

## STARTING TO USE THE MCU NS IRS HEATING BOX

### W025.x series



## FIRST THINGS TO DO BEFORE GOING FURTHER

### 1. Check the mechanical integration.

- Do you need NSIRS Standard or do you need optional cooling

### 2. Select the right plugs to power the NS-IRS

- We can provide you with standard sets of harting plug
- Or you can order parts from harting

### 3. Select the regulation mode : **POWER** or **VOLTAGE**

## **IRS must be installed on the machine in a ventilated area....**

The IRS can operate with ambient temperature up to 45 dC, in open air. When confined to a close volume, or if higher ambient temperature are reached (up to 55 dC), the IRS must be equipped with a specific cooling unit



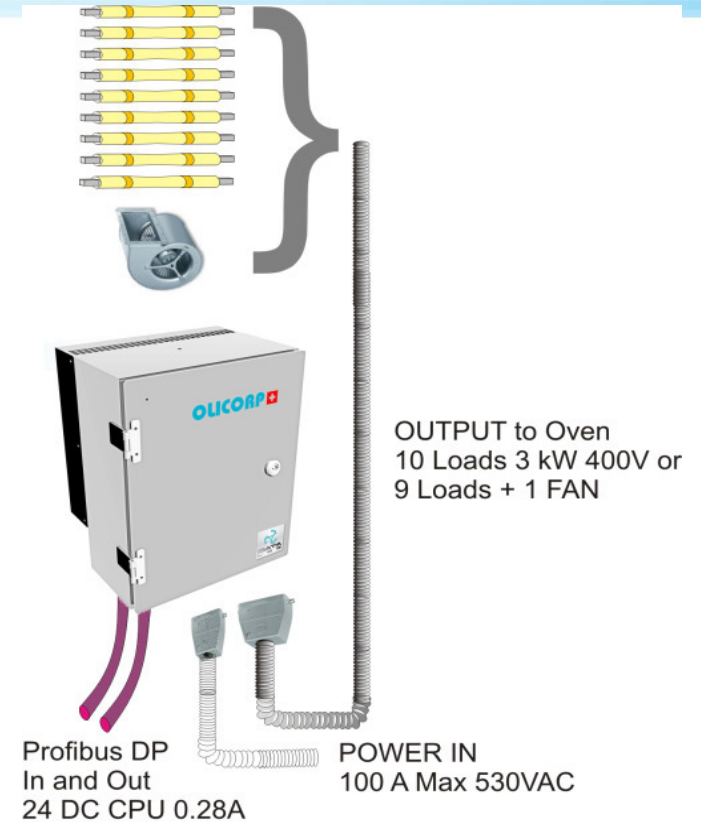
**WO20.11** NSIRS10 With the standard cooling option

**WO20.15** NSIRS10 with cooling option for replacement of OLD IRS or PWR models (up to model WO20.5)

## POWERING the IRS

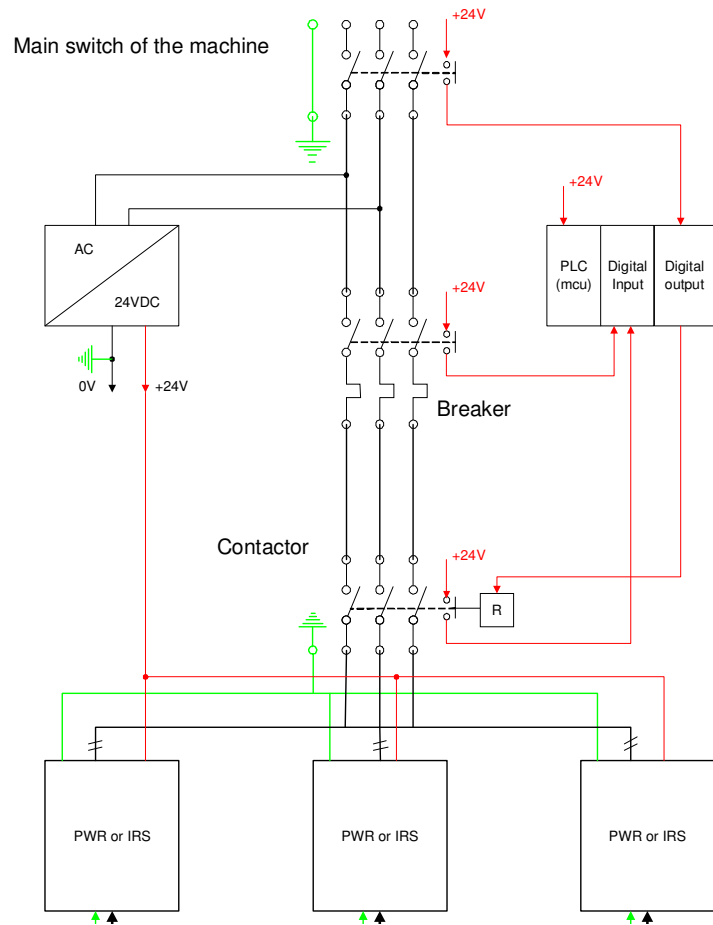
65 Amps 360/530 V are necessary for the power supply

