

STAGEMAKER



OWNER'S MANUAL

RIGGER SCxSR CONTROLLERS



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GLOSSARY

ES	Emergency stop
PB	Pushbutton
LV	Low voltage

Purpose of this guide

The purpose of this guide is to accurately describe the operation of the system from the user's point of view. It firstly sets out the general operation of the system then details the hardware and software.

1- INTRODUCTION

STAGEMAKER® CONTROLLER was specifically developed to control VERLINDE STAGEMAKER® SR series electric chain hoist. Controllers are available with 4 or 8 channels; they fit into a 19" rack flight case.

For more extensive applications, STAGEMAKER® CONTROLLERS can be interconnected to control systems integrating 16 motors or even more. The standard system provides for the simultaneous activation of all the preselected motors by means of the START button. Other interconnections are available on request.

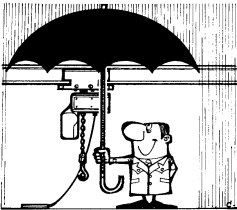
STAGEMAKER® CONTROLLER® fully complies with the most recent European electricity standards (IEC standards / EMC directive) and is approved by APAVE (French inspection authority). They offer great flexibility, toughness and safety.

1.1 Characteristics / RIGGER controller equipment for type A hoists (Direct control):

- System of phase detection and automatic correction for the entire RIGGER range.
- Power supply: 400 / 415 V 3 Phase ~N- 50/60Hz.
- 5-pole CE 32 A power plug for 4or 8 channels
- Hoist output connections by P17 CE (1 motors per connector)
- Control voltage 24/48 Vdc
- Protection against short circuits
- Thermal protection by groups of 4 motors
- Master/slave function: 2 or more controllers can be coupled
- Max. power per channel: 1.8 kW / 400V 3Phases

1.2 Safety instructions - THINGS TO DO:

- Place the controller in a protective cover (if a standard protective cover is not provided).
- Manipulate the controller with the handles located at front or on sides.
- Store the controller in its normal working position sheltered from aggressive environments (dust, humidity, etc).
- Make sure the controller is systematically clean and free from corrosion.
- The installation of the controller must be carried out by a skilled technician.
- Make sure that connecting cables are in good condition and that the connectors are properly installed.
- Make sure connecting cables are always installed symmetrically.
- If the hoist direction does not correspond with Up / Down signals on the controller, check intermediary wiring and change two phases.
- If none of the hoists correspond with signals, change the phases using the inversion device in the CE plug or the reversing switch (careful to cut power beforehand).
- Only use authentic spares to replace parts.
- Always be ready to hit the emergency stop button during operations. All functions shall then be disabled.
- Before starting, make sure that the load is properly secured and installed on the hook. The safety latches must be properly closed.
- Make sure the load is well balanced before moving it.
- Make sure that each hoist is perpendicular with the load and that it hangs freely on its chain before starting any simultaneous action.
- If the system is used in the open air, use adequate guards against inclement weather.
- Operate the equipment under standard working conditions (ambient temperature, environment, etc.).
- The handling of single items or sets of beams must be entrusted to experienced operators.
- Take all necessary precautions to ensure the load is evenly distributed and avoid overloading any single hoist in the case of multiple use. Each hoist must be carefully checked before such use.
- Inform the supervisor of any dangerous functioning or of one which is not reassuring. (Abnormal noise, abnormal behaviour, etc.).



Equipment used in the open air must be protected as much as possible from inclement weather.

THINGS NOT TO DO:

- Never connect a STAGEMAKER controller control unit to any power source other than that indicated on the unit.
- Only set down the controller on an adequate support in order to avoid damaging the components located at the rear.
- Never modify the controller without the maker having first studied and authorized the modification.
- Never modify the settings and adjustments of safety devices beyond the limits set out in the manual or without the maker's authorization.
- Never try to repair or carry out any special operation on the controller without the authorization of the maker or a skilled electrician.
- Never allow any unqualified person to use the controller.
- Never connect a number of hoists greater than the number of available outputs (channels) or the number of available selectors.
- Do not use additional distribution boxes to connect several hoists per channel.
- Avoid shocks or accidental collisions with other objects.
- Never open the controller when the system has power on.
- Never jam or lock the Start button to carry through a manipulation without manual control.
- Do not use the controller if the physical state of the operator will not allow it.
- Never use the controller if it is in bad condition.
- Never use unauthentic spare parts or those suspected of being so.
- Do not allow the controller to receive blows.
- Never distract the operator while he is operating the system.
- Do not use the controller for any function or in any zone for which it is not intended.
- Do not expose the controller to any aggressive environment (temperature, acidity, etc.).
- Do not use safety items as operational items (emergency stop, main fuse, etc.).
- Do not use controls for no useful purpose (avoid very slow movements – repetitive stop-starts with buttons), that can cause overloads or even damage the hoist.
- Do not change the direction of the hoist when the START button is held down (energized hoist)
- If the direction of the hoist does not match the display on the controller, do not modify phases inside the controller but simply change two phases on the hoist motor or on the connection cables.
- Never use hoists that operate in the opposite direction to the selected travel movement.
- Do not connect the controller to any unknown electrical power supply; check that the power supply matches the specifications of the controller and of hoists. (undervoltage or overvoltage +/- 5%, phase failure, etc.).

