

**DOCUMENTATION**

**B6 REGULEX® CONTROL UNIT**

**Manual : 582.199.110-UK - 2106**

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*Supersede :*

*Modif.:*

**TRANSLATION FROM THE ORIGINAL MANUAL**

***IMPORTANT : Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).***

THE PICTURES AND DRAWINGS ARE NON CONTRACTUAL. WE RESERVE THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE..

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# INSTALLATION AND SAFETY INSTRUCTIONS

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# 1. SAFETY INSTRUCTIONS

## GENERAL SAFETY INSTRUCTIONS



**CAUTION :** The equipment can be dangerous if you do not follow our instructions concerning installation and servicing described in this manual and in accordance with applicable European standards and local national safety regulations.

Please carefully read all the instruction literature before operating your equipment.

### **Only trained operators can use the equipment.**

The foreman must ensure that the operator has understood the safety instructions for this equipment as well as the instructions in the manuals for the different parts and accessories.

Read carefully all instruction manuals, label markings before operating the equipment.

Incorrect use may result in injury. This equipment is for professional use only. It must be used only for what it has been designed for. Never modify the equipment. The parts and accessories supplied must be regularly inspected. Defective or worn parts must be replaced.

**Guards (motor cover, coupling shields, connectors,...) have been designed for a safe use of the equipment.**  
**The manufacturer will not be held responsible for bodily injury or failure and / or property damage due to destruction, the overshadowing or the partial or total removal of the guards.**

### **Never exceed the equipment components' maximum working pressure.**

Comply with regulations concerning safety, fire risks, electrical regulations in force in the country of final destination of the material. Use only products or solvent compatible with the parts in contact with the material (refer to data sheet of the material manufacturer).

## PICTOGRAMS

A	D	F	E	C	G
NIP HAZARD	WARNING MOVING ELEVATOR	WARNING MOVING PARTS	WARNING MOVING SHOVEL	DO NOT EXCEED THIS PRESSURE	HIGH PRESSURE HAZARD
H	J	L	K	M	O
RELIEF OR DRAIN VALVE	WARNING HOSE UNDER PRESSURE	WEAR GLASSES OBLIGATORY	WEAR OF GLOVES IS OBLIGATORY	PRODUCT VAPOR HAZARDS	WARNING HOT PARTS OR AREAS
N	P	R	Q	S	T
ELECTRICAL HAZARD	WARNING FIRE HAZARDS	EXPLOSION HAZARDS	GROUNDING	WARNING (USER)	WARNING SERIOUS INJURIES

## PRESSURE HAZARDS



Current legislation requires that an **air relief** valve be fitted in the air supply circuit to the air motor to prevent over pressurisation. This safety feature ensures that it is not possible to supply the air motor with excessive air pressure that may cause injury.

Please ensure that a **material drain valve** is fitted in the fluid circuit to drain and depressurise the circuit. Once depressurised and drained, work /servicing may then commence on the equipment. Please remember to close these valves when restarting the system.

## HIGH PRESSURE INJECTION HAZARDS



When working with high pressure equipment, special care is required. Fluid leaks can occur. There is a risk of material being injected to any exposed parts of body, this could cause severe injury :



- medical care must be sought immediately if paint is injected under the skin or in other parts of the body (eyes, fingers).
- never point the spray gun at any one. Never try to stop the spray with your hands or fingers nor with rags or similars.
- **follow the shut down procedure and always depressurize air and fluid circuits** before carrying out any servicing on the gun (cleaning, checking, maintenance of the material or cleaning of the gun nozzles).
- for the guns equipped with a safety device, always lock the trigger when not in use.

## FIRE - EXPLOSION - SPARKS - STATIC ELECTRICITY HAZARDS



A poor earth connection, inadequate ventilation, sparks or static electricity can cause an explosion or fire. to avoid these risks when using or servicing SAMES KREMLIN equipment, the following safety procedures must be followed :



- ensure a good earth connection and ground the parts to be handled i.e. solvents, materials, components and equipment,
- ensure adequate ventilation,
- keep working area clean and free from waste solvents, chemicals, or solid waste i.e. rags, paper and empty chemicals drums,
- never use electrical switches / power if in an atmosphere of volatile solvent vapour,
- stop working immediately in case of electrical arcs,
- never store chemicals and solvents in the working area.
- use paint whose flash point is the highest possible to prevent from any formation of gas and inflammable vapours (refer to materials' safety instructions),
- install a cover on the drums to reduce the diffusion of gas and vapours in the spraybooth.

## TOXIC PRODUCT HAZARDS



Toxic products or vapours can cause severe injury not only through contact with the body, but also if the products are ingested or inhaled. It is imperative :



- to know the material products and their risks,
- notified or hazardous materials must be stored in accordance with the regulations,
- the material must be stored in an appropriate container, never place materials in a container where there is a risk of spillage or leakage,
- a procedure must be applied for the safe disposal of waste material. It must comply with all prevailing regulations and legislations of the country where the equipment is to be used,
- protective clothing should always be worn in compliance with the material manufacturers' recommendations,
- depending on the application and chemical safety instructions, safety glasses, hearing protective earplug, gloves, foot wear, protective masks and possible breathing equipment should be worn to comply with the regulations (Refer to chapter "Safety equipment of SAMES KREMLIN selection guide).



### CAUTION!

It is forbidden to use material containing high concentrations of halogenated hydrocarbon solvents with **aluminium** or **zinc fillers**. Non-compliance with the instructions may cause explosion risk causing serious or fatal injury.



### EQUIPMENT REQUIREMENTS

**Guards (motor cover, coupling shields, connectors,...) have been designed for a safe use of the equipment.**

**The manufacturer will not be held responsible for bodily injury or failure and / or property damage due to destruction, the overshadowing or the partial or total removal of the guards.**

### PUMP



Before carrying out any work, it is imperative to read and clearly understand the disassembly and reassembly instructions before servicing. The operator must understand the equipment and the safety instructions. These instructions are available in the equipment manuals.



The air motor is designed to be mounted with a pump. Never modify any components or couplings. When operating, please keep hands away from moving parts. Before starting up the equipment, please read the PRESSURE RELIEF instructions. Please ensure that any relief or drain valves fitted are in good working order.

### HOSES

- Keep hoses out of circulation areas, moving parts or hot surfaces,
- Never expose product hoses to temperature higher than + 60°C / 140° F or lower than 0°C / 32° F,
- Never pull or use the hoses to move the equipment,
- Tighten all fittings as well as the hoses before operating the equipment,
- Check the hoses regularly; change them if they are damaged,
- Never exceed the maximum working pressure (MWP) indicated on the hose.

### USED PRODUCTS

Considering the wide variety of products that are available and can be used in our equipment it is impossible to check and make recommendations for all chemical data, regarding the risks of possible chemical attack and their long term chemical reaction



SAMES KREMLIN can not be held liable for :

- compatibility of wetted parts,
- risks to staff and the surroundings,
- for worn or defective parts, for faulty equipment or units, or the quality of final product.

It is the responsibility of the user to know and prevent any possible risks such as toxic vapours, fires or explosions. He shall determine the risks of immediate reactions or pursuant to repeated exposures of the staff,

SAMES KREMLIN shall not be liable for physical injuries, direct or indirect material damages caused by the use of chemicals.

## 2. HANDLING

 **Check the weight and the dimensions of the equipment**  
( refer to 'Technical features' section of the instruction manual)

If weight and dimensions are too important, the unloading must be carried out by means of a forklift or any other appropriate means with a qualified personnel and in a clear horizontal area to prevent from risks of damage injury or an accident.

The centre of gravity is not in the centre of the machine : carry out by hand a stability-test after having lifted the whole at 10 cm / 3.937" maximum.

After the unloading, the handling of the whole (eg: elevator pump) is carried out by means of a pallet truck taking the bottom part of the frame.

**Remark : Each pump motor is fitted with a ring. The ring is designed for the hoisting of one pump and can not be used for the handling of the complete assembly.**

## 3. STORING

Storing before installation :

- Storing ambient temperature : 0 / +50 °C / 0 / +122°F
- Protect the whole against dust, water trickling, dampness and shocks.

Storing after installation :

- Operating temperature : +15 / +35 °C / +59 / +138.2° F
- Protect the whole against dust, water trickling, dampness and shocks.

## 4. INSTALLATION OF THE EQUIPMENT

The machine is installed on a stable horizontal floor (for eg a concrete flag).

The machine shall be made stable by the use of holding down bolts or by the use of other anchoring methods, strong enough to prevent unintended bodily movement of the equipment.



**To avoid risks caused by static electricity, the equipment as well as its components must be grounded.**

- **For the pumping equipments** (pumps, pneumatic rams, frame...), a section wire of 2.5 mm<sup>2</sup> is fixed on the material. Use this wire to connect the material to "the general ground". In case of severe environments (mechanical protection of the wire of earthing insufficient, vibrations, mobile material...) where function damages at the ground are probable, the user have to replace the provided wire of 2.5 mm<sup>2</sup> by a device more adapted to its environment (wire with a more important section, bonding strip, fixing by thimble with eyelet...).

The continuity of the ground must be controlled by a qualified electrician. If the continuity of the ground is not ensured, check the terminal, the wire and the earthing point. **Never** use the material without have solved this problem.

- In the severe cases of environments (mechanical protection of the wire of earthing insufficient, vibrations, mobile material...) where damages of the function put at the ground are probable, the user will have to replace the wire of 2.5 mm<sup>2</sup> provided, by a device more adapted to its environment (wire of more important section, bonding strip, fixing by thimble with eyelet...),
- **The gun** must be 'grounded' via a material hose or an air hose. In case of spraying by means of a gun with cup, the air hose must be conductive,
- **The materials to be painted** must also be grounded.

**All the materials situated in the working area shall be grounded.**



- **Never store** more than necessary inflammable materials inside the working area,
- The materials must be stored into **approved drums** and grounded,
- Use only grounded **metals containers** for the use of cleaning solvents,
- **Cardboard and paper are prohibited.**

## 5. MARKING OF THE EQUIPMENT



Each equipment has a label plate with the name of the manufacturer, the equipment part number, the interesting informations to use correctly the equipment (pressure, voltage,...) and sometimes the above pictogram.

The equipment is designed with and consists of high quality materials and components which can be re-used.

The 2012/19/UE European Directive covers all equipments with a crossed-out bin pictogram. Please inform yourself about the collection systems for electric and electronic equipments.

Please act in accordance with local rules and **do not dispose of old equipment with household wastes**. A correct disposal of old equipment will help prevent negative consequences for the environment and health.



<p style="text-align: center;"><b>FR</b></p> <p><b>Pour une utilisation sûre, Il est de votre responsabilité de :</b></p> <ul style="list-style-type: none"> <li>• Lire attentivement tous les documents contenus dans le CD joint avant la mise en service de l'équipement,</li> <li>• D'installer, d'utiliser, d'entretenir et de réparer l'équipement conformément aux préconisations de SAMES KREMLIN ainsi qu'aux réglementations nationales et/ou locales,</li> <li>• Vous assurez que les utilisateurs de cet équipement ont été formés, ont parfaitement compris les règles de sécurité et qu'ils les appliquent.</li> </ul>	<p style="text-align: center;"><b>UK</b></p> <p><b>To ensure safe use of the machinery, it is your responsibility to:</b></p> <ul style="list-style-type: none"> <li>• Carefully read all documents contained on the enclosed CD before putting the machinery into service,</li> <li>• Install, use, maintain and repair the machinery in accordance with SAMES KREMLIN's recommendations and national and/or local regulations,</li> <li>• Make sure that the users of the machinery have received proper training and that they have perfectly understood the safety rules and apply them.</li> </ul>	<p style="text-align: center;"><b>DE</b></p> <p><b>Eine sichere Nutzung setzt voraus, dass Sie: :</b></p> <ul style="list-style-type: none"> <li>• alle in der CD enthaltenen Dokumente vor der Inbetriebnahme der Anlage aufmerksam lesen,</li> <li>• die Anlage im Einklang mit den Empfehlungen von SAMES KREMLIN sowie mit den nationalen und/oder lokalen Bestimmungen installieren, verwenden, warten und reparieren,</li> <li>• sich vergewissern, dass die Nutzer dieser Anlage angemessen geschult wurden, die Sicherheitsbestimmungen verstanden haben und sie anwenden.</li> </ul>
<p style="text-align: center;"><b>ES</b></p> <p><b>Para una utilización segura, será de su responsabilidad:</b></p> <ul style="list-style-type: none"> <li>• leer atentamente todos los documentos que se incluyen en el CD adjunto antes de la puesta en servicio del equipo,</li> <li>• instalar, utilizar, efectuar el mantenimiento y reparar el equipo con arreglo a las recomendaciones de SAMES KREMLIN y a la normativa nacional y/o local,</li> <li>• cerciorarse de que los usuarios de este equipo han recibido la formación necesaria, han entendido perfectamente las normas de seguridad y las aplican.</li> </ul>	<p style="text-align: center;"><b>IT</b></p> <p><b>Per un uso sicuro, vi invitiamo a:</b></p> <ul style="list-style-type: none"> <li>• leggere attentamente tutta la documentazione contenuta nel CD allegato prima della messa in funzione dell'apparecchio,</li> <li>• installare, utilizzare, mantenere e riparare l'apparecchio rispettando le raccomandazioni di SAMES KREMLIN, nonché le normative nazionali e/o locali,</li> <li>• accertarvi che gli utilizzatori dell'apparecchio abbiano ricevuto adeguata formazione, abbiano perfettamente compreso le regole di sicurezza e le applichino.</li> </ul>	<p style="text-align: center;"><b>PT</b></p> <p><b>Para uma utilização segura, é da sua responsabilidade:</b></p> <ul style="list-style-type: none"> <li>• Ler atentamente todos os documentos incluídos no CD em anexo antes de pôr o equipamento em funcionamento,</li> <li>• Proceder à instalação, utilização, manutenção e reparação do equipamento de acordo com as preconizações de SAMES KREMLIN, bem como com outros regulamentos nacionais e/ou locais aplicáveis,</li> <li>• Assegurar-se que os utilizadores do equipamento foram devidamente capacitados, compreenderam perfeitamente e aplicam as devidas regras de segurança.</li> </ul>
<p style="text-align: center;"><b>NL</b></p> <p><b>Voor een veilig gebruik dient u:</b></p> <ul style="list-style-type: none"> <li>• alle document op de bijgevoegde cd aandachtig te lezen alvorens het apparaat in werking te stellen,</li> <li>• het apparaat te installeren, gebruiken, onderhouden en repareren volgens de door SAMES KREMLIN gegeven aanbevelingen en overeenkomstig de nationale en/of plaatselijke reglementeringen,</li> <li>• zeker te stellen dat de gebruikers van dit apparaat zijn opgeleid, de veiligheidsregels perfect hebben begrepen en dat zij die ook toepassen.</li> </ul>	<p style="text-align: center;"><b>SE</b></p> <p><b>För en säker användning av utrustningen ansvarar ni för följande:</b></p> <ul style="list-style-type: none"> <li>• Läs noga samtliga dokument som finns på den medföljande cd-skivan innan utrustningen tas i drift.</li> <li>• Installera, använd, underhåll och reparera utrustningen enligt anvisningarna från SAMES KREMLIN och enligt nationella och/eller lokala bestämmelser.</li> <li>• Försäkra er om att användare av denna utrustning erhållit utbildning, till fullo förstått säkerhetsföreskrifterna och tillämpar dem.</li> </ul>	<p style="text-align: center;"><b>FI</b></p> <p><b>Käytön turvallisuuden varmistamiseksi velvollisuutesi on:</b></p> <ul style="list-style-type: none"> <li>• Lukea huolella kaikki CD:llä olevat asiakirjat ennen laitteiston käyttöönottoa,</li> <li>• Noudataa laitteiston asennuksessa, käytössä, kunnossapidossa ja huollossa SAMES KREMLIN in suosituksia sekä kansallisia ja/tai paikallisia määräyksiä,</li> <li>• Varmistaa, että laitteiston käyttäjät ovat koulutettuja ja ymmärtävät täysin turvallisuusmääräykset ja miten niitä sovelletaan.</li> </ul>
<p style="text-align: center;"><b>PL</b></p> <p><b>Dla zapewnienia bezpiecznego użytkowania na użytkownika spoczywa obowiązek:</b></p> <ul style="list-style-type: none"> <li>• Uważnego zapoznania się ze wszystkimi dokumentami znajdującymi się na załączonej płycie CD przed pierwszym uruchomieniem urządzenia,</li> <li>• Instalowania, użytkowania, konserwacji i naprawy urządzenia zgodnie z zaleceniami firmy SAMES KREMLIN oraz z przepisami miejscowymi,</li> <li>• Upewnienia, że wszyscy przeszkoleni użytkownicy urządzenia zrozumieli zasady bezpieczeństwa i stosują się do nich.</li> </ul>	<p style="text-align: center;"><b>CS</b></p> <p><b>Pro bezpečné používání jste povinni:</b></p> <ul style="list-style-type: none"> <li>• Před uvedením zařízení do provozu si pozorně přečtět veškeré dokumenty obsažené na přiloženém CD,</li> <li>• Nainstalovat, používat, udržovat a opravovat zařízení v souladu s pokyny firmy SAMES KREMLIN a s národními a/nebo místními legislativními předpisy,</li> <li>• Ujistit se, že uživatelé tohoto zařízení byli vyškoleni, že dokonale pochopili bezpečnostní pravidla a že je dodržují.</li> </ul>	<p style="text-align: center;"><b>SL</b></p> <p><b>Za varno uporabo ste dolžni:</b></p> <ul style="list-style-type: none"> <li>• natančno prebrati vse dokumente na CD pred zagonom stroja,</li> <li>• instalirati, uporabljati, vzdrževati in popravljati opremo po določilih SAMES KREMLIN in v skladu z veljavnimi nacionalnimi in/ali lokalnimi predpisi,</li> <li>• poskrbeti, da so uporabniki te opreme ustrezno usposobljeni, poznajo varnostne predpise in da jih upoštevajo.</li> </ul>
<p style="text-align: center;"><b>SK</b></p> <p><b>V záujme bezpečného je vašou povinnosťou:</b></p> <ul style="list-style-type: none"> <li>• pozorne si prečítať všetky dokumenty obsiahnuté na priloženom CD predtým, ako zariadenie uvediete do prevádzky,</li> <li>• nainštalovať, používať, udržiavať a opravovať zariadenie v súlade s odporúčaniami spoločnosti SAMES KREMLIN a národnými a/alebo miestnymi predpismi,</li> <li>• uistiť sa, že používatelia tohto zariadenia boli zaškolení, riadne porozumeli pravidlám bezpečnosti a používajú ich.</li> </ul>	<p style="text-align: center;"><b>HU</b></p> <p><b>A biztonságos használat érdekében az Ön felelőssége, hogy:</b></p> <ul style="list-style-type: none"> <li>• a berendezés üzembe helyezésé előtt figyelmesen elolvassa a mellékelt CD által tartalmazott összes dokumentumot,</li> <li>• a berendezést a SAMES KREMLIN ajánlásainak valamint a nemzeti és/vagy helyi szabályozásoknak megfelelően helyezze üzembe, használja, tartsa karban és javítsa,</li> <li>• megbizonyosodjon róla, hogy a berendezés felhasználói képzettek, tökéletesen megértették és alkalmazzák a biztonsági előírásokat.</li> </ul>	<p style="text-align: center;"><b>RO</b></p> <p><b>Pentru o utilizare sigură, este responsabilitatea dvs. să:</b></p> <ul style="list-style-type: none"> <li>• Citiți cu atenție toate documentele de pe CD-ul anexat, înainte de punerea în funcțiune a echipamentului,</li> <li>• Instalați, utilizați, întrețineți și reparați echipamentul conform instrucțiunilor SAMES KREMLIN precum și reglementărilor naționale și/sau locale,</li> <li>• Vă asigurați că utilizatorii acestui echipament au fost instruiți, au înțeles perfect regulile de securitate și le aplică integral.</li> </ul>