- The IRS must also be connected to :
- 24 DC command 0.28 A consumption
  - Profibus DP in and out



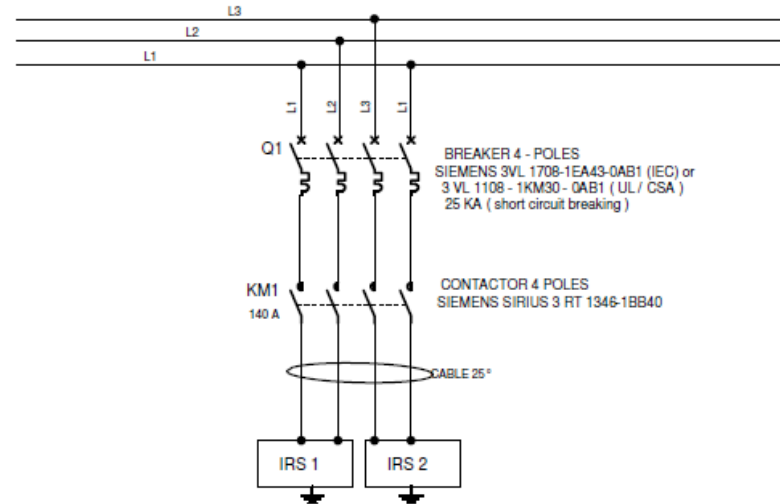
## Authorized lamps configuration :

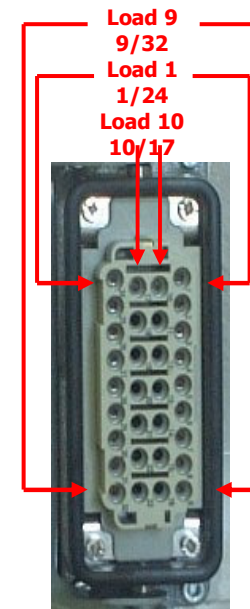
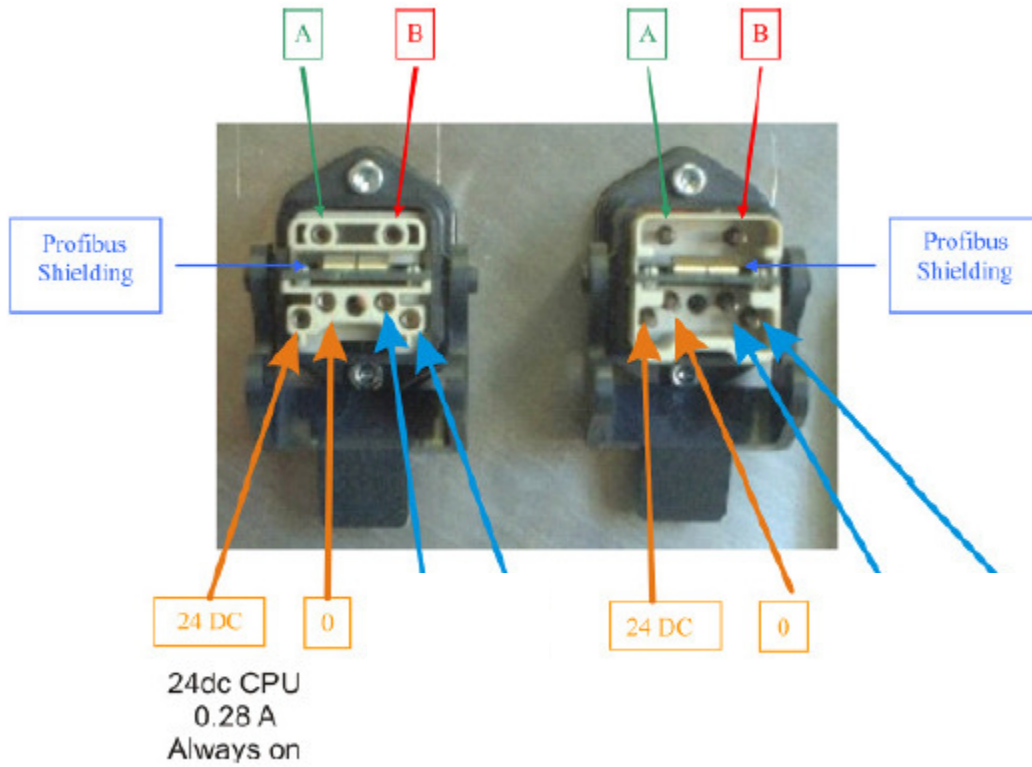
Lamp Nominal Voltage(Vrms)	Power supply Voltage (VAC) +/-10%					
	208	230	400	415	440	480
230	----- -----	1700	1000	950	900	820
360	----- -----	----- -----	2400	2300	2200	2000
400	----- -----	----- -----	3000	2900	2700	2500