1.3 Warranty

Our STAGEMAKER controllers are guaranteed for one year as from the delivery date.

If a delivery delay were to occur for a reason outside the supplier's control, the said delay period will not exceed three months.

If the operation (installation) of the controller is delayed, an extension of validity corresponding with the warranty period should be requested (one unique extension limited to three months) and written confirmation obtained.

The supplier undertakes to remedy all operating errors resulting from the design or manufacture or from components or materials.

The warranty covers neither normal wear nor failures resulting from abnormal use. Furthermore, it does not cover damage due to a lack of supervision, operating errors or incorrect use of the controller, especially due to an overload, handling movements that are too slow, undervoltage / overvoltage or errors of connection.

The warranty is inapplicable in cases of disassembly, modification or replacement of parts (mechanical or electrical) by a non-authorized person or without our prior agreement.

The warranty applies only to original parts assembled in the factory.

During the warranty period the supplier undertakes to replace or repair in their workshop, free of charge, parts that are ascertained to be damaged after inspection by a qualified and authorized technical body.

The warranty excludes any other service or any other compensation. Repairs covered by the warranty are generally carried out in the supplier's workshops or in those of an approved agent. When work on equipment takes place outside the said workshops, labour costs for the disassembly or assembly of those parts are borne by the supplier if the operations are carried out exclusively by their personnel or by an approved agent. The replaced parts become the property of the supplier and must be returned to them at their expense.

Relatively important components that are not manufactured by the supplier and that bear the brand of specialist manufacturers are covered by the manufacturer's warranty (variable according to manufacturer).

* The warranty does not apply to consumables defined by the manufacturer:

- Fuses
- Contactor contacts

1.4 Certificate of conformity

We,

VERLINDE S.A.S., 2 bd de l'Industrie, BP 59,
F-28501 VERNOUILLET Cedex, France

declare that the product

STAGEMAKER® CONTROLLER

Serie RIGGER SCxSR

DATE OF MANUFACTURE:

must be used in association with other machines. It cannot be used for as long as the systems in which it is integrated are not declared in compliance with the provisions of directives:

1. Machinery 89/392/EEG (93/68/EEG),
2. Machinery 91/368/EEG,
3. Electrical machinery 73/23/EEG,
4. Electromagnetic compatibility 89/336/EEG

Together with harmonised standards, especially EN292, Chapters 1 and 2 (machinery safety),

Applicable technical standards and specifications, especially:

5. IEC 34-1 "Rotating electrical machines"
6. IEC 34-5 "Rotating electrical machines"
7. IEC 946-5-1 "Low voltage switchgear and control gear"
8. IEC 364 "Electrical installations in buildings"
9. NEN 1010 "Electrical installations"
10. EN 60204 "Electromagnetic compatibility"

The person in charge of integration should recall these phrases in the machine's declaration of compliance, add the regulations and standards when the machine is definitively installed and draft the appropriate technical dossier.

VERLINDE S.A.S.,

VERNOUILLET, 2014

2 -General presentation of the system.

The controller is in the form of a 6U 19" rack, depth 460mm,
Power supply with CE plug P17 5P 32A 400Vac,

On front:

- Signalling lights,
- Emergency stop
- Hoist control 3-position reversing switches with lights
- START button
- Phase rotation relays
- Phase failure relay
- Line circuit breaker
- LV circuit breakers
- Hoist connector(s)
- Signal lights fuse holder
- Connection plug to another controller

2.1 General operating conditions

Only authorized and skilled persons for the control of hoists are allowed to operate the controller.

The controller does not check hoist travel; the user must, without fail, visually supervise all hoists.

They must make sure:

- Hoists are in good condition and serviceable,
- They can visually check the travel of all hoists,
- There are no persons under hoists or under structures/assemblies raised by hoists.