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Déclare que le matériel désigné ci-après / Herewith declares that the equipment / erklärt hiermit, dass die / Declara que el material designado a continuación / Dichiaro che il materiale sottoindicato / Declara que o material a seguir designado / verklaart dat de hieronder aangeduide apparatuur / Kungör att den utrustning som anges här nedan / ilmoittaa, että alla mainitut laitteistot / Oświadczam, że wymienione poniżej urządzenia / Prohlašuje, že níže uvedené vybavení / Izjavljam, da je opisana oprema spodaj / Vyhlasuje, že zariadenie uvedené nižšie / Kijelenti, hogy a megjelölt anyag a továbbiakban / Declară că echipamentul precizat mai jos:

**BAIE REGULEX® / REGULEX® CONTROL UNIT**  
**REGULEX® STEUER-EINHEIT / ARMARIO REGULEX®**

B6

Est conforme à la législation d'harmonisation de l'Union applicable suivante / Is in conformity with the relevant Union harmonisation legislation / Erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union / es conforme con la legislación de armonización pertinente de la Unión / è conforme alla pertinente normativa di armonizzazione dell'Unione / in overeenstemming met de desbetreffende harmonisatiewetgeving van de Unie / med den relevanta harmoniserade unionslagstiftningen / on asiaa koskevan unionin yhdenmukaistamislainsäädännön vaatimusten mukainen / jest zgodny z odpowiednimi wymaganiami unijnego prawodawstwa harmonizacyjnego / Shoduje se s následující příslušnou evropskou harmonizační legislativou / V skladu s harmonizirano zakonodajo Unije / Je v súlade s uplatniteľnými harmonizačnými právnymi predpismi EÚ / Megfelel a következő alkalmazandó uniós harmonizációs szabályozásnak / Este conform cu legislația aplicabilă de armonizare de mai jos

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Directive Compatibilité Electromagnétique / Electromagnetic Compatibility Directive / Richtlinie Für Elektromagnetische Verträglichkeit / Directiva de Compatibilitad Eletromagnética / Direttiva Compatibilita Elettromagnetica / Directiva relativa à Compatibilidade Eletromagnética / Richtlijn Elektromagnetische Compatibiliteit / Direktivet om Elektromagnetisk Kompatibilitet / EMC-direktivi / Dyrektywa Kompatybilności Elektromagnetycznej / Směrnice Pro Elektromagnetickou Kompatibilitu / Direktiva O Elektromagnetni Združljivost / Smernica O Elektromagnetickej Kompatibilite / Az Elektromágneses Összeférhetőségre vonatkozó Irányelv / Directiva Privind Compatibilitatea Electromagnetică EN 61000-6-2:2006 EN 61000-6-4:2007 + A1:2011	<b>2014/30/UE</b>

La présente déclaration de conformité est établie sous la seule responsabilité du fabricant / This declaration of conformity is issued under the sole responsibility of the manufacturer / Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller / La presente declaración de conformidad se expide bajo la exclusiva responsabilidad del fabricante / La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante / A presente declaração de conformidade é emitida sob a exclusiva responsabilidade do fabricante / Deze conformiteitsverklaring wordt verstrekt onder volledige verantwoordelijkheid van de fabrikant / Denna försäkran om överensstämmelse utfärdas på tillverkarens eget ansvar / Tämä vaatimustenmukaisuusvakuutus on annettu valmistajan yksinomaisella vastuulla / Niniejsza deklaracja zgodności wydana zostaje na wyłączną odpowiedzialność producenta / Toto prohlášení o skodě se vydává na výhradní odpovědnost výrobce / Za izdajo te izjave o skladnosti je odgovoren izključno proizvajalec / Toto vyhlásenie o zhode sa vydáva / na vlastnú zodpovednosť výrobcu / Ezt a megfelelőségi nyilatkozatot a gyártó kizárólagos felelőssége mellett adják ti / Prezenta declarație de conformitate este emisă pe răspunderea exclusivă a producătorului.



Philippe PROVENAZ

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Inovación y Desarrollo / Direttore Innovazione e sviluppo  
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**INSTRUCTION AND SERVICING MANUAL**

**B6 REGULEX® CONTROL UNIT**

*Manual : 1706 573.176.112*

*Date : 20/06/17 - Supersede : 20/09/11  
Modif. : Update*

**TRANSLATION FROM THE ORIGINAL MANUAL**

**IMPORTANT : Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).**

*THE PICTURES AND DRAWINGS ARE NON CONTRACTUAL. WE RESERVE THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE.*

**SAMES KREMLIN SAS**

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**[www.sames-kremlin.com](http://www.sames-kremlin.com)**



**INSTRUCTION AND SERVICING MANUAL  
B6 REGULEX® CONTROL UNIT**

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**ADDITIONAL DOCUMENTATION :**

<b><u>UE declaration of conformity</u></b>		Doc. 578.048.130
<b><u>Safety instructions</u></b>	Installation and safety instructions	Doc. 578.001.130
<b><u>Spare parts</u></b>	B6 REGULEX ® control unit	Doc. 573.310.050
<b><u>Appendices</u></b>	B6 REGULEX ® control unit electric diagrams	

Dear Customer,

You are the owner of our new REGULEX® system and we would like to take this opportunity to thank you.

To make sure your investment will provide full satisfaction, special care has been taken by SAMES KREMLIN during all designing and manufacturing processes.

To obtain the best result, safe and efficient operation of your equipment, we advise you to read and make yourself familiar with this instruction and service manual. Indeed, the non-compliance with instructions and precautions stated in this manual could reduce the equipment working life, result in operating troubles and create unsafe conditions.

## 1- SAFETY INSTRUCTIONS

### ■ GENERAL SAFETY INSTRUCTIONS



**CAUTION** : The equipment can be dangerous if you do not follow our instructions concerning installation and servicing described in this manual and in accordance with applicable European standards and local national safety regulations.

**Please carefully read all the instruction literature before operating your equipment.**

#### **Only trained operators can use the equipment.**

The foreman must ensure that the operator has understood the safety instructions for this equipment as well as the instructions in the manuals for the different parts and accessories.

Read carefully all instruction manuals, label markings before operating the equipment.

Incorrect use may result in injury. This equipment is for professional use only. It must be used only for what it has been designed for. Never modify the equipment. The parts and accessories supplied must be regularly inspected. Defective or worn parts must be replaced.

#### **Never exceed the equipment components' maximum working pressure.**

Comply with regulations concerning safety, fire risks, electrical regulations in force in the country of final destination of the material. Use only products or solvent compatible with the parts in contact with the material (refer to data sheet of the material manufacturer).



**Refer to 'Installation and safety instructions' document  
(doc. 578.001.130-UK)**

## ■ SPECIFIC SAFETY INSTRUCTIONS

### CONTROL UNIT

Some of the electrical components in the control unit use high voltages and are dangerous for your health

Non-compliance with the safety requirements can lead to injury and damage of property

The unit consists of individual components with their own safety instructions.

It is imperative to read the instruction manuals

It is also important that you correctly adhere to all procedures, transport, stocking, correct set up and an installation for safe working of this equipment, in accordance with our instructions.

**Before cleaning or removing components of the equipment, it is compulsory :**

- 1 - to turn off the compressed air supply,**
- 2 - to open the pump material drain valve,**
- 3 - to drain the REGULEX® shot meter and to depressurize all hoses.**

### CONTROL UNIT



This equipment consists of a label plate with the name of the manufacturer, the equipment part number, the interesting informations to use correctly the equipment (pressure, voltage...) and the above pictogram.

The equipment is designed with and consists of high quality materials and components which can be re-used.

The 2012/19/UE European Directive covers all equipments with a crossed-out bin pictogram. Please inform yourself about the collection systems for electric and electronic equipments.

Please according to local rules and **do not throw the old equipments with household wastes**. A correct disposal of the old equipment will help prevent negative consequences for the environment and health.

## 2- DESCRIPTION

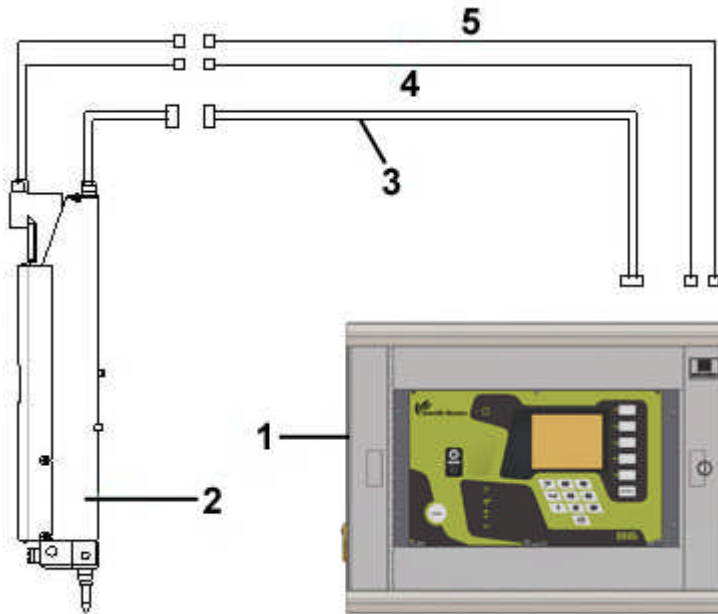
### DESCRIPTION OF THE REGULEX® SYSTEM

The REGULEX® system comprises of a control box, a REGULEX® shot meter and connecting cables. The system is designed to precisely meter and dispense silicone, adhesives and other viscous materials depending on the application

The system is normally mounted on a robot. The robot controller sends a signal to the REGULEX® control box to provide the necessary outputs to the shot meter to dispense the programmed bead.

The main function of the REGULEX® System is to precisely control and regulate material dispensing.

The materials can be applied hot or cold depending on the application



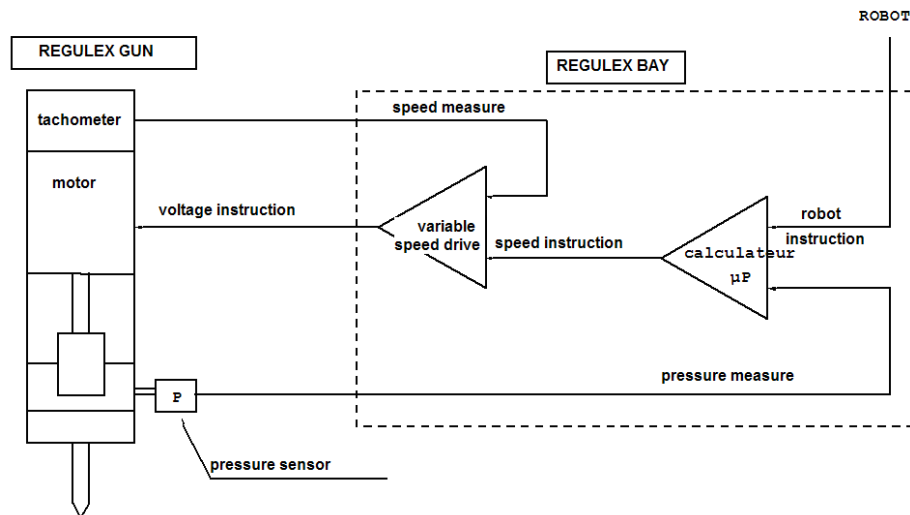
- 1 - B6 REGULEX® control unit with unit
- 2 - REGULEX® shot meter
- 3 - REGULEX® cable (length : 10 m, 15-pins connector)
- 4 - Motor cable (length : 10 m, 4-pins connector)
- 5 - Encoder cable (length : 10 m, 6-pins connector)

### REGULEX® SYSTEM PRINCIPLE

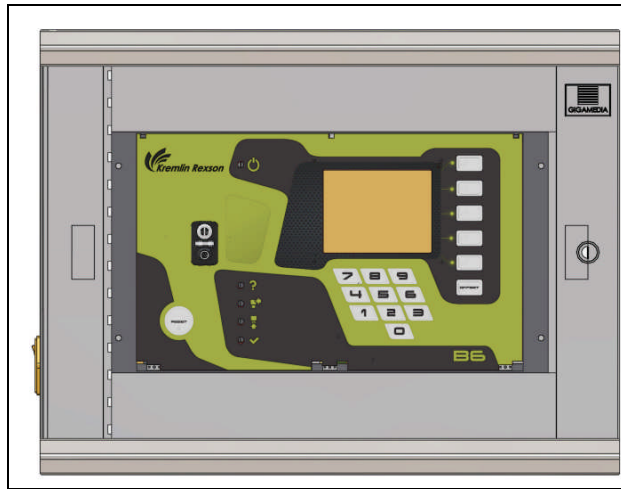
The REGULEX® system is designed to accurately control “**Dispense bead management**” in relation to commands from robotised systems

All communication between Robot and the REGULEX® control unit is regularly updated

This ensures that the shot meter is able to respond in the shortest possible time and give a constant quality of bead.



### 3- TECHNICAL FEATURES OF THE REGULEX® CONTROL UNIT



Comprising of:

- a display screen with controls
- a keyboard for easy programming
- a variable speed drive,
- a processor card,
- a digital display showing - material weight dispensed in real time, Alarm settings, visualization of the dosing piston position and pressures in real time, and a fault log).

The REGULEX® control unit is fitted an industry standard rack mounted electric cabinet.

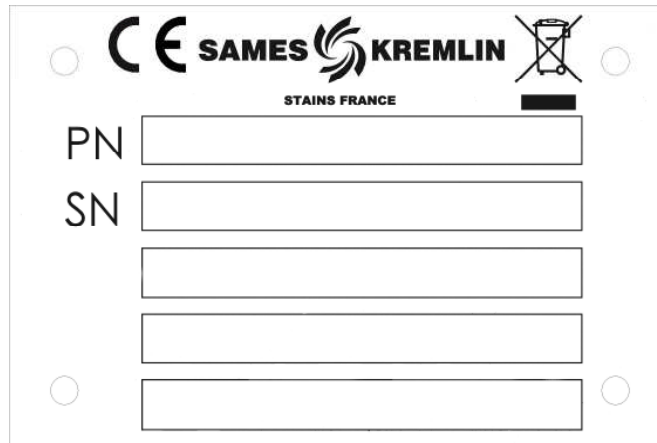
The REGULEX® control unit can also be integrated into a master control system if required

<b>Electric supply (V)</b>	230V - 50 Hz
<b>Power (W)</b>	1200W
<b>Dimensions – Electric Control Box</b>	L 600 mm (24inches) x H 350 mm (14 inches) x P 420 mm (17 inches)
<b>Control Box Protection Standard</b>	IK 08
<b>Control Unit (rack)</b>	19" (L 491mm (19 inches) x H 358 mm (14 inches) x P 300 mm (12 inches)
<b>Weight</b>	12 kg / 26.5 lb
<b>Ventilation</b>	Forced and filtered
<b>Ambient temperature</b>	From 0 to 45°C / from 0 to 113° F
<b>Noise</b>	15 dB
<b>Interfaces</b>	B6 Control Unit and REGULEX® Shot meter B6 control unit and robot interface
<b>RS 485</b>	Yes
<b>Internet, Ethernet connection</b>	In option



## 4- INSTALLATION

### DESCRIPTION OF THE LABEL MARKINGS



<b>SAMES KREMLIN STAINS FRANCE</b>	Name and address of the manufacturer
<b>PN</b>	Product reference
<b>SN</b>	Number given by SAMES KREMLIN. The first 2 numbers indicate the year of manufacture
-	-
-	-
-	Supply voltage in alternative / Frequence / Amperage (ex : 1 AC 230V / 50Hz / 3A)

Install the B6 control unit in a place where the power supply can't be disconnected, for example, in a quiet room.

Use connection terminals for a fixed equipment connected with a power cable that follows a protected process.

Place a feeder disconnecter upstream of the equipment, with a higher gauge (order of magnitude : 10A.. 16A) with a short circuit current of some kiloamperes.

The control unit must be firmly mounted so that it is not affected by vibration.

