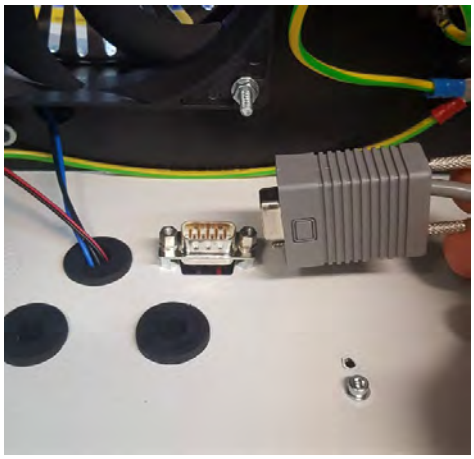
Assembly

	**Hint**	When unpacking the device, make sure that it does not suffer any damage. Observe the assembly order.

Choose a flat, stable table top for the tabletop devices as a suitable installation space.
The tabletop units have no height-adjustable feet and align themselves independently on a flat top.

Commissioning

Proceed as follows during commissioning:

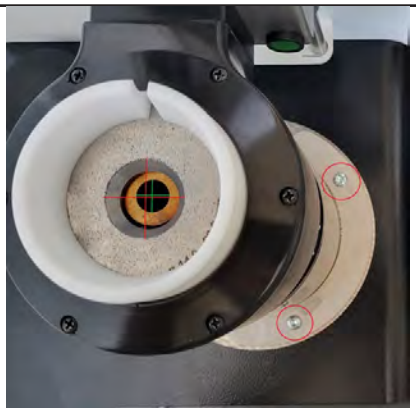
	Carefully lay the device on its back and connect the plug of the scanner cable. Secure the cable with the cable glands.
	Pay attention to a flat installation location and asafe stand of the device. Loosen the transport securing screw by unscrewing it. Move the coil up and down on the handle to check your ability to move.

	Loosen the two marked screws untill scanner holders plate slots can accomodate them. The third screw must not be opened, since it might change shrink holder positioning against coil. In case holder position has been changed and need to be corrected - see coil alignment
	Connect the power supply using the CEE-CEKON connector. Turn on the device at the main switch. The device is now ready for operation.

Setting the Minimum and Maximum Shrink Height

	If you want to adjust the shrink height, there are three height settings available. To do this, remove the upper of the three screws shown and loosen the lower two screws. Set the desired height, add the upper screw in one of the three possible positions and fasten the lower screws again.

Coil Alignment

	If inserted stop disc is no concentric with the tool holder, the shrink position can be fine-tuned. Minor errors can be compensated by loosening the screws marked on the picture and then readjusting crescent-shaped positioning plate

Operation of the INDN BS Unit

A shield enclosing the coil largely prevents stray magnetic fields. Control and high-frequency generator are integrated in the housing. Only a single coil is required for all clamping diameters. All cables to the movable coil are protected.

	**Risk of Eye Injury**	During the heating phase, parts of the heated metal surface can bounce off and cause injuries. Wear safety glasses.
	**Risk of Injury to Cuts**	Sharp edges or metal chips adhering to the tool can cause cuts. Wear protective gloves.
	**Risk of Combustion**	The heat is distributed from the shrinkage area to the tool and chuck if a chuck is not cooled appropriately immediately after shrinking! Do not stop the chuck from cooling after the shrinking process! Only use shrink fit chucks. When heating other chucks, especiallyin the case of hydrodiagnostic chucks, there is a risk of injury!

	Remove the clamping ring by manually pressing and a pole disc that may already be inserted. Insert the appropriate pole disc for the tool holder and the tool into the coil and secure it again with the clamping ring. Move the coil to the top end position.
	Place the appropriate tool holder in the shrink position under the coil.

	Insert the tool holder into the holder of the tool holder.
	Use the handheld scanner to scan the appropriate barcode for the tool holder to set the operating parameters for the next shrink operation.
	Position the coil on stop with the tool holder. Press the push button. If you use predefined parameters, the heating process stops automatically after reaching the set time. If you use manual parameters, the heating process stops when the pushbutton is released. During the heatingprocess, the LED indicator flashes.
	Insert the tool into the tool holder or remove the tool that has already been inserted.

	Warning	Due to the necessary shrink temperatures, move the linings until they cool down only in the appropriate tool holders and always wear protective gloves. Touch the chuck only with gloves and only at the waistband of the machine-side interface and not in the heated zone! The maximum gripping time must not exceed 5 seconds even with protective gloves!