They must check:

- The compatibility of the power supply with that of the controller,
- Electrical connections,
- The condition of power supply and hoist connection cables,

Operating temperature: -5/+45°C

Storage temperature: -30/+80°C

hygrometry: less than 85% RH.

2.2 - Routine maintenance and repairs

The controller must be looked over and repaired using approved procedures, carried out only by authorized companies or by the manufacturer.

Any assembly or disassembly work is prohibited with power on.

Electrical connections must only be made or broken with power down by unplugging the power plug.

2.3 Preventive maintenance

- The maintenance team shall carry out on an annual basis the following operations:
- Cleaning of the controller,
- Verification of the general condition of the controller
- Verification of the emergency stop button.
- The maintenance team shall carry out the following operations:
- Switch off the system completely,
- Unplug all connectors connected to the controller, then proceed with cleaning and verification of the general condition:
- Gently apply compressed air (dry, oil-free air) inside the controller to remove dust that has gathered.

CAREFUL: you could damage electrical connections if the compressed air pressure is too great,...

- Check that accessible electrical connections are properly tightened,
- Check that there are no visible anomalies (overheated, blackened components, leads or connections), or abnormal noise.

3-Basic principle of operation

The controller controls the upward and downward travel of hoists and stop. When at stop the absence of voltage causes the brake to close. Movement will only take place for as long as the Start button is held down.

3.1- Light signalling (Figure 1)

- 1) Presence of control voltage
- 2) Phase failure
- 3) Power inverting



Figure 1

Figure 2



Figure 2

- 1) Connector hoist 1 to 4.
- 2) Connector hoist 5 to 8 (according).
- 3) Power supply cord P17 5P 32A 400V.
- 4) socket connector for parallel use with a second controller.
- 5) 3-position reversing switches
- 6) Emergency stop reset button
- 7) Start Bouton

3.4- Operating the controller

Starting up

You must, without fail, comply with start-up instructions to avoid damaging the equipment.

- Connect hoists to the controller
- Connect the power plug,
- Reset all circuit breakers (line, controller and motor)
- Pull the emergency stop into operating position,
- Check the condition of following indicator lights: phase presence, phase rotation, control voltage,
- Correct if necessary depending on condition of lights,
- With all the hoist control reversing switches in position 0, press START and listen for the line contactor to open and close (sound of contactor). If that does not occur check the emergency stop(s) and if it still does not function contact your agent.

3.5 Operating

- 1- Select the operating mode of each hoist with the 3-position reversing switches (5).
Central position: the hoist is not controlled
UP position: UP travel is selected
DOWN position: DOWN travel is selected

- 2- Pull the emergency stop reset button (6)

- 3- Start travel movement(s).

Press Start PB (7), start hoist travel depending on selection of reversing switches (5) while the start PB is held down all the time.

Careful: the controller has no means of checking travel direction of hoists, only the operator can supervise the operation visually. He is responsible for handling operations;