breaker 80A, breaking capacity at least 25KA, I magnetic 600 to 800A

## Merlin Gerin NS100 80A 25KA





## CHOOSING THE HARTING SETS : (We suggest WO10.6, WO22.1, WO23.1)

24 DC and PROFIBUS  
Input and output



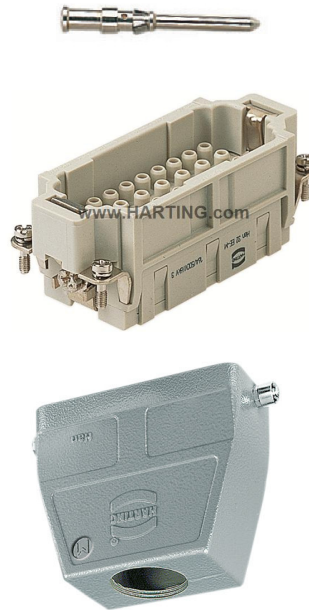
### Assembleable MF

- 120 cm WO10.6
- 500 cm WO10.7
- 800 cm WO10.8

### Assembleable M

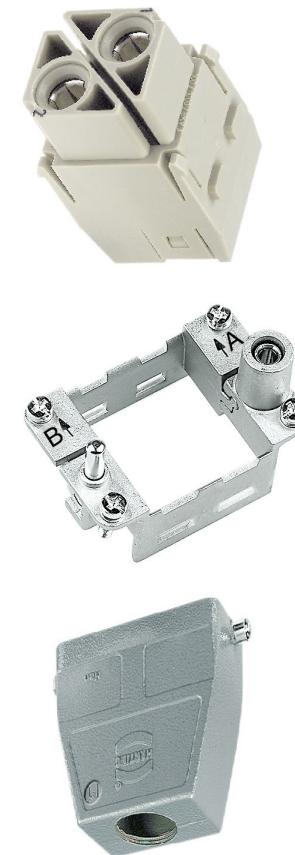
- 500 cm WO11.3
- 800 cm WO11.4
- 1000 cm WO11.5