	Return the coil to the top end position.

LED Display Concept

There is an LED in the upper right area of the INDN BS unit for the operating status display. The operating state is coded as follows:

LED 1	Condition
On	Operational
Flashes	Induction coil in operation
Off	Device Errors

If there is a device error, please proceed as follows:

Check if the main switch of the device is turned on.
Check the power supply of the building-side socket.
If these measures do not allow the INDN BS unit to be put into operation, please contact the company or customer service.

Parameter Input Via Barcode Scanner

The supplied barcode scanner is used to enter parameters that are used for the subsequent shrinking processes. Align the red target beam to the barcode to be scanned and press the shutter button on the barcode scanner. The device acknowledges a successful read-in process by means of a beep.

	**Hint**	The predefined barcodes are only valid for original IMC group SRKIN holders. Other types and makes of tool holders may require individual parameters and thus barcodes. Contact your tool holder manufacturer if you have any questions.

Manual parameters:

Heating stops by releasing the actuation switch

Power In %	Barcode
Max. Power 80% = 8kW	PP080

Appendix

What's in the box

- BS Induction Unit
- Clamping ring
- 4 stop discs for SRKIN shrinkable holders.
- Protective gloves
- Barcode scanner
- 12 blank magnets
- Page with SRKIN parameter stickers

Not included - suitable holder adaptor - should be ordered separately.

3449603	INDN BS AD HSK 32	HSK 32
3449604	INDN BS AD HSK 40	HSK 40 /HSK 50 F.B.D
3449605	INDN BS AD HSK 50	HSK 50 /HSK 63 F.B.D
3449606	INDN BS AD HSK 63	HSK 63 /HSK 80 F.B.D
3449607	INDN BS AD HSK 80	HSK 80 /HSK 100 F.B.D
3449608	INDN BS AD HSK 100	HSK 100
3449609	INDN BS AD TAPER #30	SK/BT/CAT #30
3449611	INDN BS AD TAPER #40	SK/BT/CAT #40
3449613	INDN BS AD TAPER #50	SK/BT/CAT #50
3449614	INDN BS AD C3	C3
3449615	INDN BS AD C4	C4
3449616	INDN BS AD C5	C5
3449617	INDN BS AD C6	C6
3449618	INDN BS AD C8	C8

Not included - suitable stop disc - should be ordered separately.

3449266	INDN BS DISC SRK3 #6	SRK Ø 3
3449267	INDN BS DISC SRK4 #7	SRK Ø 4
3449268	INDN BS DISC SRK5 #8	SRK Ø 5
3449270	INDN BS DISC SRK6 #9	SRK Ø 6
3449271	INDN BS DISC SRK8 #10	SRK Ø 8
3449272	INDN BS DISC SRK10 #11	SRK Ø 10
3449273	INDN BS DISC SRK12 #12	SRK Ø 12

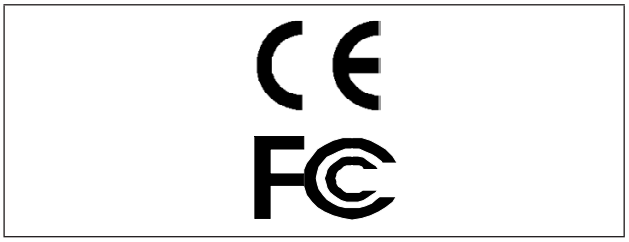
Technical data

Machine Type	INDN BS INDUCTION UNIT
Clamping Range	Ø3-32mm (Carbide)
Coil	Fixed
Max. Tool Length	400mm
Max. Machine Interface	**HSK** A100 / #50 taper cone
Power	8kW
Electric Current Supply	400V / 16A / 50 Hz - EU 480V / 15A / 60Hz – US
Dimensions (W x D x H)	320 x 400 x 840 mm
Weight	20 Kg

EU Declaration of Conformity

In accordance with the EC Machinery Directive 2006/42/EC

IMC BV
declares, that the machine designated below corresponds to the following relevant directives with regard to its design and construction in the version brought into circulation.