At the rear part of the B6 control unit:

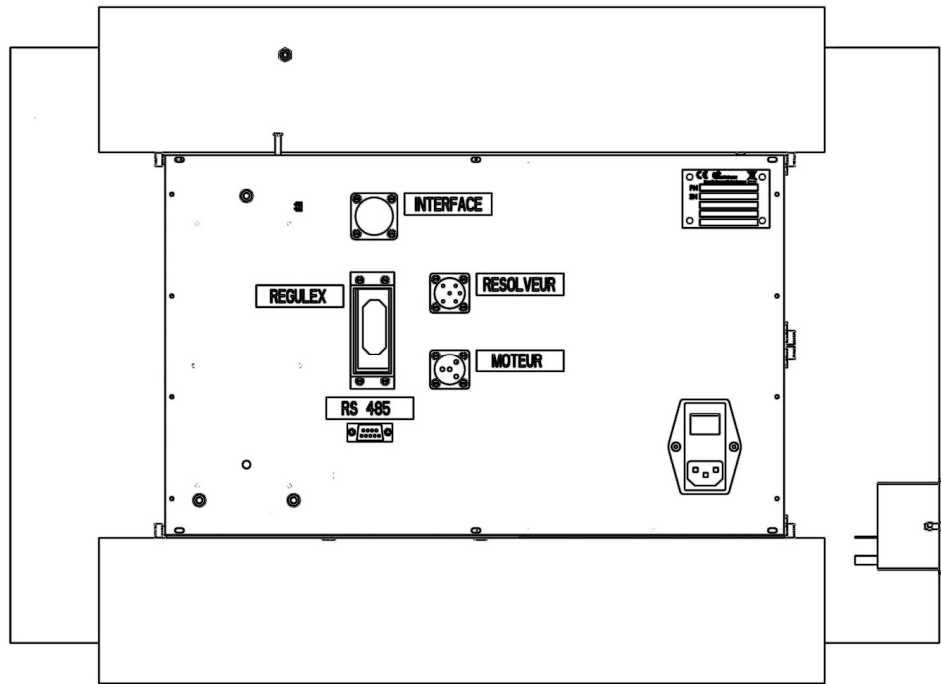
Connect the cables between the B6 control unit and the REGULEX® shot meter:

- Regulex® (15-pins socket, HARTING)
- Encoder (6-pins socket, JAEGER)
- Motor (4-pins socket, JAEGER)

Connection between the B6 control unit and most robots (12-pins socket, JAEGER: INTERFACE UNIT)

NOTA: due to the wide range of options we do not include this in our scope of sale

## REAR PART OF THE B6 BAY



Install a suitable high pressure material hose between the fluid outlet of the supply pump and the fluid inlet of the REGULEX® shot meter.

Install plastic Air hose (4mm x 6mm) to supply the material control valves on the REGULEX® shot meter. Connect the REGULEX® to a compressed air supply using a filter/regulator unit.

Adjust the air pressure to 6 bar / 87 psi.

Connect the supply pump motor to the compressed air using a filter/regulator unit.

Adjust the pressure between 1 to 5 bar / 14.5 to 72.5 psi. Depending on the material type and application.

Plug in the B6 control unit (230 V).

## 5- START UP

### ■ SWITCHING ON

Turn ON the 'O-I' switch, depending on the installation this may be located on the side of the control unit or located on the rear of the control unit

A green light will illuminate,

⇒ switching on the power supply.

⇒ switching on of the screen.

Input the 'O-I' switch located on the front of the control unit.

⇒ operating of the variable speed drive.

## Screen Layout

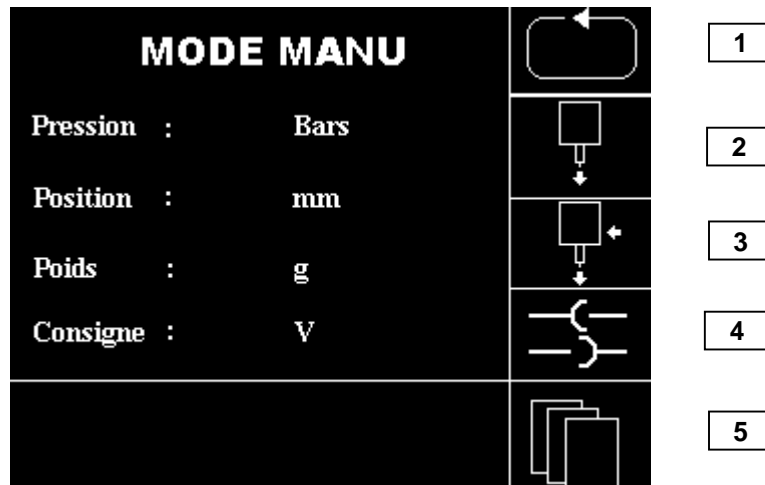


*ILLUSTRATION only and NON CONTRACTUAL  
(modification of the date depending on the evolutions)*

The starting screen, will remain for 5 seconds, and is then replaced by a "manu page".  
The control unit is inactive during this stage.

### ■ MANUAL PAGE

#### Manual Page



Home Page.

From this page, you have access to the following functions :

- 1 - Access to Automatic mode (see 'Auto Page')
- 2 - Access to Extrusion function
- 3 - Access to Priming / filling function
- 4 - Access to Inlets/Outlets page + visualisation (see § Inlets/Outlets)
- 5 - Access to Parameters page for data entry and fault (see § parameters)
- 6 - Access to Sensor offset page (see § offset) by an input on OFFSET key.

*Nota : The 'extrusion' key acts like a push-button. The function is active as long as the key is pressed.*

The 'Auto' and 'Priming' keys act like a push-buttons. The function is "active"(ON) at the first press ( and "inactive" (OFF)at the second press.

In case of a fault, the function automatically resets to the initial state (manual mode and priming stop).

Four lines of data are displayed, and continuously recalculated and updated:

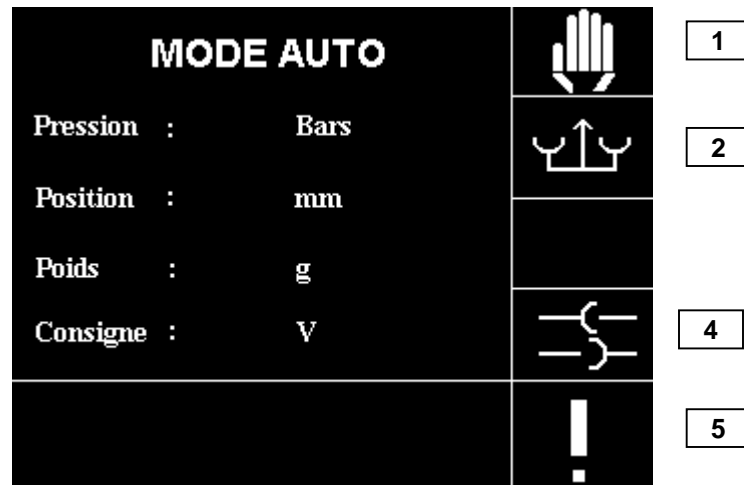
- the pressure,
- the position,
- the Command,
- the dispensed weight.

On the bottom line of the screen the last fault is recorded.

To accept a Fault, go to the 'List of faults' page.

## ■ AUTO MODE

### Auto Page



From this page, you have access to the following functions :

- 1 - Access to the Manu Mode function page (see 'Auto Page')
- 2 - Storage of the dispense weight data (see 'Weight Page')
- 4 - Access to the Inlets/Outlets page + Visualization (see 'Page Inlets/Outlet')
- 5 - Access to the Faults log (see 'Page Fault')

The 'manu' key of this page acts like a push-button. The function is active at the first press and inactive at the second press. In case of a fault, the function automatically resets to the initial state (manual mode). The selection of this page automatically resets the dispensed material weight.

The dispensed material weight is displayed until the start of a new extrusion cycle (i.e when the robot sends a command to dispense).

No review is managed.

Nota : To select a new dispense weight, Change(shift) to Manual Mode.

Four information functions are performed successively :

- the pressure,
- the position,
- the command,
- the weight.

These are all recalculated and displayed continuously.

The lower line of the screen displays the last fault recorded. Go to 'List of faults' to accept a fault.

## 6- OPERATING OF A REGULEX® SYSTEM

To operate the REGULEX®, you must :

- Set the offsets (see 'Page offsets - § 12 ),
- Check the parameter values and modify them if necessary (see 'Page parameters - § 10').

Parameters are entered at the factory before the control unit is released for delivery.

We give each parameter a nominal value for the first start up. (see parameter settings).

**Warning : Some parameters will only correspond to specific REGULEX® models.**

Parameters values can always be modified to ensure optimum operating of the REGULEX® system.

### ■ PRIMING

This function is performed using **manual** operating mode (**MANU page**).

- Press the **EXTRUSION** {2} button until the REGULEX® piston reaches its lower position.
- Release the **EXTRUSION** key.
- Pressurize the material supply pump (from 0 to 6 bar / from 0 to 87 psi) and the valves on the shot meter to (6 bar / 87 psi) :

The material inlet and outlet valves of the REGULEX® proportioning gun are open.

- Press the **PRIMING/FILLING** {3} key.

The material is pumped through the hoses into the REGULEX® metering chamber.

Material will flow out of the REGULEX® outlet valve, allow the material to continue flowing for 1 to 2 minutes to purge any air from the system : the REGULEX® is now primed.

- Press the **PRIMING/FILLING** {3} key again

→ The Priming cycle is completed, the REGULEX® valves are closed.

### ■ REGULEX® FILLING

Display on the screen '**AUTO MODE**' {1}.

The 'FILLING' LED is "ON", the REGULEX® chamber is filling with material.

When the filling cycle is finished :

The 'READY' LED "will illuminate" and the 'FILLING' LED "goes out".

### ■ MANUAL DISPENSING

-Display on the screen '**MANU MODE**' {1}.

At the end of the filling operation, the REGULEX® piston is in the upper position, the system measures, checks, regulates the piston position, the pressure in the chamber, and the flow instructions.

- Press the 'EXTRUSION' key :

The outlet valve opens, and the REGULEX® dosing piston descends down the metering chamber as programmed

→ Material Bead Dispensing

At the end of the dispensing cycle, a display on the screen will appear '**AUTO MODE**' {1} and the REGULEX® will refill ready for the next cycle.

## ■ AUTOMATIC BEAD DISPENSING



**IMPORTANT : Check that the parameters have been preset according to the kind of REGULEX® proportioning gun.**

- Display on the screen '**AUTO MODE**'.

→ The robot has control of the REGULEX® proportioning gun.

Three functions are performed successively during the automatic mode :

Filling - Regulation - Extrusion.

### **Filling :**

The REGULEX® chamber is filled by servo-controlling the piston raising the pressure in the chamber.

The piston reaches the Top Position (this parameter is defined depending on the bead length and section).

During the filling, the LED is ON. When the filling is completed, the LED goes out.

### **Regulation :**

The system regulates the pressure to reach the desired value, corresponding to the last stored flow.

When the correct pressure and position are reached, the 'READY' LED lights up.

A 'READY' signal is sent to the robot.

The REGULEX® outlet valve stays closed.

### **Extrusion :**

The robot controls the seal extrusion.

The REGULEX® outlet valve opens. The 'EXTRUSION' LED lights up.

→ Dispensing of the bead.

### **IMPORTANT**

During programming of the material bead trajectory, start the dispensing cycle of the bead where it has the most constant diameter.

At the end of bead :

- Keep a constant bead flow rate at the end of the trajectory,
- Program a NO flow condition before passing over the bead,
- Program the outlet valve to close.

### **CAUTION**

*Before moving or disconnecting any cables connected to the REGULEX® control unit, you must switch off the control unit.*

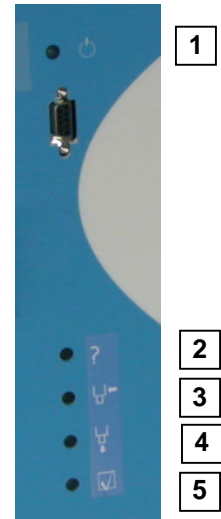
## ■ SIGNALLING - INDICATING LIGHTS

The B6 control unit is fitted with 5 LEDS :

- 1 - '**POWER ON**' LED (green).
- 2 - '**FAULT**' LED (red) indicating a fault and the REGULEX® has stopped
- 3 - '**FILLING**' LED (orange) indicating that the REGULEX® is going to be filled.
- 4 - '**EXTRUSION**' LED (green) indicating that the system is in extrusion stage.
- 5 - '**READY**' LED (green) indicating that the REGULEX® is filled and ready to dispense.

### Nota :

The LEDS (FILLING, READY, EXTRUSION) are functions in automatic mode only.



## 7- SHUTDOWN OF THE REGULEX® SYSTEM

### ■ SHUTDOWN FOR MORE THAN 5 MN

The REGULEX® dosing valve must return to rest position (home).

A **NO** flow must be programmed.

Place the nozzle in a receptacle of compatible plasticiser (or inert material).

### ■ EXTENDED SHUTDOWN (EXAMPLE : NIGHT)

Carry out the previous stages.

Turn the 'O-I' switch located on the front of the control panel to the 'O' position and turn off the power (input during 1 second) but leave the control unit (cabinet) switched on.

Turn off the compressed air supply to the pump system.

Leave the compressed air supply ON to the REGULEX® valve.

### ■ STARTING UP

Turn ON the air supply to the pump system.

Switch on the REGULEX® control panel by turning ON the 'O-I' switch.

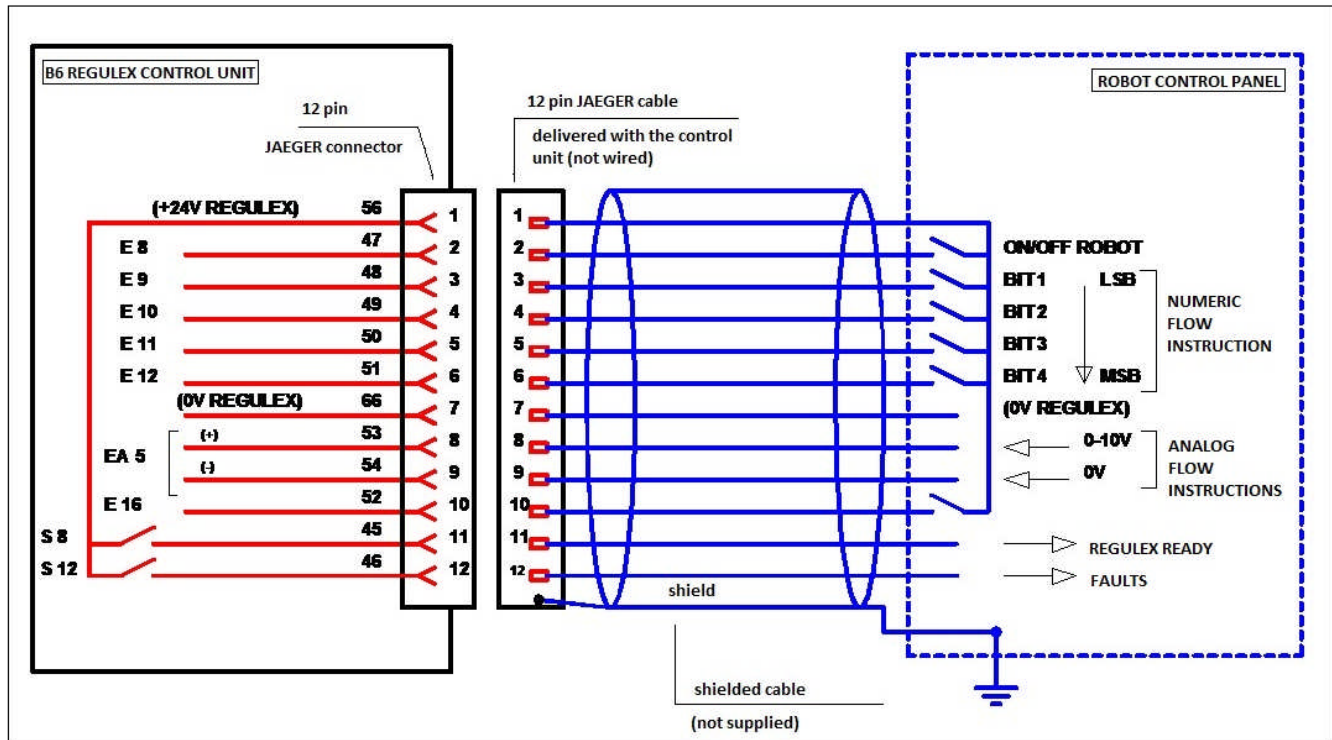
From the REGULEX® control panel, purge (PRIMING sequence) the REGULEX® shot meter before continuing an automatic cycle (starting production).

## 8- INTERFACING THE REGULEX®

The 12 pins JAEGER connector enables communication between the B6 REGULEX® control unit and the robot control panel.