Connection to Oven



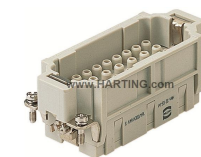
Kit components WO23.X

Power Supply



Kit components WO22.X

KIT includes 1 green and all blue components.			OLIC Ref	Harting Ref
WO23.2	1	Boîtier 16B 90° M32 Low profile	PX53.1	19 30 016 1542
WO23.5	1	Boitier 16B direct M32 Low Profile	PX79.1	19 30 016 1442
WO23.4	1	Boitier 16B direct PG21 Low Profile	PX75.1	09 30 016 1440
WO23.6	1	Boitier 16B 90d PG21 Low Profile	PX89.1	09 30 016 1540
WO23.1	1	Boitier 16B direct M32 High Profile	PX80.1	19 30 016 0447
WO23.X	1	Insert mâle Han 32EE	PX54.1	09 32 032 3001
	20	Contact mâle S=2.5/AWG 14	PX55.1	09 33 000 6102
WO10.6	2	boitier 3A Direct M20	PX56.1	19 20 003 0426
	1	Insert male profibus	PX57.1	09 12 006 3001
	2	Contact male 0.14-0.37/AWG26-22	PX59.1	09 15 000 6104
	4	Contact male 1.5/AWG16	PX60.1	09 15 000 6101
	1	Insert femelle profibus	PX62.1	09 12 006 3111
	2	Contact femelle 0.14-0.37/AWG26-22	PX58.1	09 15 000 6204
	4	Contact femelle 1.5/AWG 16	PX61.1	09 15 000 6201
	2	Prese etoupe pour PFBUS M20 Pastic 5 mm-	PX66.2	19 00 000 5155
	150 cm	Cable hybride PF +2 x 24DC (150 cm)	PW8.1	
WO22.x	1	Insert femelle 100 A 2X16 mm2 + ground	PX63.1	09 14 002 2751
	1	câble shoe	PX47.1	09 14 000 9912
	1	Cadre à 2 modules A..B	PX64.1	09 14 006 0303
WO22.1	1	Boîtier 6B Direct M32	PX65.1	19 30 006 0447
WO22.2	1	Boitier 6B 90d PG21	PX90.1	09 30 006 0543
WO22.3	1	Boitier 6B Direct PG21	PX77.1	09 30 006 0443





## **CHOOSING BETWEEN VOLTAGE REGULATION AND POWER REGULATION**

**The choice of the regulation mode require to select a specific firmware.**

To update the firmware, one must use the supervisor program

VOLTAGE REGULATION : FIRMWARE 20.xx HW 101

POWER REGULATIORN : FIRMWARE 5.xx HW20

### **Procedure :**

- Install supervisor on a PC
- Connect to IIRS using a serial cable
- Upload the fimware
- Configure the setting of the IRS according to images next page.

**PWR24 Hardware Settings**

**Identification**

Hardware Version :   Update  
MainMaxVolts :  V (700 - 900 V)  
MainMaxAmps :  , A (10 -20 A)  
ID :

**Current Configuration**

**Running Mode :**  
 Single Cycle  
 Phase Angle  
 Always use Rnom

**Broken Lamp :**  
Factor :  %  
Tick :

**Burst Firing :**  
Threshold :   
Power :  W

**New Configuration**

**Running Mode :**  
 Single Cycle  
 Phase Angle  
 Always use Rnom

**Broken Lamp :**  
Factor :  %  
Tick :

**Burst Firing :**  
Threshold :   
Power :  W

**SrvVoltages**

	New	Current
1:	<input type="text" value="0"/>	<input type="text" value="0"/>
2:	<input type="text" value="0"/>	<input type="text" value="0"/>
3:	<input type="text" value="0"/>	<input type="text" value="0"/>
4:	<input type="text" value="0"/>	<input type="text" value="0"/>
5:	<input type="text" value="0"/>	<input type="text" value="0"/>
6:	<input type="text" value="0"/>	<input type="text" value="0"/>
7:	<input type="text" value="0"/>	<input type="text" value="0"/>
8:	<input type="text" value="0"/>	<input type="text" value="0"/>
9:	<input type="text" value="0"/>	<input type="text" value="0"/>
10:	<input type="text" value="0"/>	<input type="text" value="0"/>
11:	<input type="text" value="0"/>	<input type="text" value="0"/>
12:	<input type="text" value="0"/>	<input type="text" value="0"/>