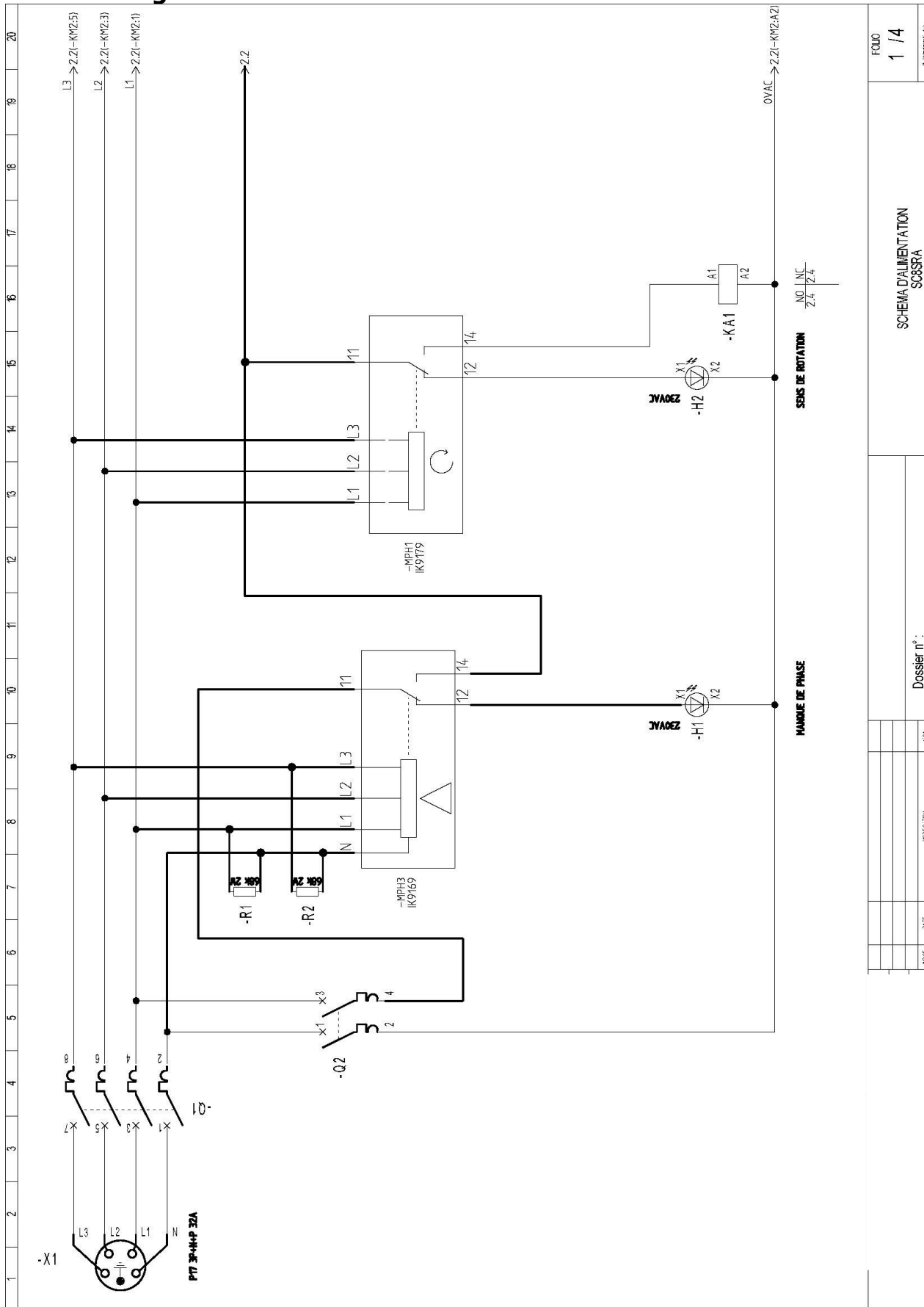
Observation: when a controller power phase is inverted, indicator lights up; the controller is operating correctly as it is fitted with an automatic power inverting system for the equipment.

- 4- Stopping the equipment.

Travel stops when the Start PB is released.

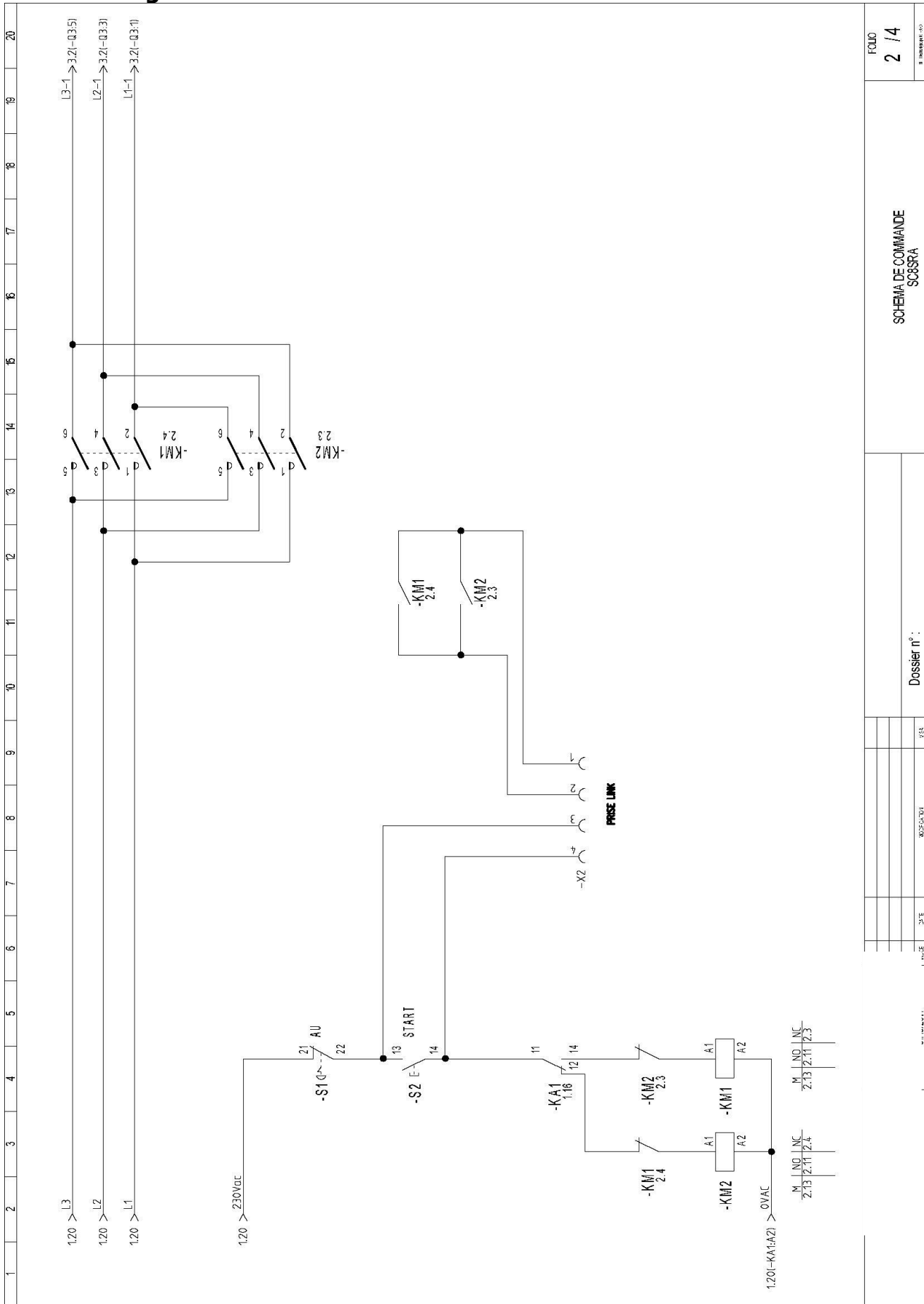
When the system stops you are advised to activate the emergency stop or even disconnect the controller.