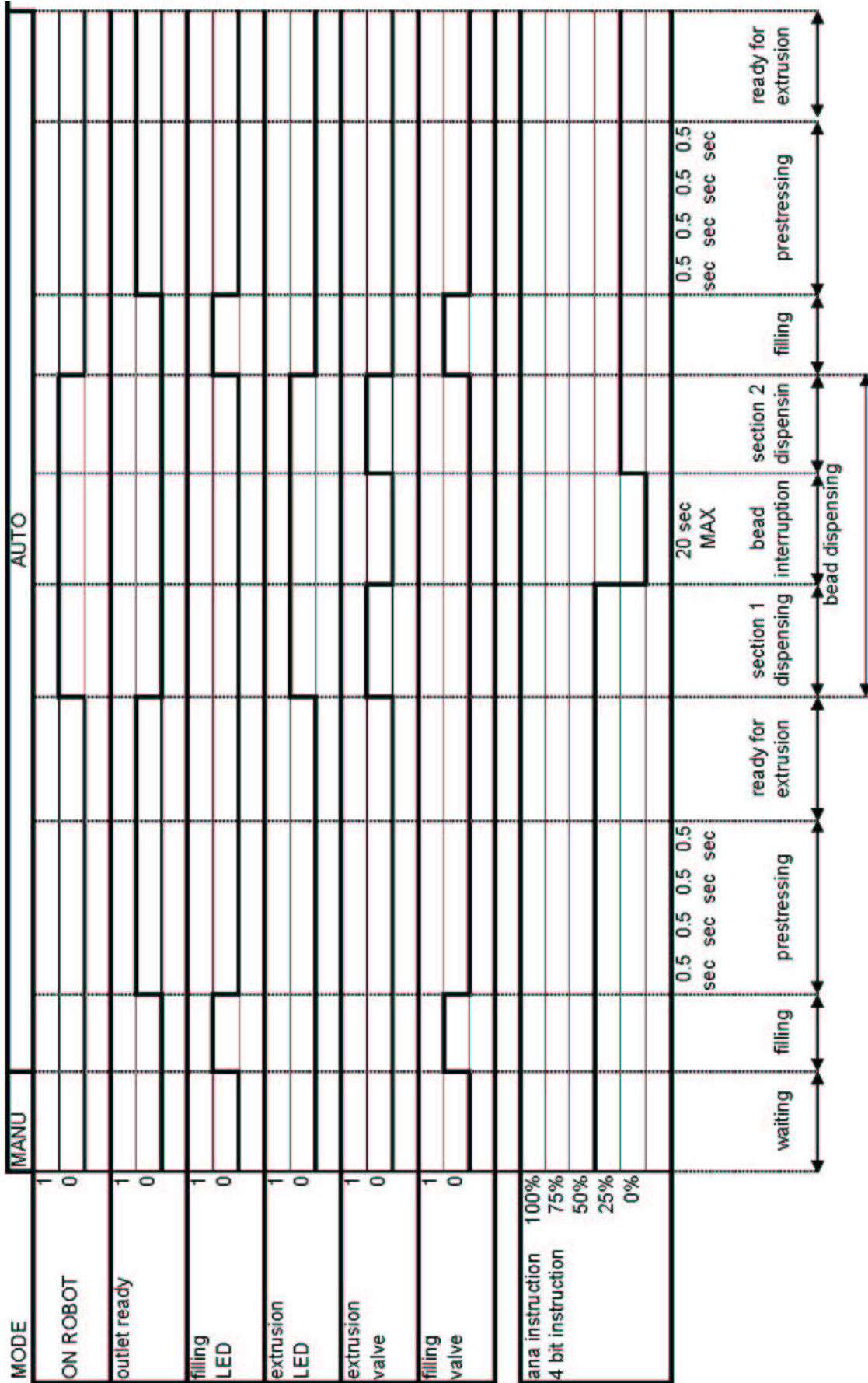
**WARNING : the cable connecting the 12 pin JAEGER connector to the robot unit must be shielded. The shield must be connected to the robot control panel earth connector.**





# 9- TIMING DIAGRAM

## Example



## 10- ADJUSTMENT OF PARAMETERS

### ■ LIST OF PARAMETERS

Test parameters are entered at the factory before the control unit is delivered.  
Each parameter value is given a nominal for the first start up.

PARAMETER N°	SPECIFICATION	MINI LIMIT	MAXI LIMIT	VALUE FOR THE FIRST OPERATING
01	Type of Interface	01	04	04
02	Maximum system pressure (bar)	10.0	150.0	50
03	Lower piston Limit position (mm)	1.0	50.0	11
04	Maximum filling time cycle (sec)	10.0	99.9	99.9
05	Top piston position after Filling (mm)	00.0	50.0	5
06	Minimum Pressure during the filling (bar)	00.0	25.0	2
07	Servo-control gain during the filling cycle (see definition below)	01	99	10
08	Servo-control gain regulation during the dispensing cycle (see definition below)	01	99	10
09	Preset for low level piston position during pre pressurising stage (in mm)	00.0	50	8
10	Allowable Pressure Tolerance between pre pressurised material and start of extrusion (% bar)	01	20	10
11	Electronic filter to control any interference from Regulex or Robot	01	20	10
12	Time duration for bead profile modification during production (in ms)	01	20	10
13	Servo control gain during bead profile modification (%)	01	99	10
14	Maxi flow coefficient (%)	01	99	10
15	Material Preset flow rate during manual application (0-10V)	00.0	99.9	10
16	Language choice (Fr.: 1; IT.: 2; Engl.: 3; Spa.: 4)	1	3	1
17	Material density (%)	25	400	100
18	Regulex® piston section (mm <sup>2</sup> )	01	4000	2205
19	Weight tolerance alarm (%)	01	20	5
20	Simulation internal value of the external instruction	00	99.9	10
21	Configuration parameter for RS 232 connection			5
22	Configuration parameter for RS 485 connection			6
23	Response address of the ModBus slave	1	127	2
24	Pressure sensor scale	10	250	50
25	Position sensor scale	10	100	25
26	Exhaust valve version	0	1	0



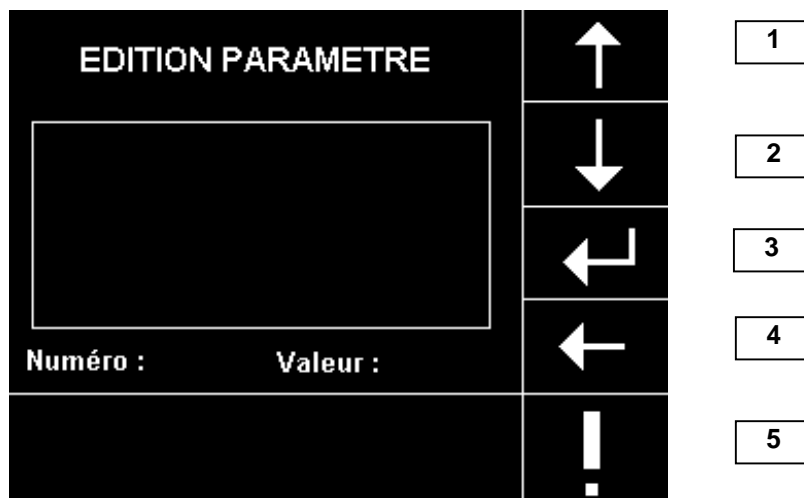
**Parameters listed below only correspond to specific REGULEX® shot meters : P 02, P 03, P 05, P 09, P 18, P 24, P 25, P 26.**

**Incorrect adjustment of these parameters will cause the REGULEX® shotmeter to malfunction and may cause damage.**

REGULEX® version	Stroke	P 03 Low position (mm)	P 05 High position (mm)	P 09 Low position (mm)	P 18 Piston section (mm <sup>2</sup> )	P 02 Pressure (bar)	P 24 Pressure sensor (bar)	P 25 Position sensor (mm)	P 26 Kind of valves
<b>Type : compacted</b>									
2	25	23	5	20	71	45	50	25	0
5	25	23	5	20	198	45	50	25	0
25	13	11	5	8	2205	45	50	25	0
50	25	23	5	20	2205	45	50	25	0
<b>Type : reinforced, white case</b>									
47 D 220V	50	48	5	40	961	60	100	50	1
47 D 24V	50	48	5	40	961	60	100	50	1
100 D 220V	50	48	5	40	2155	45	100	50	1
100 D 24V	50	48	5	40	2155	45	100	50	1
<b>Type : reinforced, blue case</b>									
47 R 220V	50	48	5	40	961	100	150	50	1
47 R 24V	50	48	5	40	961	100	150	50	1
107 R 220V	50	48	5	40	2155	80	150	50	1
107 R 24V	50	48	5	40	2155	80	150	50	1
7 R 24V	50	48	5	40	198	100	150	50	1
27 R 24V	50	48	5	40	642	100	150	50	1

■ **SETTING PARAMETERS**

Page for Inputing Parameters



Access to Parameters is via the '**MANU page**'.

From this page, you have access to the following functions :

From Pages 1 to 3 - Modification of control unit operating parameters.

4 - Back to the main page.

5 - Access to the function and to the fault log (see 'Fault page').

The '↑' and '↓' keys enable the selection of a parameter between the 26 options available.

All parameters have an individual commentary about its specific function.

The digital keyboard is only active in this mode.

All parameters are accessible for reading and modification.

Pressing the '↵' ENTER key will validate any new data entered.

➤ **PARAMETER 01 : TYPE OF ROBOT INTERFACE**  
(*connection mode between the robot and the REGULEX® used to code the flow information*)

Mini. limit	Maxi. limit	Value for the first operating
01	04	04

Possible values	Interface type
01	Robot 4 bits
02	Reserved
03	External analog instruction
04	Internal analog instruction

➤ **PARAMETER 02 : MAXIMUM PRESSURE DURING FILLING, REGULATION OPERATIONS AND EXTRUSION**  
(*pressure threshold not to exceed in the chamber of the REGULEX®*)

Mini. limit (bar)	Maxi. limit (bar)	Value for the first operating (bar)
10.0	150.0	50.0

➤ **PARAMETER 03 : LOWER PISTON LIMIT**

*(position that the REGULEX® piston must never pass during the extrusion (manual or automatic) in order to avoid a bottoming out)*

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
1.0	50.0	11.0

➤ **PARAMETER 04 : MAXIMUM FILLING TIME**

*(when the filling begins, a timer of the value adjusted to the parameter 04 is activated)*

Mini. limit (sec.)	Maxi. limit (sec.)	Value for the first operating (sec.)
10.0	99.9	99.9

➤ **PARAMETER 05 : POSITION AT WHICH THE REGULEX IS CONSIDERED FILLED**

*(position of the REGULEX® at which it is considered filled)*

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
00.0	50.0	05.0

The adjustment of the position provides:

- the volume of glue or mastic, necessary for the dispensing,
- a possible backward movement of the piston to depressurize the material located in the chamber before reaching the piston upper stop (stop located at 1 mm of the maximum high position).

➤ **PARAMETER 06 : MIN. FEEDING PRESSURE**

*(Pressure at which the material supply starts)*

Mini. limit (bar)	Maxi. limit (bar)	Value for the first operating (bar)	Recommended value
00.0	25.0	02.0	00.1

This parameter defines the speed of ascension of the piston in feeding : the lower the pressure is, faster is the feeding

*Caution : The pump supplying the REGULEX® must give the material flow.*

➤ **PARAMETER 07 : SERVO-CONTROL GAIN IN PRESSURE DURING THE FILLING STAGE**

*(Speed of acceleration of the servo motor allowing acceleration or deceleration during filling)*

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

This parameter defines the speed of the piston ascent during the filling stage : the higher the servo-control is, the faster the piston goes up.

**Example : If the value is to 10 and that the feeding is not fast enough → change the parameter value to 20 to accelerate the feeding.**

*Caution : The pump feeding the REGULEX® must be able to supply material at the correct volume.*

➤ **PARAMETER 08 : SERVO-CONTROL GAIN IN PRESSURE DURING THE REGULATION STAGE**

*(Acceleration gain of the motor allowing the chamber to reach the regulated pre-pressure [SENDING THE 'READY' SIGNAL])*

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

- **PARAMETER 09 : PISTON LOW POSITION LIMIT DURING THE REGULATION STAGE**  
*(position limit that the REGULEX® piston shall not exceed during the regulation stage)*

Mini. limit (mm)	Maxi. limit (mm)	Value for the first operating (mm)
00.0	50.0	08.0

That position preset after test enables the detection:

- a valve leak,
- air presence in the REGULEX® chamber.

- **PARAMETER 10 : PRESSURE TOLERANCE FOR THE REGULATION OPERATION**  
*(Tolerance between theoretical pressure and real pressure at the beginning of extrusion to vet the READY signal)*

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	20	10

*Example : - If the value of the parameter is increased → the Ready signal ` is validated more quickly  
 - If the value of the parameter is decreased → The quality of the bead is improved*

- **PARAMETER 11 : FLOW INSTRUCTION FILTER**  
*(limits the uncontrolled variations of bead diameter due to interferences on the ROBOT-REGULEX® connection)*

Mini. limit	Maxi. limit	Value for the first operating	Recommended value
01	20	10	20

*Example : If the value is to 20% :*

- above this threshold → the flow variation is considered
- below this threshold → the flow variation is not considered

*Caution : We use this parameter in analogue mode only.*

- **PARAMETER 12 : MAX. PERIOD FOR FLOW MODIFICATION**  
*(necessary time to change the bead variation expressed by torque of 50 ms)*

Mini. limit	Maxi. limit	Value for the first operating
01	20	10

*Example : - 01 = 50 ms.  
 - 20 = 1sec.*

- **PARAMETER 13 : SERVO-CONTROL GAIN DURING THE FLOW MODIFICATION STAGE**  
*(defines the pressure servo-control features during the flow variation stage)*

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	99	10

- **PARAMETER 14 : MAX. FLOW COEFFICIENT**  
*(defines the maximum flow obtained when the robot information is at 100% of its value)*

Mini. limit	Maxi. limit	Value for the first operating
01	99	10

- **PARAMETER 15 : FLOW STANDRAD INSTRUCTION IN MANUAL APPLICATION**  
(defines the flow when the SB 1 manual application push button is input [In 1/10 Volt])

Mini. limit	Maxi. limit	Value for the first operating
00.0	99.9	10.0

Example : with a flow of 150cc : - P15 = 50 → flow = 150cc/mn x 0.5 → 75cc/mn  
- P15 = 10 → flow = 150cc/mn x 0.1 → 15cc/mn

- **PARAMETER 16 : LANGUAGE CHOICE**

Mini. limit	Maxi. limit	Value for Start up
1	3	1

Possible values	Language
1	French
2	Italian
3	English
4	Spanish

- **PARAMETER 17 : DENSITY OF THE APPLICATED MATERIAL**  
(Density of the fluid application in relation to water (%))

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
25	400	100

Example.: - Density = 1,35 → 135%  
- Density = 0,8 → 80%

- **PARAMETER 18 : REGULEX® PISTON SECTION**  
(Piston section in mm<sup>2</sup> with 3 significative digit numbers, without decimal (refer to chart - § 10))

Mini. limit (mm <sup>2</sup> )	Maxi. limit (mm <sup>2</sup> )	Value for the first operating (mm <sup>2</sup> )
01	4000	2205

- **PARAMETER 19 : TOLERANCE ON VARIATION OF APPLICATION WEIGHT FOR EACH CYCLE**

Mini. limit (%)	Maxi. limit (%)	Value for the first operating (%)
01	20	5

- **PARAMETER 20 : TEST SIMULATION OF FLOW INSTRUCTION**  
(Internal simulation of the external instruction, usually sent by the robot. It is only active in mode 4 of this parameter 1. Value from 0 to 10 V, with only one decimal)

Mini. limit	Maxi. limit	Value for the first operating
00.0	99.9	10.0

➤ **PARAMETER 21 : CONFIGURATION PARAMETER OF THE RS 232 CONNECTION**

```
RS232 7bits>00/8bits>10
      300 >1 2400>4 SParit>20
      600 >2 4800>5 Ppair>40
      1200 >3 9600>6 Plpair>60
```

Can be programmed:

- The speed (300, 600, 1200, 2400, 4800, 9600 bauds) - respective code (1, 2, 3, 4, 5, 6), any other code is considered for 9600 bauds
- The format (7 bits/ 8 bits) - respective code (00,10), any other code is considered for 8 bits
- The parity (without, with even parity, with uneven parity) - respective code (20,40,60), any other code is considered for "without parity"

Serial connection not managed.

The parameter is taken into account only when switching on or reset of the bay.

➤ **PARAMETER 22 : CONFIGURATION PARAMETER OF THE RS 485 CONNECTION**

```
RS485 8bits/sans Parite
      300 ->1 2400->4
      600 ->2 4800->5
      1200->3 9600->6
```

The speed (300, 600, 1200, 2400, 4800, 9600 bauds) - respective code (1, 2, 3, 4, 5, 6) , any other code considered for 9600 bauds, is the only parameter that can not be modified.

The format is fixed (8 bits) and the parity is not managed.

The parameter is taken into account only when switching on or reset of the unit.

➤ **PARAMETER 23 : RESPONSE ADDRESS OF THE ModBus SLAVE**

Mini. limit	Maxi. limit	Value for the first operating
1	127	2

Any slave stays liable to the processing of the frames to the slave 0 however (refer to specification of protocol).

The parameter is taken into account only when switching on or reset of the unit.

➤ **PARAMETER 24 : PRESSURE SENSOR SCALE**

Mini. Limit (bar)	Maxi. Limit (bar)	Value for the first operating (bar)
10	250	50

*Nota : to take into account the modification of the parameter input "Reset"*

➤ **PARAMETER 25 : POSITION SENSOR SCALE**

Mini. Limit (mm)	Maxi. Limit (mm)	Value for the first operating
10	100	25

*Nota : to take into account the modification of the parameter input "Reset"*

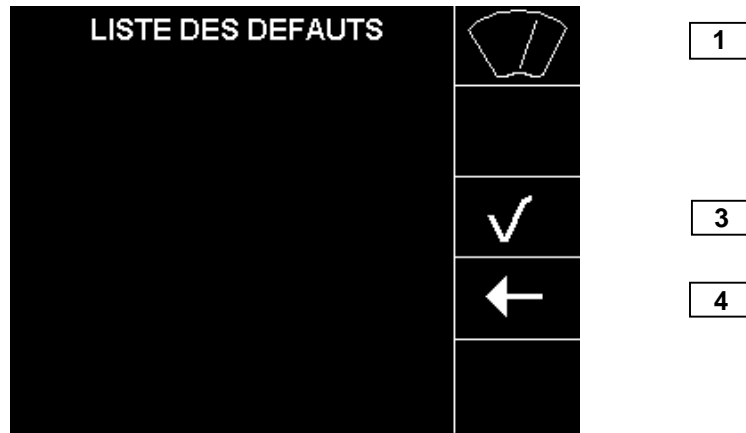


➤ **PARAMETER 26 : EXTRUSION VALVE VERSION**

Mini. Limit	Maxi. Limit	Value for the first operating
0	1	0
P 26 = 0 for REGULEX® type compacted (valve normally open) P 26 = 1 for REGULEX® type reinforced (valve normally closed) <i>Nota : to take into account the modification of the parameter input "Reset"</i>		

## 11- FAULTS

### Fault Page



From this page, you have access to the following functions :

- 1 - Erasing the fault list.
- 3 - Acknowledgement of the last fault.
- 4 - Back to the previous menu page (parameter input in manual mode, or auto page in manu mode).

The acknowledgement of the last fault has two effects :

- Cancellation of the fault number.
- Erasing the fault text in the fault zone of the relevant concerned.

The list of faults is managed in the editing mode.

Each line has the fault number, recorded in 2 digit numbers and text up to 24 characters.

The list will display the last 16 faults, the most recent fault is under the title (at the top of the screen).

The fault numbers are on a timed function, the timer is reset to zero when switching on, faults are stored in the memory for examination using the RS 485 connection.