Designation of the Machine:	**Induction Unit**
Machine Type:	INDN BS UNIT
Relevant EC Directives:	EC Machinery Directive 2006/42/EC
	EC EMC Directive 2014/30/EC
Applied Harmonized Standards, in Particular:	EN ISO 12100:2010
	EN 60204-1:2006+A1:2009
	EN 61000-6-2:2005
	EN 61000-6-4:2007 + A1:2011
	EN 55011:2009 + A1:2010
	EN 60519-1:2011
	EN 60519-3:2005
Applied National Standards (USA):	FCC 47 CFR Ch. I (Edition 10-1-01), Part 18 C

In the event of any changes to the machine for which we have not been consulted, this statement becomes null and void.

THE COMPANY:

Company Name:	**IMC BV**
Headquarters:	Zwolleweg 6, 2803 PS Gouda, Netherlands

Instructions for Use 5-Finger Protective Gloves

Description: 5-finger heat debriszip gloves; Outer layer of para-aramid yarn (KEVLAR)
Fine knit lined with aramid felt and 100% Nornex knit

Availability: Size 10

Colour: yellow

Manufacturer: JUTEC GmbH, Mellumstr. 23-25, D-26125 Oldenburg

Description: These gloves are designed to protect your hands.
They are from the above mentioned. Material manufactured. Characteristic of these gloves are the long service life and the excellent wearing comfort.

Category: CE 95

Use: Check that the gloves provide suitable protection for the ones you have provide the activity that has just been carried out. Choose the pair of gloves according to the size of your hands.

Remove the gloves from the packaging.

When using the gloves, pay attention to the following points:

The maximum gripping time depends on the position where the grip is made.
To be on the safe side, this must never be longer than 5 seconds.

Due to the open structure of the gloves, they cannot protect the hands against stitches and impacts of sharp objects. Furthermore, the penetration of liquid is possible. To protect against chemicals, a resistant glove should be worn over the glove. Oil, grease and moisture reduce the resistance to cuts of all glovesand should be avoided KEVLAR gloves are tear-resistant. Do not use these near machines with moving parts, as the hand can be pulled into the machine.

Care and Repair: KEVLAR gloves can be dry cleaned orwashed according to the instructions on the label. Wash using water and mild detergents at a maximum of 40°C DO NOT USE plasticizers, bleaching or oxidizing agents, as these weaken the aramid fiber and reduce thecut resistance of the gloves. After washing, carefully check the gloves for cuts and worn areas. Sort out gloves that are too badly damaged and can no longer be repaired, as they nolonger provide protection.

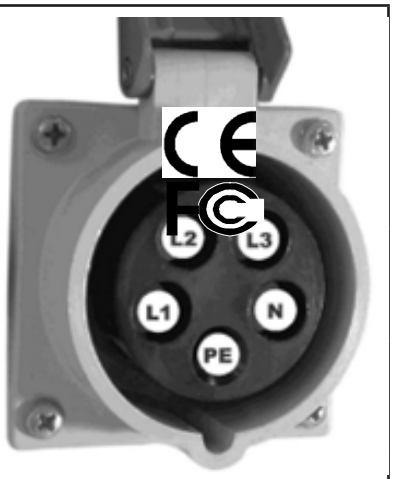
Storage: The gloves should be stored in their original packaging in a dry, clean place. Avoid being exposed to moisture or high temperatures.

Warning: The level of protection required by a specific activity depends on the risks involved, you yourself bear the ultimate responsibility in selecting the appropriate protective equipment for the existing risks in the workplace. Please check that these items provide adequateprotection for the work you are doing. For high-risk work, we offer a range of heavy cut- and heat-resistant KEVLAR gloves.

Buildingside Socket and Fuse for the INDN BS Unit

Occupancy of the 400V 16A-CEE socket:

Pin Designation	Pin Naming	Wire Color
L1	Phase L1	Brown
L2	Phase L2	Black / Grey
L3	Phase L3	Black
N	Neutral	Blue
PE	Protective	Green-yellow