**Nominal Powers**

	New	Current
1:	<input type="text" value="0"/>	<input type="text" value="0"/>
2:	<input type="text" value="0"/>	<input type="text" value="0"/>
3:	<input type="text" value="0"/>	<input type="text" value="0"/>
4:	<input type="text" value="0"/>	<input type="text" value="0"/>
5:	<input type="text" value="0"/>	<input type="text" value="0"/>
6:	<input type="text" value="0"/>	<input type="text" value="0"/>
7:	<input type="text" value="0"/>	<input type="text" value="0"/>
8:	<input type="text" value="0"/>	<input type="text" value="0"/>
9:	<input type="text" value="0"/>	<input type="text" value="0"/>
10:	<input type="text" value="0"/>	<input type="text" value="0"/>
11:	<input type="text" value="0"/>	<input type="text" value="0"/>
12:	<input type="text" value="0"/>	<input type="text" value="0"/>

**VOLTAGE REGULATION FIRMWARE  
BEST CONFIG**

X

### PWR24 Hardware Settings

**Identification**

Hardware Version :    Update

MainMaxVolts :   V (700 - 900 V)

MainMaxAmps :   ,  A (10 -20 A)

ID :

**Current Configuration**

**Running Mode :**

Single Cycle

Always use Rnom

**Broken Lamp :**

Factor :  %

Tick :

**Burst Firing :**

Threshold :

Power :  W

**New Configuration**

**Running Mode :**

Single Cycle

Phase Angle

Always use Rnom

**Broken Lamp :**

Factor :  %

Tick :

**Burst Firing :**

Threshold :

Power :  W

**SrvVoltages**

	New	Current
1:	<input type="text" value="400"/>	<input type="text" value="400"/>
2:	<input type="text" value="400"/>	<input type="text" value="400"/>
3:	<input type="text" value="400"/>	<input type="text" value="400"/>
4:	<input type="text" value="400"/>	<input type="text" value="400"/>
5:	<input type="text" value="400"/>	<input type="text" value="400"/>
6:	<input type="text" value="400"/>	<input type="text" value="400"/>
7:	<input type="text" value="400"/>	<input type="text" value="400"/>
8:	<input type="text" value="400"/>	<input type="text" value="400"/>
9:	<input type="text" value="400"/>	<input type="text" value="400"/>
10:	<input type="text" value="400"/>	<input type="text" value="400"/>
11:	<input type="text" value="400"/>	<input type="text" value="400"/>
12:	<input type="text" value="400"/>	<input type="text" value="400"/>

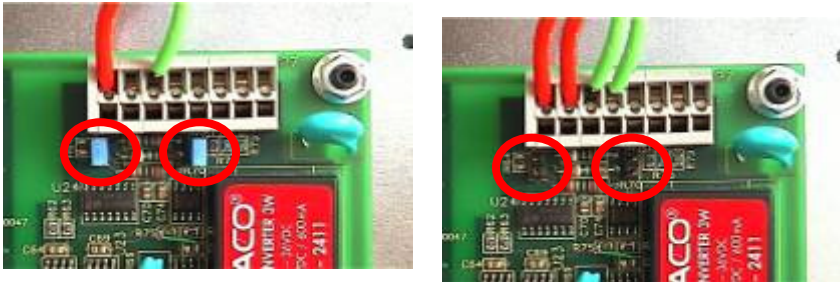
**Nominal Powers**

	New	Current
1:	<input type="text" value="3000"/>	<input type="text" value="3000"/>
2:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
3:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
4:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
5:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
6:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
7:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
8:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
9:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
10:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
11:	<input type="text" value="2500"/>	<input type="text" value="2500"/>
12:	<input type="text" value="2500"/>	<input type="text" value="2500"/>

POWER REGULATION FIRMWARE  
BEST CONFIG

## PROFIBUS DP Configuration :

1. Connect the IRS to a PROFIBUS DP Master



*Bus Termination 50 Ohms ON / OFF*

2. Configure the network using olic0594.gsd
  - Protocole
    - IRS\_PWR\_STD12
    - IRS\_PWR\_STD12\_SHORT

SHORT is easier to work with.