APENDIX : Electric diagram



SCHEMA D'ALIMENTATION SC8SRA				FOLIO 1 / 4 H. INSEPIEN 100	
Dossier n° :		VER		MONTAGE	
BOSE		DATE		MONTAGE	

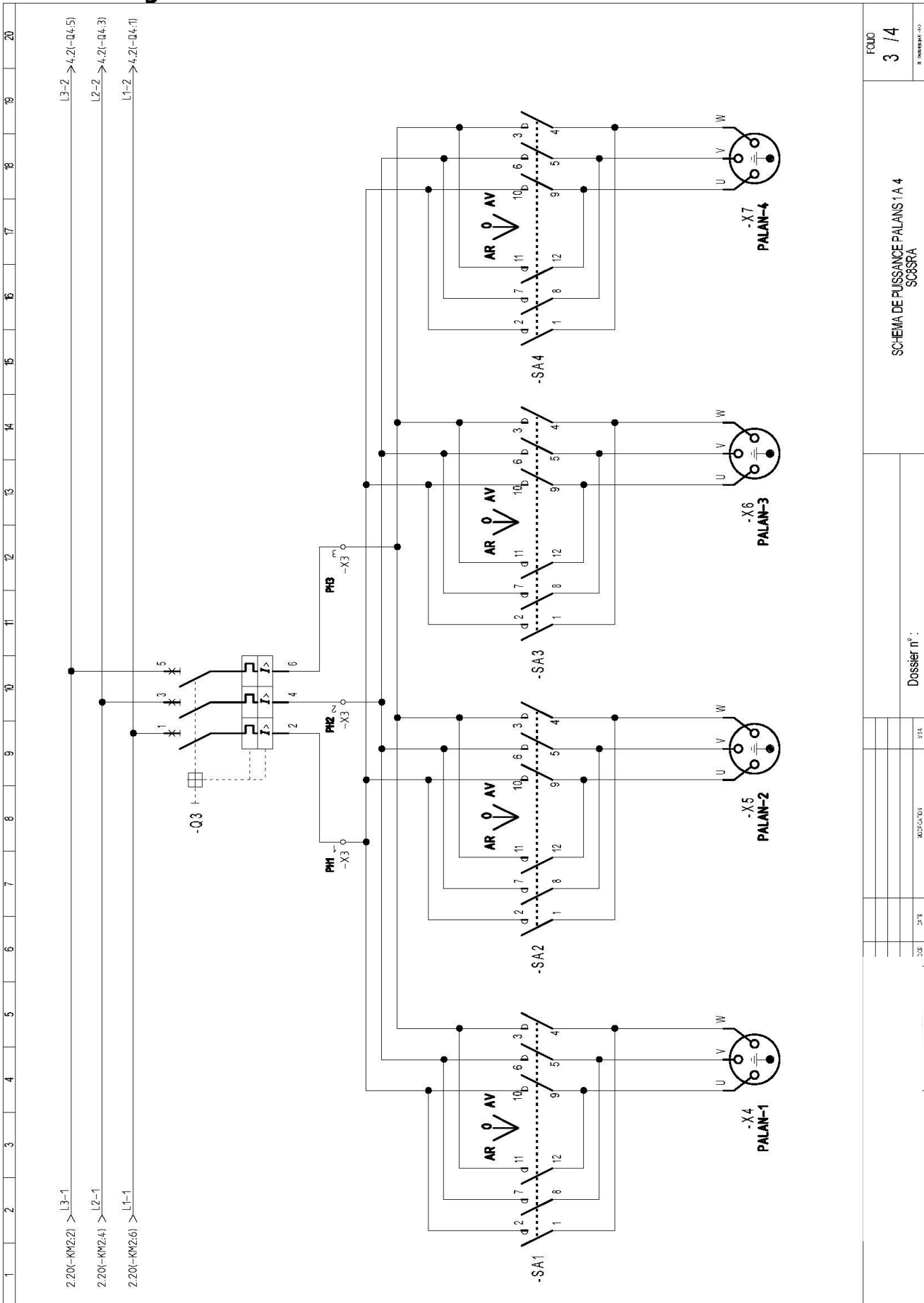
Electric diagram


 SCHEMA DE COMMANDE
SC8SR4

 FOLIO
2 / 4
B. INDIRIZZI (20)

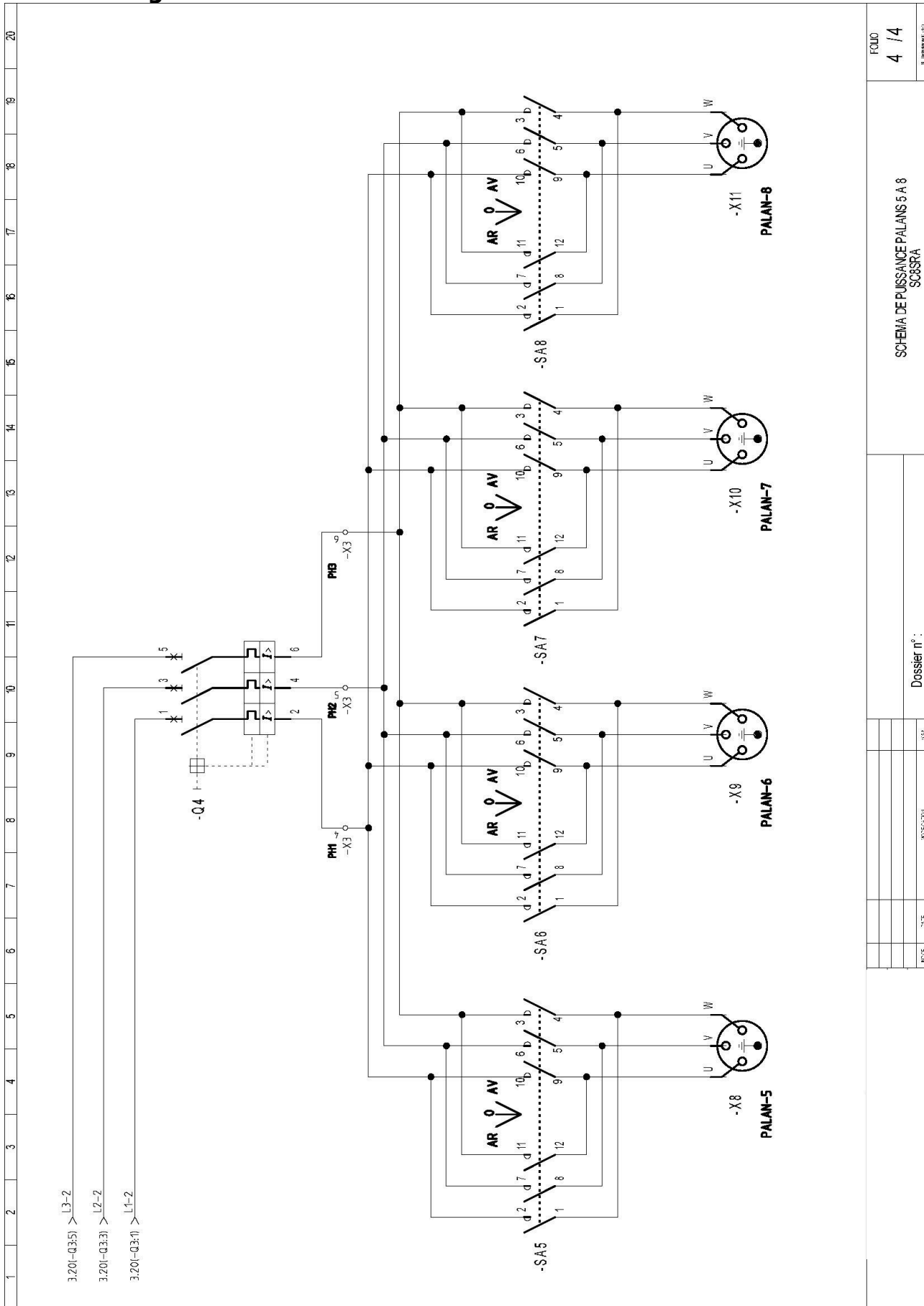
Dossier n°:

Electric diagram



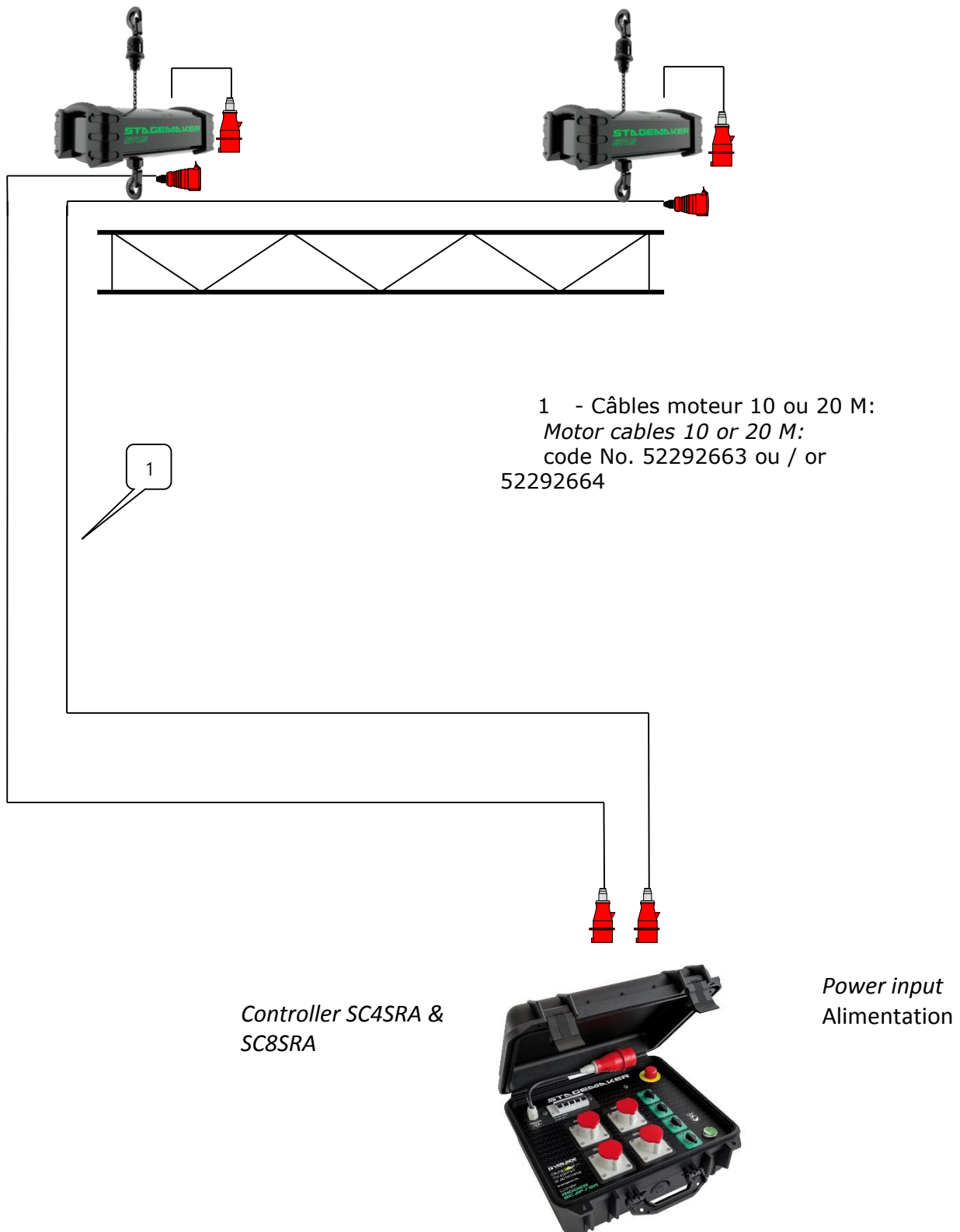
SCHEMA DE PUISSANCE PALANS 1 A 4 SC88RA				FOUCO 3 / 4 R. HENRIEUX S.A.
Dossier n°:				
DATE	MODELS/DTI	VEN		