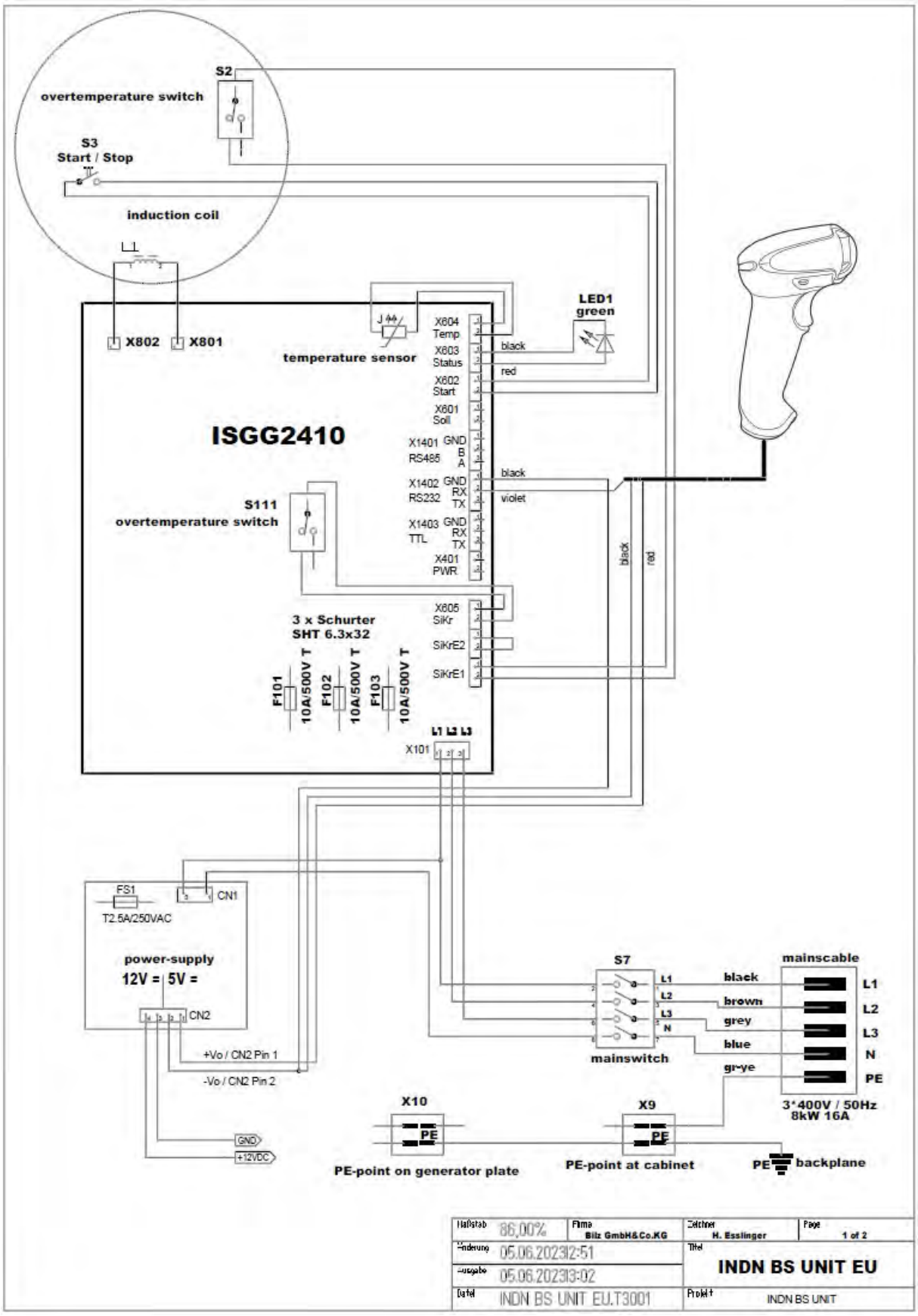
The nominal voltage between the phases is 3x400V (-10/+10%):

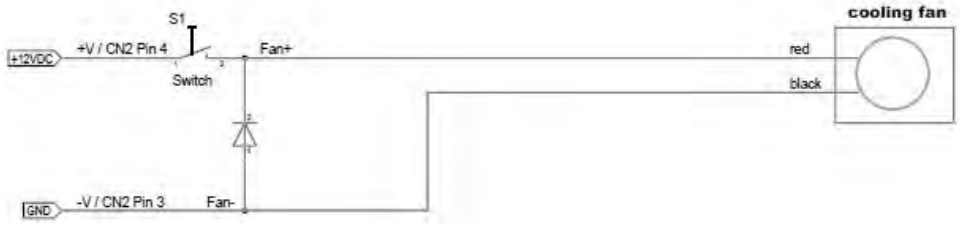
Measurement Between Pins		Voltage (VAC)
N ➔ L1	PE ➔ L1	230
N ➔ L2	PE ➔ L2	230
N ➔ L3	PE ➔ L3	230
L1 ➔ L2		400
L1 ➔ L3		400
L2 ➔ L3		400

	**Hint**	Neutral conductor N and protective conductor PE must be connected. If a residual current circuit breaker is used to protect the CEE socket, it must be 4-pin.