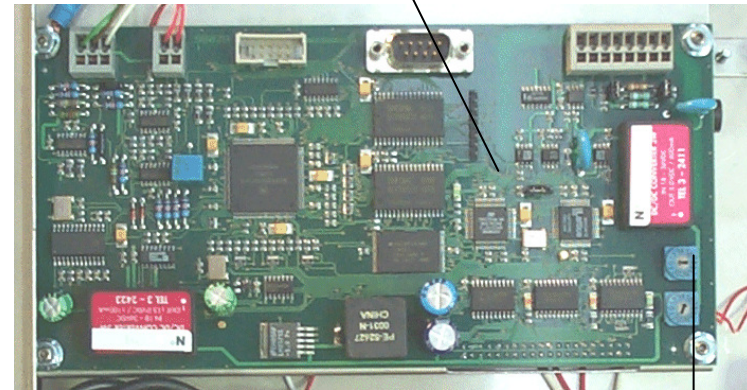
In STD12 we need to provide

- Lamp configuration (Voltage, power), Power settings for the regulation and On/off command

In STD12 Short.

- The lamp configuration is stored in the flash memory of the IRS and doesn't need to be passed through profibus.

LED Green  
Profibus OK



Profibus ID

Command	Reserved.	P not Ok		BL		Sqr(Vrms)			
0	1	2	3	4	5	6	7	8	9

**Byte 0 : Command byte content :**

bit	Meaning
1	Reserved
10	Reserved
100	Reserved
1000 Read Only	1 = Alarm "Overload" 0 = Normal state.
10000	1 = Regulation ON (ON Command acknowledge) 0 = Regulation OFF
100000 Read Only	1 = Alarm "CutOut" (Breaker) 0 = Normal state.
1000000 Read Only	1 = Alarm "OverHeat" 0 = Normal state
10000000 Read Only	1 = Alarm "SectorDefault" 0 = Normal state.

**Byte 2 and 3 : P not Ok byte content :**

1 bit per lamp. The bit is turned to 1 when the Ns-IRS can not apply the required power to the given lamp. 4 bits reserved.

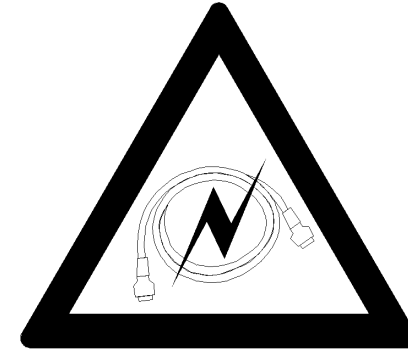
V1	V2	...	V1 2	Rs 1	...	Rs 4
bit0	bit 1		11	12		15

**Byte 4 and 5 : BL Dead Lamp byte content :**

1 bit per lamp. The bit is turned to 1 when the NS-IRS detects a load fault

L1	L2	...	L12	Rs 1	...	Rs 4
bit0	bit 1		11	12		15

		Exception	Effect
Software treatment of the exception	An alarm is emitted The regulation can be stopped	Sector Default : Vsupply < 100V during more than 1 second	The regulation stops, An alarm is sent to the PLC. The system needs a software reset to restart (regulation off and then on)
		Power not reach : Power applied < power expected	The regulation goes on, an alarm is sent to the PLC
		Dead lamp	The regulation goes on, an alarm is sent to the PLC
		OverLoad I > 200 A	The regulation stops. An alarm is sent to the PLC. The system needs a software reset to restart (regulation off and then on)
		Temperature to high	The regulation stops. An alarm is sent to the PLC
	No alarm	Profibus down	The regulation is stopped and will start again when the Profibus DP will be back
		24 VDC down	Should never happen when main supply is on. The regulation stops.
No treatment	PLC failure	If the Profibus watch dog is not affected, the NS-IRS can not see it. The regulation goes on.	
	24 VDC starts after the HV supply	Should never happen. Non deterministic. It can damage the electronics.	
	The current in one channel is higher than 7.5 A continuously but the total current remains below 200 A	We can not detect that. After a while the thyristor will be damaged.	





Thank you

# OLICORP

**Global contact :**

[Support@olicorp.ch](mailto:Support@olicorp.ch)

OLICORP Montbrillant 26, 1201 Geneva  
Switzerland

Phone +41 22 309 1540, Fax +41 44 355 3820