LIST OF FAULTS	POSSIBLE CAUSES	CHECKS TO MAKE AND MODIFICATIONS TO CARRY OUT
DEF 8	Overpressure in regulation.	<ul style="list-style-type: none"> <li>- Due most of the time to a, difference between the flow instruction used to calibrate and a new flow instruction requested in production.</li> <li>- In that case, the system takes as instruction 80% of the P 02 parameter value.</li> <li>- Requires an extrusion with the new value of flow for a recalibration and suppression of Fault.</li> <li>- Reduce P 02</li> </ul>
DEF 9	Overpressure in extrusion.	<ul style="list-style-type: none"> <li>- Same as DEF 8 but during the extrusion.</li> <li>- Reduce parameter P 14.</li> </ul>
DEF 10	Filling duration too short - P 04 too low. - Filling pump flow insufficient or null.	<ul style="list-style-type: none"> <li>- Check the pump pressure. Increase it if necessary.</li> <li>- Check the Material filter. Clean it if necessary.</li> <li>- Check the hoses. Replace them if necessary.</li> <li>- For hot supply, check the temperature.</li> <li>- Check if the drum is not empty. Change it if necessary.</li> <li>- Increase the value of P 04.</li> </ul>
DEF 11	<ul style="list-style-type: none"> <li>- Filling pressure too high.</li> <li>- P 07 too low.</li> </ul>	<ul style="list-style-type: none"> <li>- Increase the value of P 07 (maxi 99).</li> <li>- Check the pump pressure. Reduce it if necessary.</li> <li>- Material more fluid. Reduce the pump pressure.</li> <li>- For hot supply, reduce the temperature.</li> </ul>
DEF 12	<ul style="list-style-type: none"> <li>- Material too fluid.</li> <li>- Air in the material.</li> <li>- Value of the parameter 09 too low.</li> </ul>	<ul style="list-style-type: none"> <li>- Increase the value of P 09.</li> <li>- Check if the drum is not empty. Change it if necessary.</li> <li>- Check the follower plate. Drain it if necessary.</li> <li>- Check the pressure on the follower plate. Increase it if necessary.</li> <li>- For hot supply, check the temperature. Reduce it if necessary.</li> </ul>
DEF 13	<ul style="list-style-type: none"> <li>- Flow rate too high.</li> <li>- Value of the parameter 08 too high.</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the flow instruction in regulation.</li> <li>- Reduce the value of P 08.</li> </ul>
DEF 14	<ul style="list-style-type: none"> <li>- Tip clogged.</li> <li>- Flow rate too high</li> <li>- Material viscosity too high.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the material viscosity. Check the material expiry date.</li> <li>- For hot supply, check the temperature and increase it if necessary.</li> <li>- Check the state of the tip, clean it and unclog it if necessary.</li> <li>- Reduce the fluid flow. Reduce the value of P 14 and reduce the robot speed.</li> </ul>
DEF 15	<ul style="list-style-type: none"> <li>- Too large bead volume.</li> <li>- Bad adjustment of the parameter 03 and 05.</li> <li>- Valve leak.</li> </ul>	<ul style="list-style-type: none"> <li>- Check bead volume:                For Regulex 25 : 25 cc maxi                For Regulex 50 : 50 cc maxi.                For Regulex 47 : 47 cc maxi.                For Regulex 100 : 100 cc maxi</li> <li>- Check the parameter P 03. Increase its value (refer to chart - § 10).</li> <li>- Check the parameter P 05. Decrease its value.</li> <li>- Check valve.</li> </ul>
DEF 22	- Variator in error.	<ul style="list-style-type: none"> <li>- Check if the switch (0/I) on the front of bay is engaged (put in power of the variator).</li> <li>- See the faults'list of the variator (refer to Doc. Variator).</li> <li>- Check the cable connections.</li> </ul>
DEF 23		Motor overload

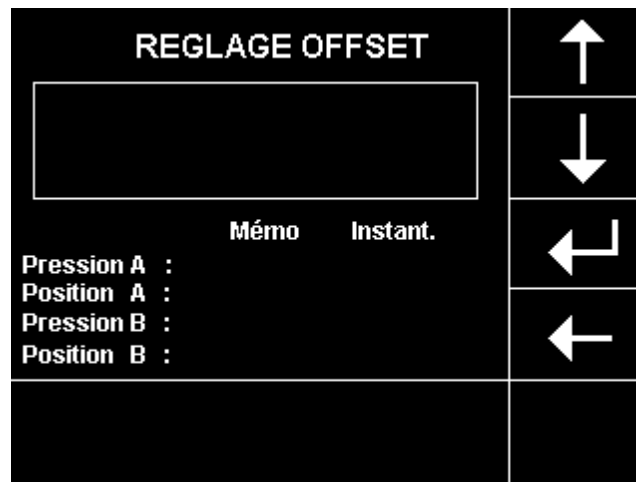
## 12- ADJUSTMENT OF THE OFFSETS - CALIBRATING THE B6 CONTROL UNIT AND THE REGULEX®

This operation is necessary to calibrate and synchronise the B6 REGULEX® control unit with the REGULEX® shotmeter.

It consists of resetting to zero of the pressure transducer and the position sensor / linear transducer. These adjustments are made :

- On the B6 control unit,
- On the sensors,
- On the REGULEX® shotmeter.

### Offset Page



This page, gives you access to the following functions :

- Back to the manu page
- Recalibrating the sensors.

The '↑' and '↓' keys enable the selection of a parameter between the 4 available.

The 4 available parameters are :

- Pressure sensor Regulex A
- Position sensor Regulex A
- Pressure sensor Regulex B
- Position sensor Regulex B

The parameters are associated to a commentary on the function.

The commentary and the offset values are written in editing mode in the frame provided for that purpose.

The digital keyboard is not active in that mode.

All the parameters are available in reading and modification.

On two columns, the previous stored value and the sensor raw value (without offset compensation); the display is made in physical quantity (bar and mm).

Only one input on the '↵' key vets the sensor current value as a new origin. The limiting control is in conformity with the previous version. If fault, a message is displayed in the Fault zone.

Pressure sensor Channel A : Offset automatic compensation on pressure sensor channel A (bar)

Position sensor Channel A : Offset automatic compensation on position sensor channel A (mm)

Pressure sensor Channel B : Offset automatic compensation on pressure sensor channel B (bar)

Position sensor Channel B : Offset automatic compensation on piston position sensor channel B (mm)

### **Offset patching procedure - How to calibrate**

The unit must be 'switched on', but not 'in service'.

⇒ The variable speed drive must not be supplied 'with power'.

⇒ The REGULEX® proportioning machine must **not be pressurised**.

Release any residual material pressure from the supply pump - the material hose - and the REGULEX® shot meter.

#### **Pressure Sensor Calibration :**

Select 'Sensor pressure Regulex A' ⇒ a display : xx bar / xx psi will show

xx bar / xx psi is the pressure that the sensor is measuring.

The value of this pressure must be within  $\pm 4$  bar i.e (-4 bar / 59 psi and +4 bar / 59 psi) to make the calibration possible (if the pressure sensor is outside these values then it is faulty and should be replaced).

RECORD THE PRESSURE SHOWN & ENTER

**xx bar / xx psi + ↵ key → pressure 0**

#### **Position offset patching :**

Select sensor position Regulex A ⇒ display : xx mm

By means of a screwdriver, lift up the end of the potentiometer (13) that is on the lubricator (28) and raise it to the top of the light.

The value of that position must be contained in 0 to + 4mm to make the validation possible (otherwise, fault of the movement sensor).

**xx mm + ↵ key → position 0**

#### **Important :**

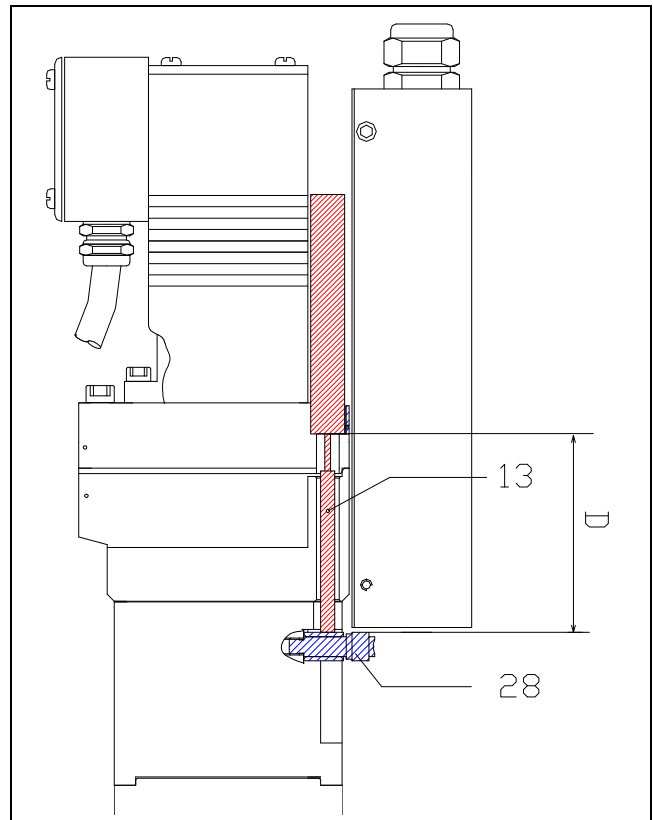
Stroke length of Regulex® shot meters position sensors :

- REGULEX® Compact Monoblock shot meter:  
Stroke D = 69,5 mm

- REGULEX® Divorced shot meter Stroke D =  
123 mm

Example above :

Dosing machine, version compacted 5cc



## 13- INLETS - OUTLETS / INPUTS AND OUTPUTS

### Inlets/Outlets Page

ETAT ENTREES-SORTIES			
E1 :	E13 :	S1 :	S5 :
E2 :	E14 :	S2 :	S6 :
E3 :	E15 :	S3 :	S7 :
E4 :	E16 :	S4 :	S8 :
E5 :			S9 :
E6 :			S10 :
E7 :	E9-E12 :		S11 :
E8 :	S12-S16 :		

Nota : E = Entrée or inlet/input  
S = Sortie or outlet /output

This page displays under binary from (0 or 1) :

- The inlets from E1 to E8 and from E13 to E16,
- The outlets from S1 to S11,
- The external robot instruction,
- The Fault word available on external connector.

The inlets corresponding to the robot 4 bits (from E9 to E12) are represented in decimal from 0 to 15.

The outlets corresponding to the Faults outlets (from S12 to S16) are represented in decimal from 0 to 31.

The variables are refreshed.

#### ■ FLOW CODING (E9 → E12) : DISPLAY FROM 1 TO 15

Hexadecimal - binary equivalence

1 - 0001	6 - 0110	11 - 1011
2 - 0010	7 - 0111	12 - 1100
3 - 0011	8 - 1000	13 - 1101
4 - 0100	9 - 1001	14 - 1110
5 - 0101	10 - 1010	15 - 1111

## 14- DISPENSED WEIGHT

#### ■ ALARM 'DISPENSING WEIGHT'

The selection of the dispensed weight is carried out by pressing the 'Weight' key on the 'Auto mode' page.

The instruction is stored under the form of the parameter 24, for its storage in EEPROM (but not available via the parameter modification function).

By validating the 'Weight' while the dispensed weight has a zero value will deactivate the checking function

The analysis of dispensed weight is made at the end of extrusion (when the extrusion signal passes from active to inactive).

The following formula is applied : if  $\text{AbsoluteValue} (\text{Theoretical Value} - \text{Dispensed weight during extrusion}) > \text{Tolerance} * \text{Theoretical Value}$ , then an alarm is generated. Any malfunction of the parameters can lead to an alarm for each extrusion.

## ■ CALCULATION AND DISPLAY OF THE DISPENSED WEIGHT

The extruded weight is displayed on the screen.

In manual mode, all the successive extrusions are cumulated. No reset to zero is made between each extrusion.

In automatic mode, the display is refreshed all the 300 ms and is fixed at the end of extrusion. The display is maintained until the beginning of the next extrusion.

The end of extrusion is defined as when the extrusion inlet has changed from active to inactive.

The passage from a mode to another (manu<->auto) leads to the reset to zero of the display.

The extruded weight is obtained by means of the following formula (within about a sign) :

$(\text{Position at the beginning (mm)} - \text{Current Position (mm)}) * \text{Section (mm}^2) * \text{Density}$ .

This result is divided by 10000 to obtain the weight in gram. All calculations are made in whole value, without fluctuating calculation. The result is rounded to the gram.

During the piston moving stage, the value displayed is the value that is applied.

## 15- COMMUNICATION

### ■ PROTOCOL

The protocol of communication used is a light version of ModBus.

At the beginning, the protocol was for operating in a MODICON (Schneider) programmable automaton environment. As some of the functions are appropriate to an automaton, only the functions of reading / writing of words (individual or by blocs) and a function of test are kept. They are :

**Functions 3 and 4** : multiple reading of words (virtual address in word).

**Function 5** : writing of a byte in Boolean (in RAM only)

**Function 6** : writing of a word (in RAM)

**Function 8** : under function 0, simple echo of line (test of communication)

**Function 16** : writing of N words

All functions not implemented are treated as illegal functions (sending n°1 specific ('ILLEGAL FUNCTION'))

Protocol available on the web site [www.modicon.com](http://www.modicon.com)

Document of reference :

Modicon ModBus Protocol (in English only)  
PI-MBUS-300 Rev. J

### ■ DATA EXCHANGE

The partition of zones available by the protocol corresponds to the physical mapping of the MC9S12DP256 central processing unit.

The ModBus addresses are always under the form of words, but the microcontroller addresses are always under the form of bytes. Then, there is still a 2 factor between the ModBus addresses and the HC 12 addresses. Theoretically, only the ModBus addresses interest the user.

#### Physical Inlets/ Outlets

The inlet-outlet zone from 0 to 3FF corresponds to the microcontroller inlets/outlets.

For operating safety reasons, it is only available in reading.

For the understanding of the datas, please refer to the Motorola document.

The zone covers the 0-3FF space that is to say from 0 to 1FF in ModBus.

That access, without interest a priori, can enable a possible diagnosis of the card by distant connection.

## EEPROM Memory

The EEPROM zone is between 400 to FFF (3 Bytes). It contains the operating parameters.

There are 5 different parameters, all of them are saved on 4 bytes.

Parameters available via the keyboard, numbered from 1 to 26, available in reading and writing.

Parameter of electronic offset that corresponds to the value representing the zero of the analog amplification chain. They are 8 and correspond to the analog channels from 0 to 7, available only in reading.

Parameter of sensor offset that correspond to the value representing the zero of the sensor. They are 8 and correspond to the sensors from 0 to 7, available only in reading.

The current work values, saved by the central processing unit, as the weight of reference of material to extrude. For the moment, that value is unique.

EEPROM zone Checksum, only in reading, at the HC12 0xFFC address (8FE in ModBus).

All datas are accessible in raw value as saved in the EEPROM.

To get the real values, it is necessary to apply coefficients of scale (divide the value read in EEPROM by the scale factor).

### Chart of the parameter ModBus address

Parameter	Description	Taken into account in manu/auto	Usable Modbus Functions (*)	Scale factor	HC12 address	Modbus address
01	Interface type	No	3/4 and 16	1	0x400	0x200
02	Pressure threshold	No	3/4 and 16	10	0x404	0x202
03	Piston low position	No	3/4 and 16	10	0x408	0x204
04	Filling maximum duration	No	3/4 and 16	10	0x40C	0x206
05	Filling shutdown high position	No	3/4 and 16	10	0x410	0x208
06	Pressure instruction during the filling	No	3/4 and 16	10	0x414	0x20A
07	Servo-control gain during the filling	No	3/4 and 16	1	0x418	0x20C
08	Servo-control gain during the regulation	No	3/4 and 16	1	0x41C	0x20E
09	Piston low limit threshold during the regulation	No	3/4 and 16	10	0x420	0x210
10	Difference instruction / measure for ready signal	No	3/4 and 16	1	0x424	0x212
11	Flow instruction filter	No	3/4 and 16	1	0x428	0x214
12	Bead modification tempo	No	3/4 and 16	20	0x42C	0x216
13	Servo-control in flow modification	No	3/4 and 16	10	0x430	0x218
14	Maximum flow coefficient	No	3/4 and 16	10	0x434	0x21A
15	Flow standard instruction	No	3/4 and 16	10	0x438	0x21C
16	Language	No	3/4 and 16	1	0x43C	0x21E
17	Fluid density selection	No	3/4 and 16	10	0x440	0x220
18	Piston section	No	3/4 and 16	1	0x444	0x222
19	Weight alarm tolerance	No	3/4 and 16	10	0x448	0x224
20	Simulation value of the external instruction	No	3/4 and 16	10	0x44C	0x226
21	Configuration parameter of the RS232 connection	No	3/4 and 16	1	0x450	0x228
22	Configuration parameter of the RS485 connection	No	3/4 and 16	1	0x454	0x22A
23	Response address of the ModBus slave	No	3/4 and 16	1	0x458	0x22C
24	Pressure sensor scale (in tenth of bar)	No	3/4 and 16	1	0x45C	0x22E
25	Position sensor scale (in tenth of mm)	No	3/4 and 16	1	0x460	0x230
26	Extrusion valve version	No	3/4 and 16	1	0x464	0x232

Nota : The informations not taken into account in manu/auto need a reset to be vetted.

**All access must be made on the even-numbers of words (4 bytes access → 2 words)**

**All double words are in reading/writing mode (RWL)**

### Chart of the sensor offsets

Sensor Offset	Description	Usable ModBus functions	HC12 Address	ModBus Address
01	Pressure sensor channel A	3 or 4	0x4C0	0x260
02	Position sensor channel A	3 or 4	0x4C4	0x262
03	Pressure sensor Channel B	3 or 4	0x4C8	0x264
04	Position sensor channel B	3 or 4	0x4CC	0x266
05	Robot instruction Analog channel	3 or 4	0x4D0	0x268
06	Reserve 6	3 or 4	0x4D4	0x26A
07	Reserve 7	3 or 4	0x4D8	0x26C
08	Reserve 8	3 or 4	0x4DC	0x26E

Available only in reading under the form of long words

### Chart of the electronic offsets

Data in converter point of acquisition

Electronic Offset	Description	Usable ModBus Functions	HC12 Address	ModBus Address
01	Pressure sensor channel A	3 or 4	0x540	0x2A0
02	Position sensor channel A	3 or 4	0x544	0x2A2
03	Pressure sensor channel B	3 or 4	0x548	0x2A4
04	Position sensor channel B	3 or 4	0x54C	0x2A6
05	Robot instruction analog channel	3 or 4	0x550	0x2A8
06	Reserve 6	3 or 4	0x554	0x2AA
07	Reserve 7	3 or 4	0x558	0x2AC
08	Reserve 8	3 or 4	0x55C	0x2AE

Available only in reading under the form of long words

### Chart of the work current values memorized

Data offsets	Description	Usable ModBus Functions	HC12 Address	ModBus Address
01	Instruction of extruded reference weight	3 /4 & 16(0X10)	0x5A0	0x2D0

Available in reading/writing under the form of long words, **taken into account when switching on and during the auto/manu passage**



## RAM Memory

The RAM zone is available in reading in the space reserved for ModBus. The writings, depending upon the destination can be prohibited or authorized by limiting the kind of ModBus functions to use for the access.