Schematics

INDN BS UNIT EU (400V)





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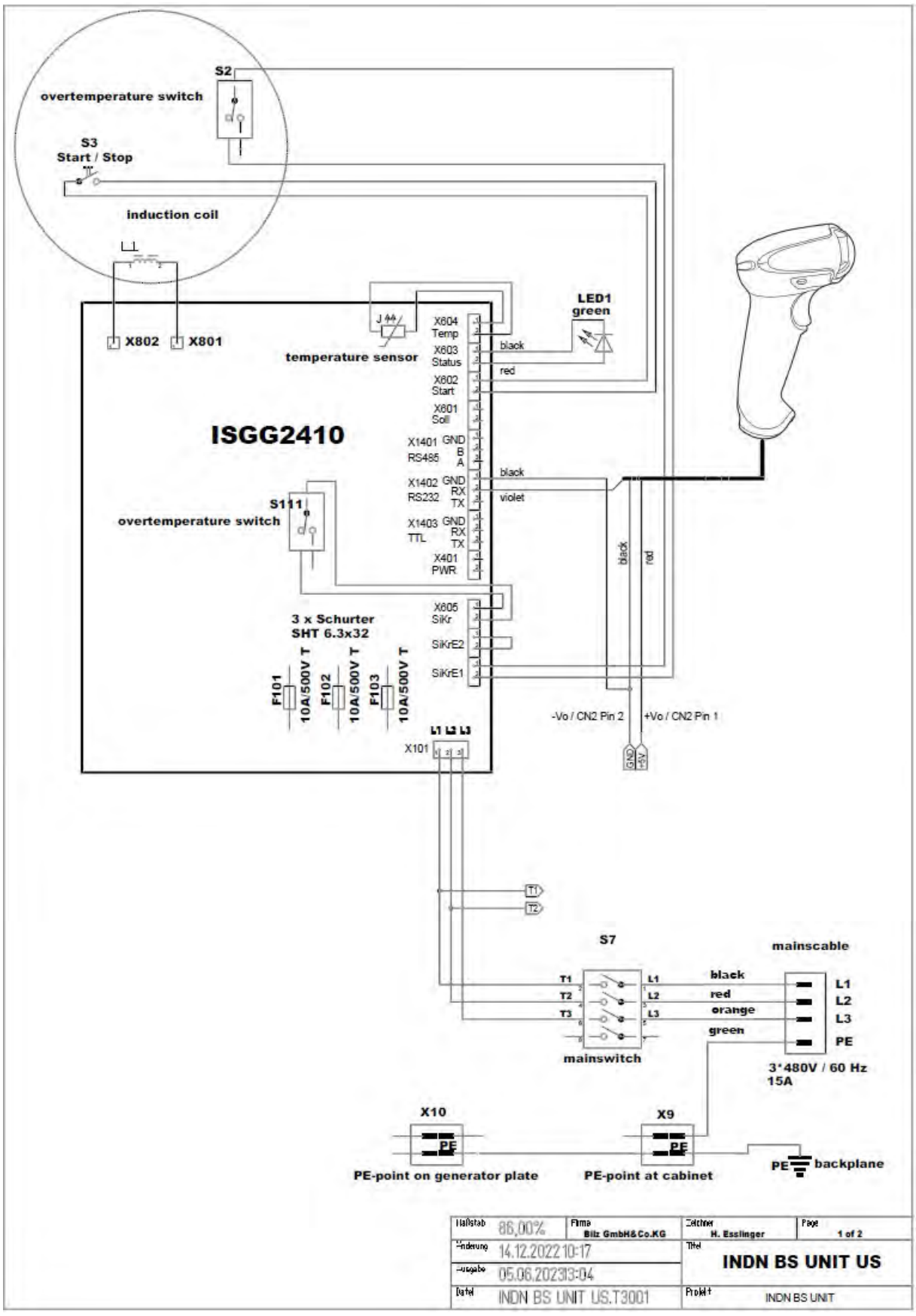
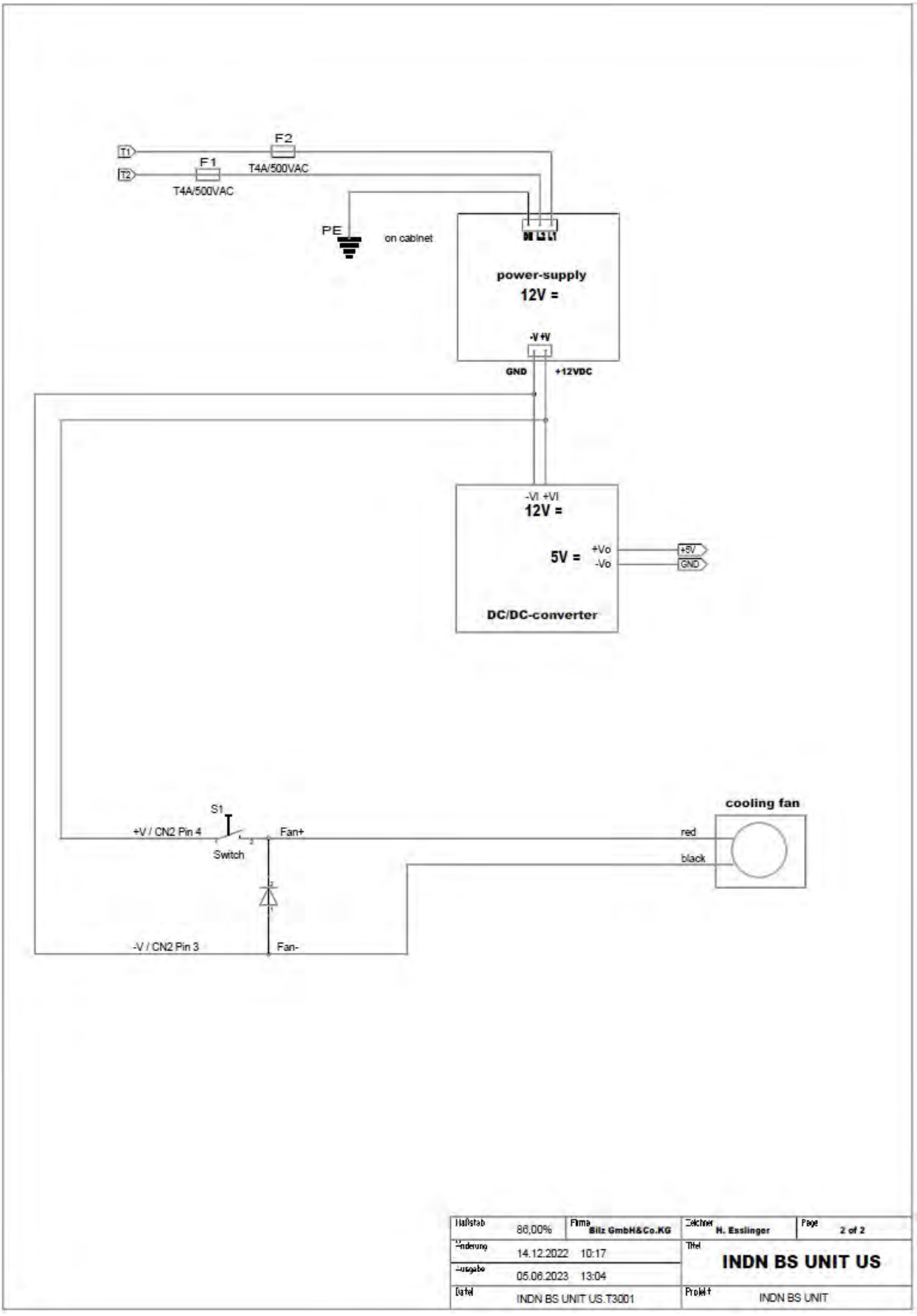
Ausgabe	05.06.2023 13:03						
Datei	INDN BS UNIT EU.T3001	Projekt	INDN BS UNIT				

INDN BS UNIT US (480V)




T1
T2
F1
T4A/500VAC
F2
T4A/500VAC
PE
on cabinet
power-supply
12V =
-V +V
GND
+12VDC
-VI +VI
12V =
5V =
+Vo
-Vo
+5V
GND
DC/DC-converter
S1
+V / CN2 Pin 4
Switch
Fan+
cooling fan
red
black
-V / CN2 Pin 3
Fan-
Maßstab 86,00%
Firma Bilz GmbH&Co.KG
Zeichner H. Esslinger
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Projekt INDN BS UNIT