Electric diagram



FOLIO		4 / 4
SCHEMA DE PUISSANCE PALANS 5 A 8		9 (REVISED 01)
Dossier n° :		
INDEX	DATE	REVISION

Example of use



Dimensions datas

Type	Dimensions (A x B x C)	Weight (kg)
RIGGER – SC4SRA (52861505)	445 x 190 X 345	10
RIGGER – SC8SRA (52861506)	480 x 205 X 370	12



Spare parts (SC8SR)

Repère	Qte	Désignation	Référence
QF1	1	Disjoncteur divisionnaire 4PP 32A courbe D 10 kA	D32T4
QF2	1	Disjoncteur divisionnaire 2PP 4A courbe C 6 kA	C4T2
QF3-QF4	2	Disjoncteur moteur 16,,20A(9kW)	MS25-20
QF3-QF4	1	Barette de montage 2 idsjoncteur tripolaire au pas de 45	SBD02
QF3-QF4	1	Bornier d'alimentation	SB.DE1
KA1	1	Relais miniature 2RT 8A 230Vac avec support et étrier	788-549
KM1	1	Contacteur 3P 30A 1NF 220/240Vac 50	KNL30-00-M7
KM1	1	Bloc de contact auxiliaire 1NO+1NF	NDL2-11
KM2	1	Contacteur 3P 30A 1NF 220/240Vac 50	KNL30-00-M7
KM2	1	Bloc de contact auxiliaire 1NO+1NF	NDL2-11
HL2	1	Voyant à led Verte 230V 5mm	204-271
HL1	1	Voyant à led Rouge 230V 5mm	207-113
MPH1	1	Relais manque de phase	IK9169
MPH2	1	Relais sens rotation	IK9179
SA1-SA8	8	Commutateur d'inversion de phase 3P 12 A	P0120012R018
AU	1	Arret d'urgence à traction	M22-PV
AU	1	Support de fixation 3 éléments	M22-A
AU	1	Contact NF	M22-K01
AU	1	Plaque arrêt d'urgence 4 langues diam, 60	M22-XBK1
Start	1	Bouton poussoir diam 22 sans etiquette	M22-D-X
Start	1	Support de fixation 3 éléments	M22-A
Start	1	Contact NO	M22-K10
Start	1	Etiquette verte texte "Start"	M22-XD-G-GB1
X1	1	Fiche P17 3P+N+T 32A 415V	S52SL30
X101-X108	8	Socle prise P17 3P+T 16A 415V	F41SL31
X6	1	Embase femelle 4 points	PKG-M0,4GL-LG
X10-X15	6	Borne à lames 3 pts/2,5 gris	2002-6301
XPE	3	Borne à lames 3 pts/2,5 vert/jaune	2002-6307
	1	Flasque pour borne à lames 3 pts/2,5	2002-6391
	2	Equerre de blocage	249-1170
	3	Pont 2 pts pour borne à lames 3 pts/2,5	2002-402
	1	Valise résine 480x370x205mm	MVE4820BE
	1	Support metal pour explorer(x6)	MVEKITS06S
	1	Cable H07RNG (m)	H07RNF-5G4
	1	Face avant SC4P SR	FAV/SC8SRA
	1	Serigraphie mutli couleur	FAVSERI/SC8SRA
	6	Vis à tôle Diam 3,9 x 16	1 153 916

Repère	Qte	Désignation	Référence
	2	entretoise M6 L60mm	M6x60x9x10x10msni
	1	Presse-étoupe PG21	1561-90-021
	1	Ecrou presse-étoupe PG21	1561-92-021
Z1-Z2	0,46	Rail symétrique 35x15x2000 Din L. 233m	BIZ200210
Z3	0,129	Rail symétrique 35x15x2000 Din L. 129mm	BIZ200210
Z4-Z5-Z6	5	Vis à tete cylindrique cruciforme M6x 16 noir	21100-650
	6	rondelle 6,4x18x1,2	1411618
Z8-Z9	2	Ecrou M6 hexagonale	3176
Z10	1	Bride de fixation contacteur	BRFC_SC8SRA
	3	Rondelle cuvette M6 plasitque	21100-016