**The passing change of a parameter to EEPROM RAM image is taken into account during the passage from auto to manu.**

**Two actions cancel their effects :**

**A reset**

**An inlet in the menu of configuration of the parameters.**

**In the two cases, the RAM image of the EEPROM is reloaded by the EEPROM content.**

**The writing of the EPROM RAM image does not affect the EEPROM.**

The parameters noted "not taken into account during the manu/auto passage" can only be modified by ModBus when carrying out the following process :

Modification of the value in EEPROM

Reset

The kind of access indicates the following informations :

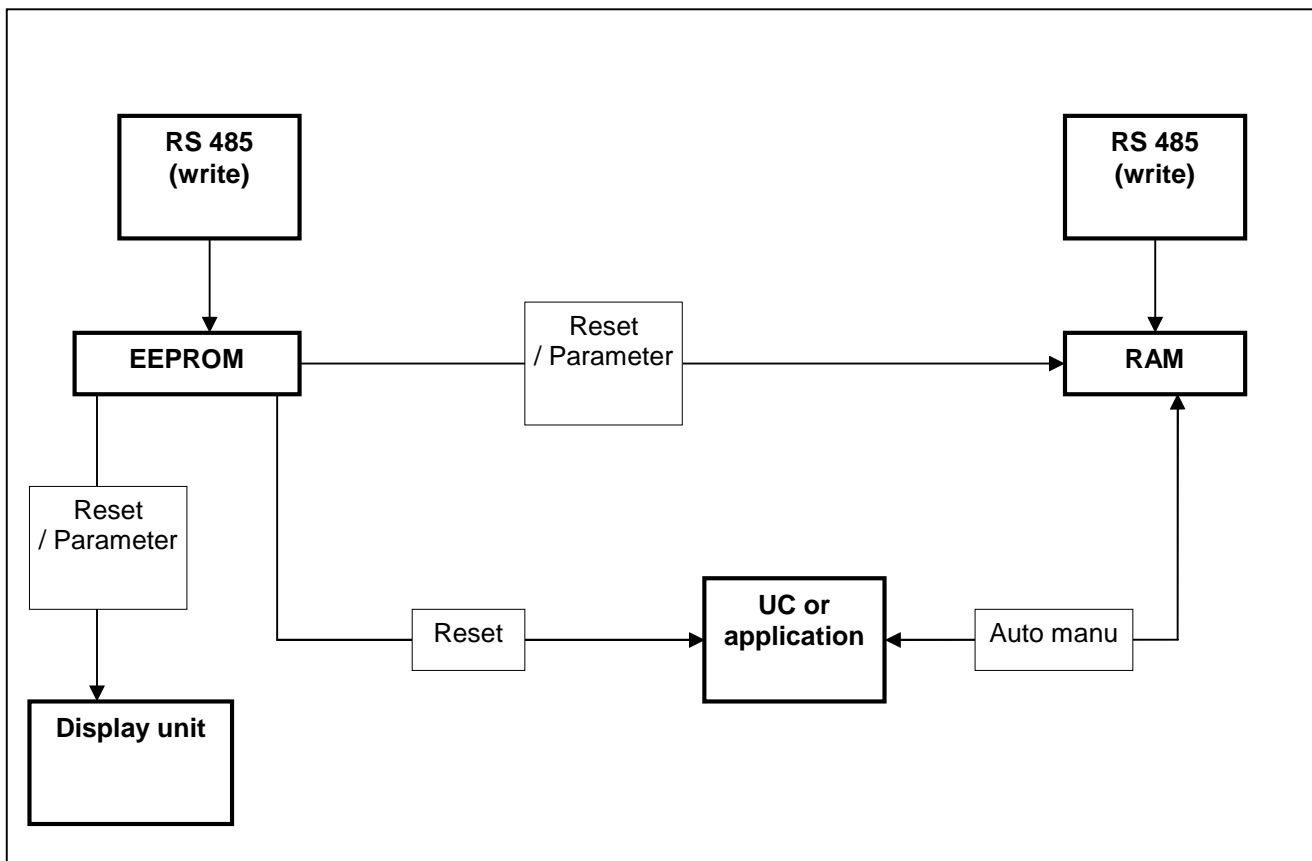
RO Read Only, reading only

RWW Read/ Write Word, reading writing under the form of double byte (16 bits)

RWL Read/ Write Long, reading writing under the form of quadruple byte (32 bits)

In the RWL mode and only in that mode, the processor checks that all 4 bytes length parameters are transmitted under the form of 2 words of 16 bits in the writing sequences.

The reading is not affected by the length of the data.



### Chart of the machine parameters ModBus address in RAM

Parameter	Description	Byte height	Taken into account in manu/auto	Usable Modbus Functions (*)	HC12 Address	ModBus Address
01	Interface type	2	No	3 / 4,6 and 16	0x1090	0x848
02	Pressure threshold	2	Yes	3 / 4,6 and 16	0x1092	0x849
03	Piston low position	2	Yes	3 / 4,6 and 16	0x1094	0x84A
04	Filling maximum duration	2	Yes	3 / 4,6 and 16	0x1096	0x84B
05	Filling shutdown high position	2	Yes	3 / 4,6 and 16	0x1098	0x84C
06	Pressure instruction during the filling	2	Yes	3 / 4,6 and 16	0x109A	0x84D
07	Servo-control gain during the filling	2	Yes	3 / 4,6 and 16	0x109C	0x84E
08	Servo-control gain during the regulation	2	Yes	3 / 4,6 and 16	0x109E	0x84F
09	Piston low limit threshold during the regulation	2	Yes	3 / 4,6 and 16	0x10A0	0x850
10	Difference instruction / measure for ready signal	2	Yes	3 / 4,6 and 16	0x10A2	0x851
11	Flow instruction filter	2	Yes	3 / 4,6 and 16	0x10A4	0x852
12	Bead modification tempo	2	Yes	3 / 4,6 and 16	0x10A6	0x853
13	Servo-control gain in flow modification	2	Yes	3 / 4,6 and 16	0x10A8	0x854
14	Maximum flow coefficient	2	Yes	3 / 4,6 and 16	0x10AA	0x855
15	Flow standard instruction in manual application	2	Yes	3 / 4,6 and 16	0x10AC	0x856
16	Language	2	Yes	3 / 4,6 and 16	0x10AE	0x857
17	Fluid density selection	2	No	3 / 4,6 and 16	0x10B0	0x858
18	Piston section	2	No	3 / 4,6 and 16	0x10B2	0x859
19	Weight alarm tolerance	2	Yes	3 / 4,6 and 16	0x10B4	0x85A
20	Simulation internal value of the external instruction	2	Yes !	3 / 4,6 and 16	0x10B6	0x85B
21	Configuration parameter of the RS232 connection	2	No	3 / 4,6 and 16	0x10B8	0x85C
22	Configuration parameter of the RS485 connection	2	No	3 / 4,6 and 16	0x10BA	0x85D
23	Response address of the ModBus slave	2	No	3 / 4,6 and 16	0x10BC	0x85E
24	Pressure sensor scale (in tenth of bar)	2	No	3 / 4,6 and 16	0x10BE	0x85F
25	Position sensor scale (in tenth of mm)	2	No	3 / 4,6 and 16	0x10C0	0x860
26	Extrusion valve version	2	No	3 / 4,6 and 16	0x10C2	0x861

Nota : The information not taken into account in manu/auto needs a reset to be vetted.

**Caution : during the reset, the values taken into account are from the EEPROM.**

**Chart of the internal parameters ModBus address in RAM**

Description	Usable Modbus Functions	Access type	Bytes height	HC12 Address	Modbus Address	Commentary
Mode Forcing	3 / 4 and 6	RWW	2	0x1000	0x800	Mode forcing (See note 1)
Reset to zero list of fault	3 / 4 and 6	RWW	2	0x1002	0x801	Erasing of the list of faults (See note 2)
Weight of extruded material Channel A on the last extrusion	3 / 4 and 6	RWW	2	0x1004	0x802	Weight cumulated in gram on 16 bits of the extruded material channel A
Weight of extruded material Channel A	3 / 4 and 16	RWL	4	0x1008	0x804	Weight cumulated in gram on 32 bits of the extruded material Channel A
Arbitrary meter of time	3 / 4 and 16 (x10)	RWL	4	0x1010	0x808	Meter that enables the dating of the Faults (can be used to obtain « the current hour ») in hundredth of second - 4 significative bytes
Stage of dialogue	3 / 4	RO	2	0x101A	0x80D	Graphic page in the process of being displayed (Note 3)
TOR Inlets	3 / 4	RO	2	0x101C	0x80E	Reading of the 16 inlets of the card
Pressure sensor A	3 / 4	RO	2	0x1020	0x810	Reading of the compressed A pressure inlet of the sensor and electronic offsets (sensor point 12 bits)
Position sensor A	3 / 4	RO	2	0x1022	0x811	Reading of the compressed A position inlet of the sensor and electronic offsets (sensor point 12 bits)
Instruction analog inlet	3 / 4	RO	2	0x1028	0x814	Reading of the compressed external instruction inlet of the sensor and electronic offsets (sensor point 12 bits)
Analog inlet 6	3 / 4	RO	2	0x102A	0x815	Reading of the compressed analog inlet 6 of the sensor and electronic offsets (sensor point 12 bits)
Analog inlet 7	3 / 4	RO	2	0x102C	0x816	Reading of the compressed analog inlet 7 of the sensor and electronic offsets (sensor point 12 bits)

**Chart of the internal parameters ModBus address in RAM**

Description	Usable Modbus Functions	Access Type	Bytes height	HC12 Address	Modbus Address	Commentary
Analog inlet 8	3 / 4	RO	2	0x102E	0x817	Reading of the compressed analog inlet 8 of the sensor and electronic offsets (sensor point 12 bits)
TOR outlets	3 / 4	RO	2	0x101E	0x80F	Reading of the 16 outlets of the card
Fault 0 (the most recent with date) 4 bytes	3 / 4	RO	4	0x1030	0x818	The structure of Fault is a word of 32 bits, the 24 bits of strong weight give the instant, (copy of time meter at the moment of the apparition in second), and the 8 bits of weak weight give the number of fault (0xFF indicates no fault)
Fault 1	3 / 4	RO	4	0x1034	0x81A	Idem above
Fault 2	3 / 4	RO	4	0x1038	0x81C	Idem above
Fault 3	3 / 4	RO	4	0x103C	0x81E	Idem above
Fault 4	3 / 4	RO	4	0x1040	0x820	Idem above
Fault 5	3 / 4	RO	4	0x1044	0x822	Idem above
Fault 6	3 / 4	RO	4	0x1048	0x824	Idem above
Fault 7	3 / 4	RO	4	0x104C	0x826	Idem above
Fault 8	3 / 4	RO	4	0x1050	0x828	Idem above
Fault 9	3 / 4	RO	4	0x1054	0x82A	Idem above
Fault 10	3 / 4	RO	4	0x1058	0x82C	Idem above
Fault 11	3 / 4	RO	4	0x105C	0x82E	Idem above
Fault 12	3 / 4	RO	4	0x1060	0x830	Idem above
Fault 13	3 / 4	RO	4	0x1064	0x832	Idem above
Fault 14	3 / 4	RO	4	0x1068	0x834	Idem above
Fault 15 (the oldest one)	3 / 4	RO	4	0x106C	0x836	Idem above
Weight of reference A	3 / 4,6 and 16	RWL	4	0x1070	0x838	For your information only
Coefficient of weight A	3 / 4,6 and 16	RWL	4	0x1074	0x83A	For your information only
Mini weight check A	3 / 4,6 and 16	RWL	4	0x1078	0x83C	For your information only
Maxi weight check A	3 / 4,6 and 16	RWL	4	0x107C	0x83E	For your information only

**Note 1 :**

The BYPASS MODE is by either entering the code:  
0xAAAA the code to go in automatic mode  
0x5555 the code to go in manual mode  
The code will be reset to zero when the bypass is completed.  
Any other value entered will give a Modbus error.

*Caution :* When entering the BY PASS code it can cause a latent mode if precautions are not taken. The bypass is only accepted when the application is on the graphic page 'manual mode' or 'auto mode'. It is necessary to check the screen stage (see note 3) before entering a by pass code. Otherwise, the command will be taken into account when returning to the 'auto' or 'manu' pages

**Note 2 :**

The erasing of the list of faults is made by entering the command:  
0x00FF (the code to erase the fault list)  
The action is asynchronous. It can be made any time.  
Any other value transmitted gives a ModBus error.

**Note 3 :**

A dedicated word value, available as read only, enables you to know the active graphic page or the active function.

Word value	Graphic page or function
0	Not defined
1	<b>Manual mode page</b>
2	Offset management page (from manu page)
3	Inlet/outlet graphic page (from manu page)
4	Parameter input page (from manu page)
5	Faults graphic page (from manu page)
6	Priming in progress
7	Manual extrusion in progress
8	<b>Automatic mode page</b>
9	Faults graphic page (from auto page)
10	Inlet/outlet graphic page (from auto page)

The by pass mode is only taken into account during the stages 1 and 8.

**Note 4 :**

*The lists of faults and extruded weight are common to the ModBus protocol and to the application : the reset to zero function of this information, by means of the serial connection, and is to automatically refresh the data values displayed on the screen.*

**Note 5 :**

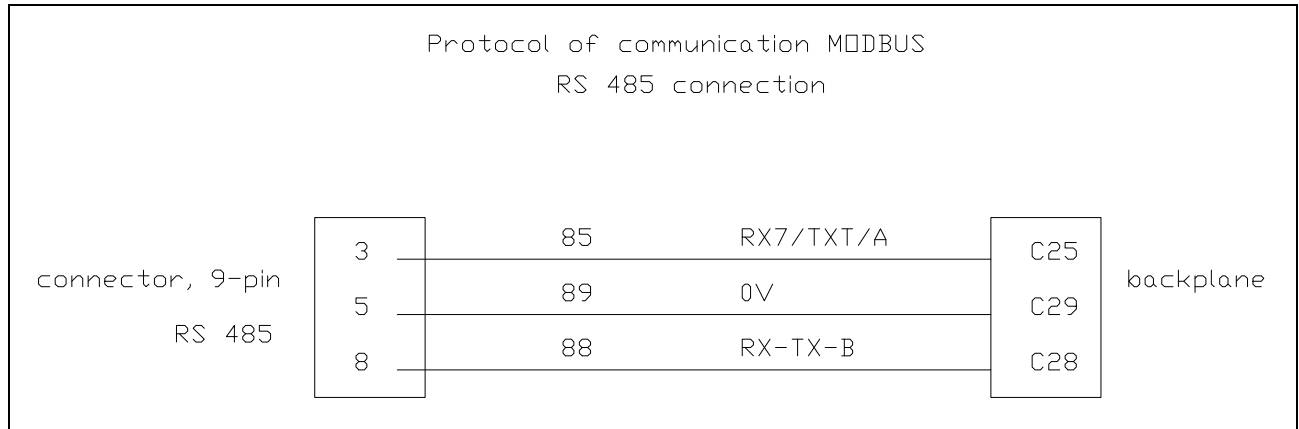
When a request is not correct (incorrect address, incorrect data, ...), the control unit sends a fault code, standard code of the ModBus protocol.

The equipment must unscramble that fault code.

A lot of equipments will just send the 'CRC Incorrect' status without any other information.

## ■ RS 485 COMMUNICATION CONNECTOR WIRING

The connector is at the rear part of the control unit.



## 16- DIGIVEX VARIATOR

Instruction manual of the manual enclosed.



**The variator must be programmed to ensure a correct operating of the B6 control unit.**

**SAMES KREMLIN markets the variator fitted with its program.**  
(refer to Spare parts' list of the B6 control unit - Doc. 573.310.050)

## 17- MAINTENANCE

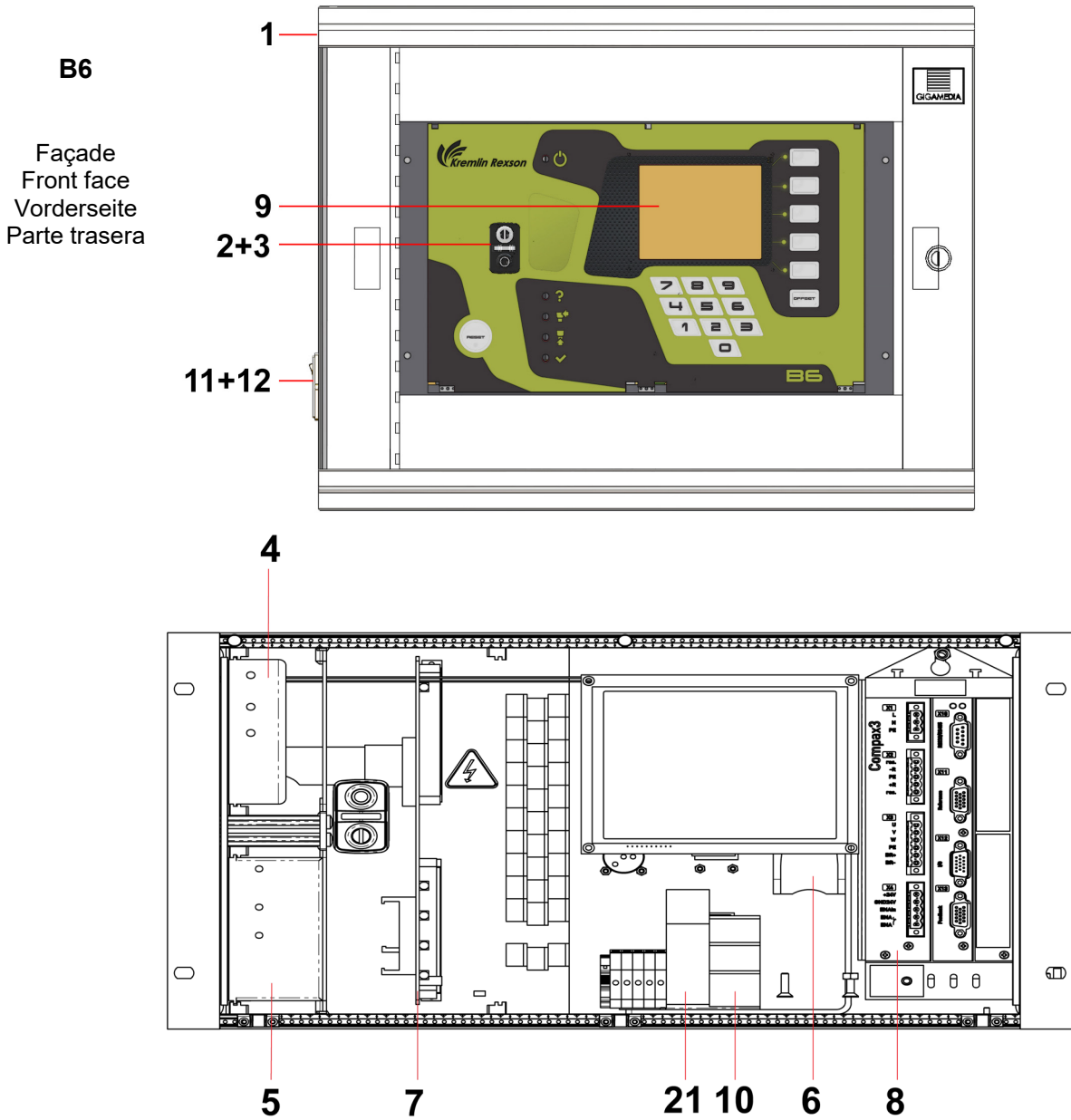


**Switch off the B6 control unit and the dosing machine before disassembling an element of the B6 control unit.**

**Only trained operators can use the equipment. All work on the electrical equipment in the B6 control unit must be carried out by qualified electricians. It is imperative to wear appropriate personal protective equipment.**

<b>Doc. 573.310.050</b> Date : 27/11/20 Cancels : 20/11/20	<b>Modif. / Änderung :</b> Mise à jour / Update / Aktualisierung / Actualización	<b>Pièces de rechange</b> <b>Spare parts list</b> <b>Ersatzteilliste</b> <b>Piezas de repuesto</b>
------------------------------------------------------------------	----------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------

<b>BAIE REGULEX® B6</b>	<b>REGULEX® BAY B6</b>	<b>#</b>
<b>REGULEX® STEUERINHEIT B6</b>	<b>ARMARIO REGULEX® B6</b>	<b>155.423.100</b>



Intérieur de la baie / Inside of the bay / Innenansicht / Interior del armario

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	NC / NS	Coffret 600x350x420	Box 600x350x420	Gehäuse 600x350x420	Armario 600x350x420	1
2	901 510 516	Bloc alimentation (220V)	Power unit supply (220V)	Stromanschluss (220V)	Bloque de alimentación (220V)	2
*3	901 205 313	Fusible 2A (5x20 FST)	Fuse 2A (5x20 FST)	Sicherung 2A (5x20 FST)	Fusible 2A (5x20 FST)	2
*4	901 510 277	Alimentation 24V - 35W	Supply 24V - 35W	Versorgung 24V - 35W	Alimentación 24V - 35W	1
*5	901 510 279	Alimentation 5/15V - 55W	Supply 5/15V - 55W	Versorgung 5/15V - 55W	Alimentación 5/15 - 55W	1
6	901 510 903	Ventilateur 220V	Fan 220V	Ventilator (220V)	Ventilador 220V	1
*7	155 423 010	Carte µP	Card µP	µP Karte	Carta µP	1
*8	155 423 039**	Variateur (pour moteur NX 210)	Variable speed drive (for motor, model NX 210)	Stufenloses Getriebe (für Motor, Model NX 210)	Variador (para motor NX 210)	1
*9	155 423 019	Afficheur	Display unit	Display mit Tastatur	Pantalla	1
*10	901 205 607	Relais (24V)	Relay (24V)	Relais (24V)	Relé (24V)	1
11	901 250 207	Tête bouton poussoir	Push-button head	Druckschalterkopf	Cabeza para botón pulsador	1
12	901 250 208	Corps pour bouton poussoir	Push-button body	Druckschalterkörper	Cuerpo para botón pulsador	1
13	901 510 802	Embasse HARTING 15 points	15-pin base, HARTING	Gehäuse: HARTING 15 Stifte	Toma HARTING 15 contactos	1
14	901 510 801	Prise femelle HARTING 15 points	15-pin socket, HARTING	Buchseneinsatz: HARTING 15 Stifte	Toma hembra HARTING 15 conectos	1
15	901 091 006	Embasse femelle JAEGER 6 broches	6-pin socket, JAEGER	Buchse: JAEGER 6 Stifte	Toma hembra JAEGER 6 contactos	1
16	901 091 043	Embasse femelle JAEGER 4 broches	4-pin socket, JAEGER	Buchse: JAEGER 4 Stifte	Toma hembra JAEGER 4 conectos	1
17	901 250 212	Connecteur femelle (pour liaison RS 485)	Female connector (for connection RS 485)	Steckplatz (für RS 485 Anschluss)	Conector bornero toma hembra (para conexión RS 485)	1
18	901 091 013	Embasse femelle JAEGER 12 broches	12-pin socket, JAEGER	Buchse: JAEGER 12 Stifte	Toma hembra JAEGER 12 conectos	1
19	901 091 012	Fiche mâle JAEGER 12 broches	12-pin plug, JAEGER	Stecker: JAEGER 12 Stifte	Toma macho JAEGER 12 conectos	1
20	901 510 502	Cordon d'alimentation	Feeder	Versorgungskabel	Cordón de alimentación	2
21	901 205 608	Relais temporisé	Relay	Relais	Relé	1

\* Pièces de maintenance préconisées.

\* Preceding the index number denotes a suggested spare part.

\* Bezeichnete Teile sind empfohlene Ersatzteile.

\* Piezas de mantenimiento preventivas.

N C : Non commercialisé.

N S : Denotes parts are not serviceable.

N S : Bezeichnete Teile gibt es nicht einzeln, sondern nur komplett.

N S : no suministrado.

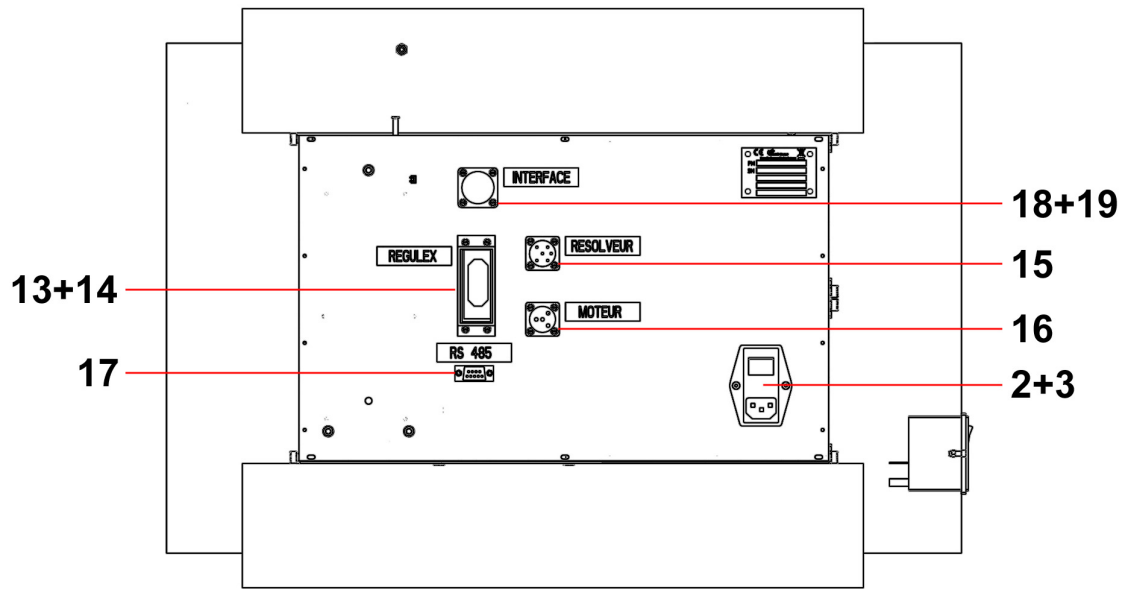
\*\* *Mod. Depuis le numéro de série / From serial number*

*/ Aus der Seriennummer / desde el número de serie 20Y1139*



B6

Vue arrière  
Rear face  
Rückansicht  
Parte trasera



**ACCESSOIRES - ACCESORIES - ZUBEHÖR - ACCESORIOS**

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
-	055 418 020	Câble REGULEX (long. 10m + prises HARTING 15 points)	REGULEX cable (length 10m / 32 ft + 15-pin connector, HARTING)	REGULEX-Kabel (Länge 10 m mit 15-Stift HARTING Stecker)	Cable REGULEX (longitud 10m + tomas HARTING 15 contactos)	1
-	055 418 021	Câble moteur (long. 10m + prises JAEGER 4 broches)	Motor cable (length 10m / 32 ft + 4-pin connector, JAEGER)	Motor-Kabel (Länge 10 m mit 4-Stift JAEGER Stecker)	Cable motor (longitud 10m + tomas JAEGER 4 contactos)	1
-	055 418 022	Câble resolver (long. 10m + prises JAEGER 6 broches)	Resolver cable (length 10m / 32 ft + 6-pin connector, JAEGER)	Resolver-Kabel (Länge 10 m mit 6-Stift JAEGER Stecker)	Cable resolver (longitud 10 m + tomas JAEGER 6 contactos)	1
-	155 423 038	Kit câble	Cable kit	Kabelsatz	Kit de cable	1

# DOSSIER TECHNIQUE ELECTRICITE



DENOMINATION DES DOCUMENTS CONSTITUANT CE DOSSIER	
	SCHEMA DE PRINCIPE DES CIRCUITS
	PLAN DE DISPOSITION DE L'APPAREILLAGE
	SYNOPTIQUE DE CABLAGE
	PLAN DES BORNERS
	PLAN DES CABLES
	NOMENCLATURE DU MATERIEL

Denomination de la machine ou de l'installation industrielle : <b>SCHEMA ELECTRIQUE BAIE REGULEX B6</b> MNEMO:	NOM :	
	DATE : 18/07/2017	
	TOTAL FOLIOS <b>41</b>	MICROFILM
	SECTION	Projet N°

Destination :			
ATELIER:		Bât:	
	MATRICULE	CLASSEMENT	LOGICIEL See V V4R2

<b>SAMES-KREMLIN</b> 13 Chemin de Malacher - 38240 Meylan Cedex France	04 76 41 60 60	- MODIFICATIONS - INDICE A.00 B.00 C.00 VISA KREMLIN KREMLIN JSY DATE 15/12/2008 04/08/2016 18/07/2017	PAGE DE GARDE	PLAN N° : 055423098	FOLIO 01 02 ▶
---------------------------------------------------------------------------	----------------	-----------------------------------------------------------------------------------------------------------------	---------------	---------------------	---------------------

		<b>- MODIFICATIONS -</b>														
N° FOLIO	DESIGNATION	Ind.	VISA	DATE	Ind.	VISA	DATE	Ind.	VISA	DATE	Ind.	VISA	DATE	Ind.	VISA	DATE
01	PAGE DE GARDE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
05	02 SOMMAIRE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	04 LEGENDE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	10 SYNOPTIQUE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	11 SYNOPTIQUE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	30 DISTRIBUTION GENERALE INSTALLATION	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	31 DISTRIBUTION 240V DISTRIBUTION GENERALE RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	32 DISTRIBUTION 240V ALIMENTATION VARIATEUR RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	33 DISTRIBUTION 240V VENTILATION RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	36 DISTRIBUTION 15V ALIMENTATION +15V/-15V RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	37 DISTRIBUTION 24V ALIMENTATION 24V RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
04	70 VARIATEUR 1/4 RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	71 VARIATEUR 2/4 RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	72 VARIATEUR 3/4 RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	73 VARIATEUR 4/4 RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	80 RESEAU	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	81 RESEAU RS485 RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	100 INTERFACE BAIE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	101 INTERFACE BAIE - REGULEX RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	102 INTERFACE BAIE - ROBOT RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1000 COMMANDE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1001 MISE EN PUISSANCE RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1200 AUTOMATE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
03	1201 ENTREE TOR RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1205 SORTIE TOR RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1210 ENTREES ET SORTIES ANALOGIQUE RB6	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1400 IMPLANTATIONS	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
	1402 IMPLANTATION BAIE	A.00	KREMLIN	15/12/2008	B.00	KREMLIN	04/08/2016	C.00	JSY	18/07/2017						
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01																

COFFRET LOCALISATION .

LEGEND (Electro Magnetic Compatibility):

SHIELDING CONNEXION BY STRAP 360°  
*REPRISE DE BLINDAGE AVEC CONNECTEUR A 360°*



SHIELDING BY METALLIC CABLE GLAND|  
*REPRISE DE BLINDAGE PAR PRESSE ETOUPE METALLIQUE*



SHIELDING BY METALLIC CONNECTOR|  
*REPRISE DE BLINDAGE PAR CONNECTEUR METALLIQUE*



GROUND LEAD  
*TRESSE DE MASSE*



WIRING RULES:

MINIMUM SECTION FOR I/O CARDS 0.5mm2  
*SECTIONS MINIMALES POUR CARTES E/S 0.5mm2*

MINIMUM SECTION FOR CONTROL 1mm2  
*SECTIONS MINIMALES POUR COMMANDE 1mm2*

MINIMUM SECTION FOR POWER 1.5mm2  
*SECTIONS MINIMALES POUR PUISSANCE 1.5mm2*

MINIMUM SECTION FOR ANALOG 0.34mm2  
*SECTIONS MINIMALES POUR ANALOGIQUE 0.34mm2*

LOCALISATIONS:

ARMOIRE ROBOT  
+AR

FOND DE PANIER  
+FDP

PISTOLET DOSEUR REGULEX  
+PDR

REGULEX B6  
+RB6

LOCALISATION :

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01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20

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04

# SYNOPTIQUE

03

02

01

COFFRET

LOCALISATION :

**SAMES-KREMLIN**  
13 Chemin de Malacher - 38240 Meylan Cedex France 04 76 41 60 60

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VISA	KREMLIN	KREMLIN	JSY
DATE	15/12/2008	04/08/2016	18/07/2017

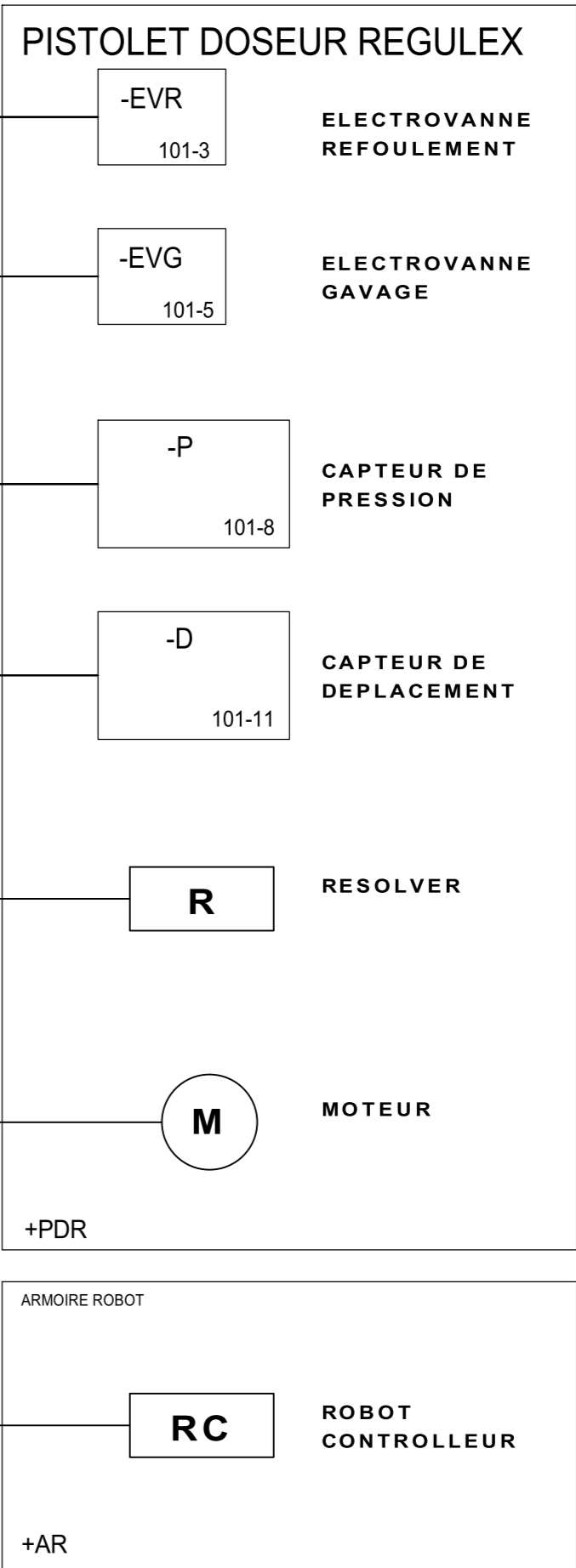
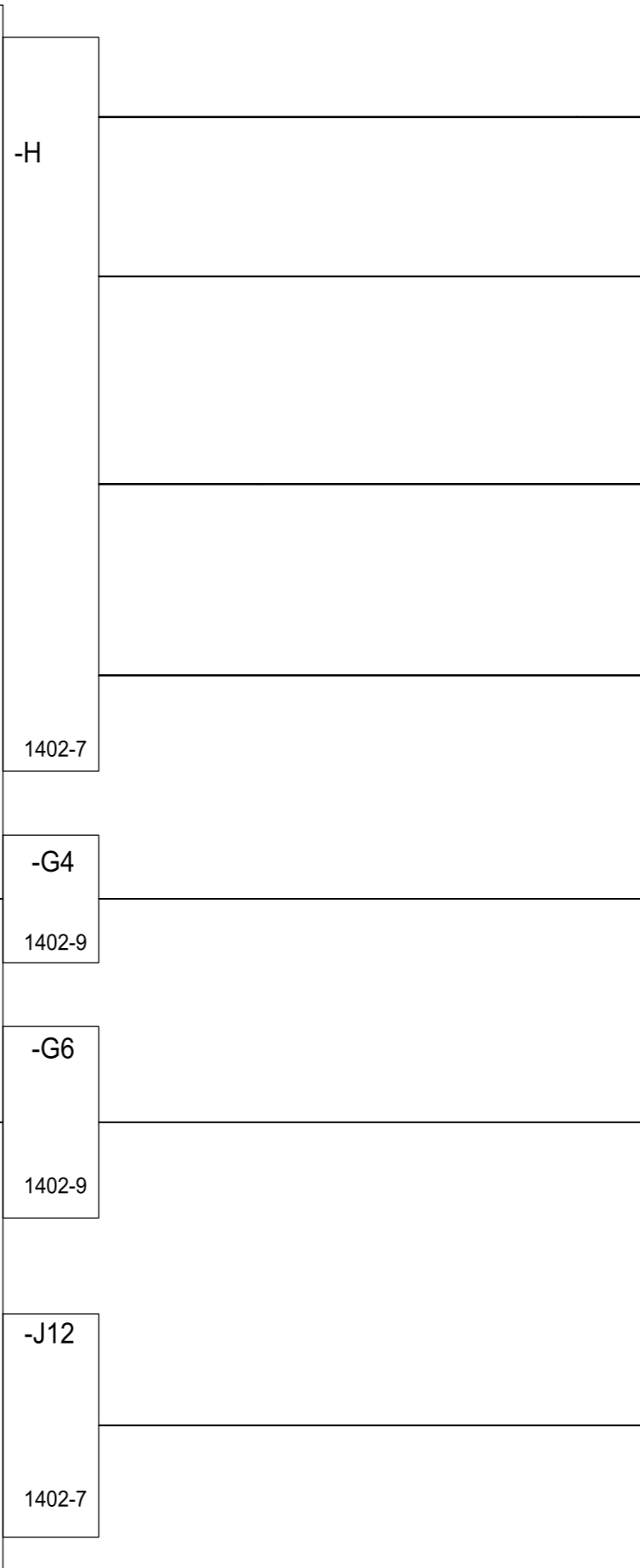
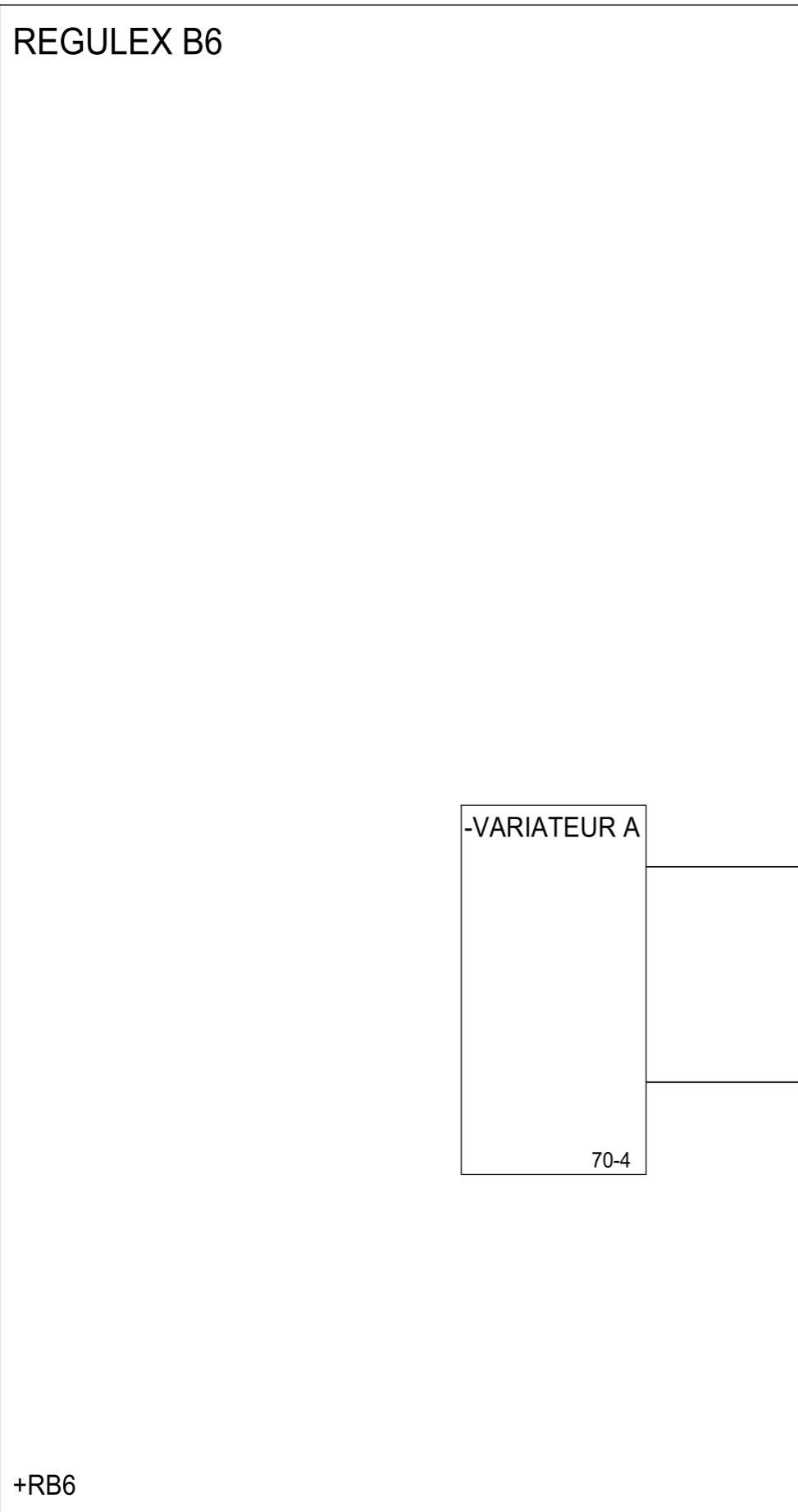
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INDICE A.00 B.00 C.00  
 VISA KREMLIN KREMLIN JSY  
 DATE 15/12/2008 04/08/2016 18/07/2017

- MODIFICATIONS -

SYNOPTIQUE

Affaire N°

055423098

FOLIO  
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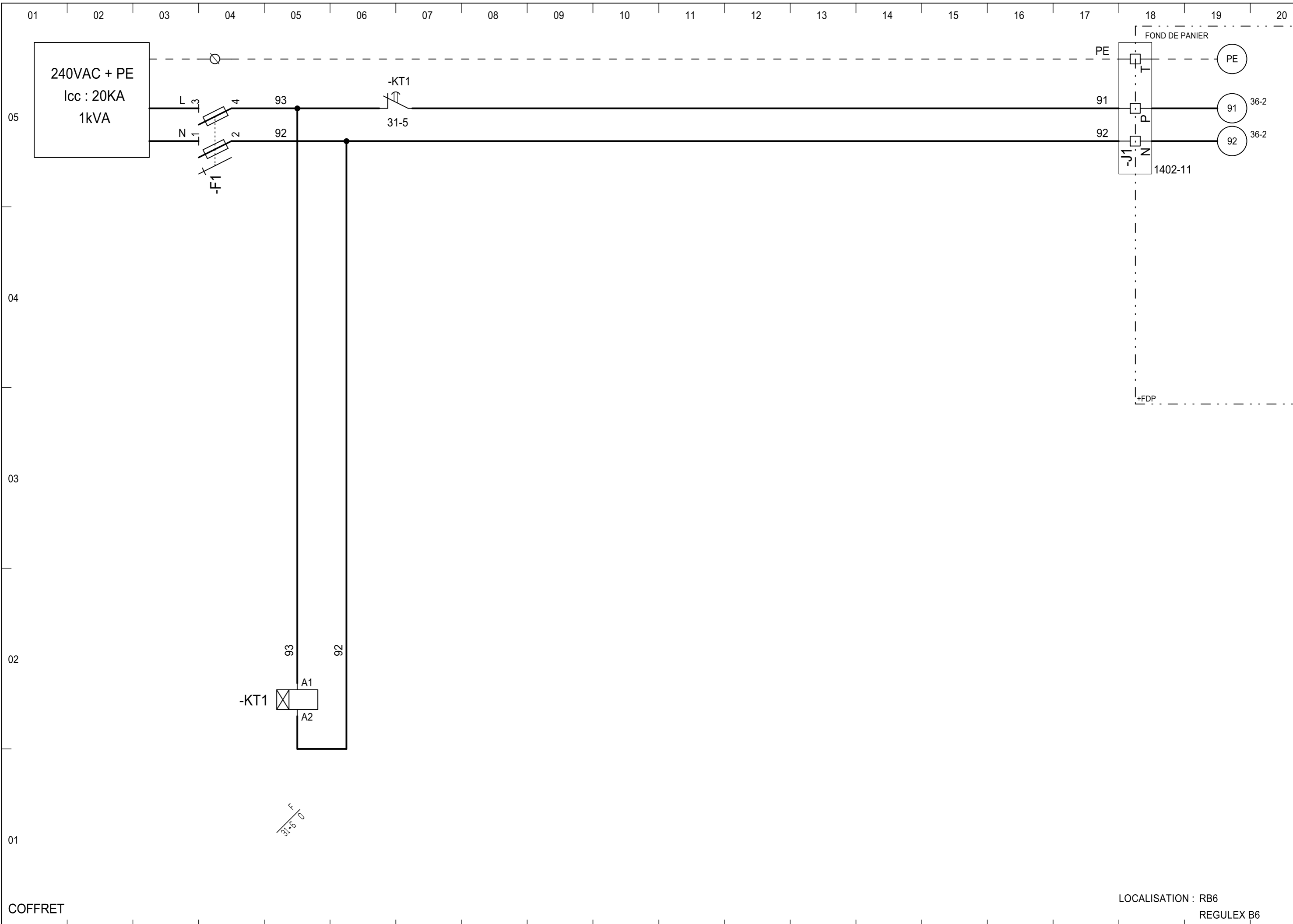
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INDICE A.00 B.00 C.00  
 VISA KREMLIN KREMLIN JSY  
 DATE 15/12/2008 04/08/2016 18/07/2017

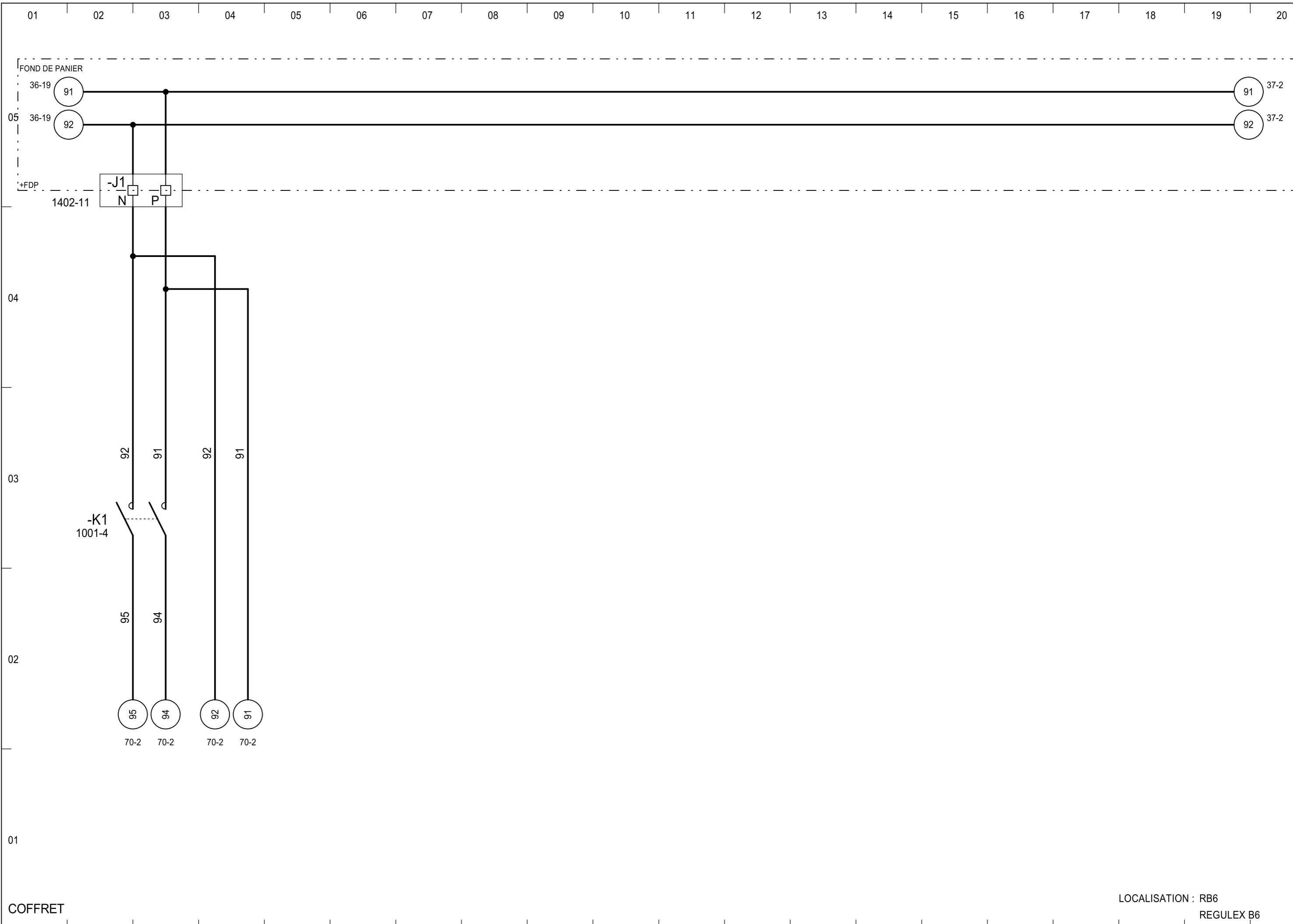
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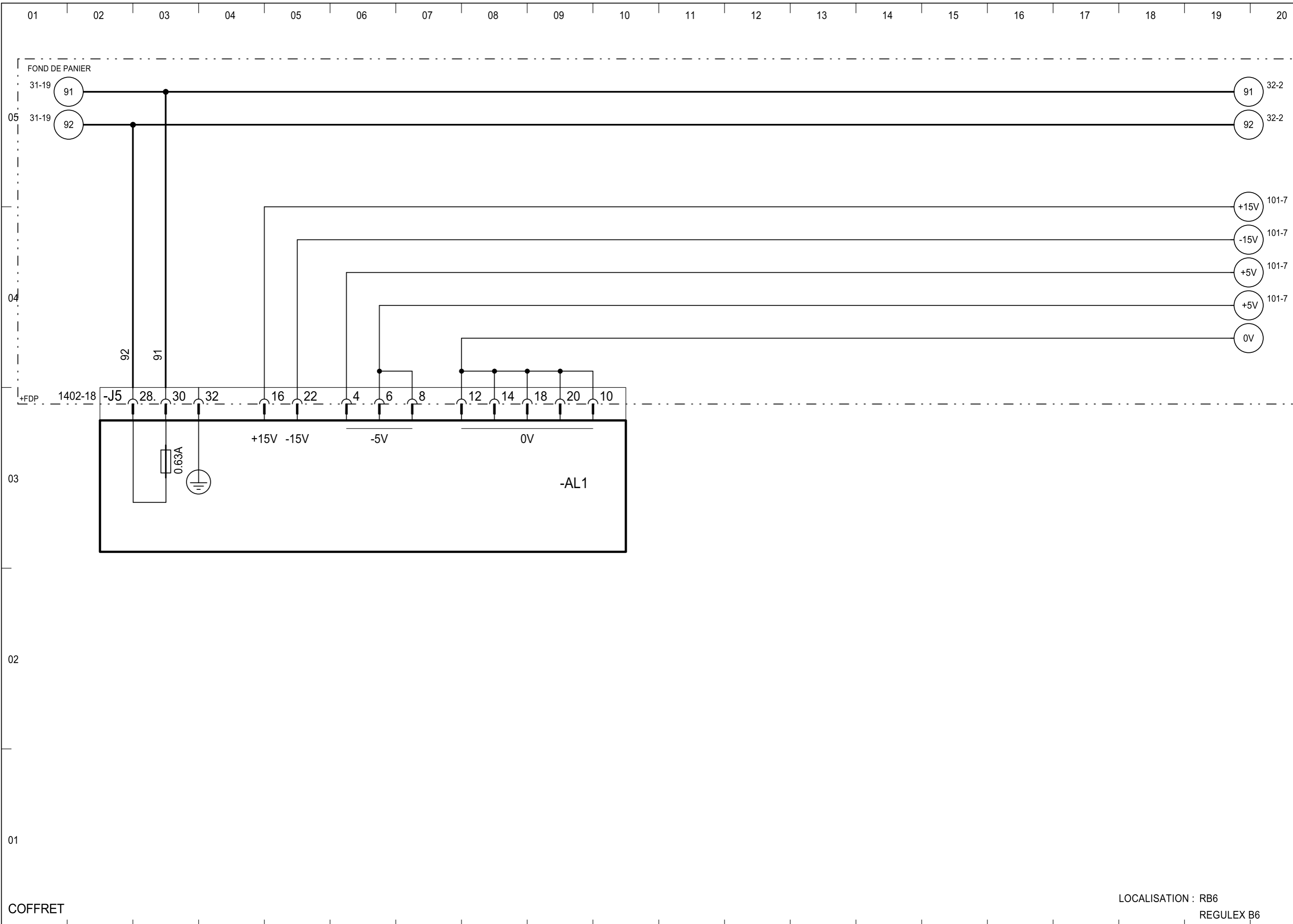
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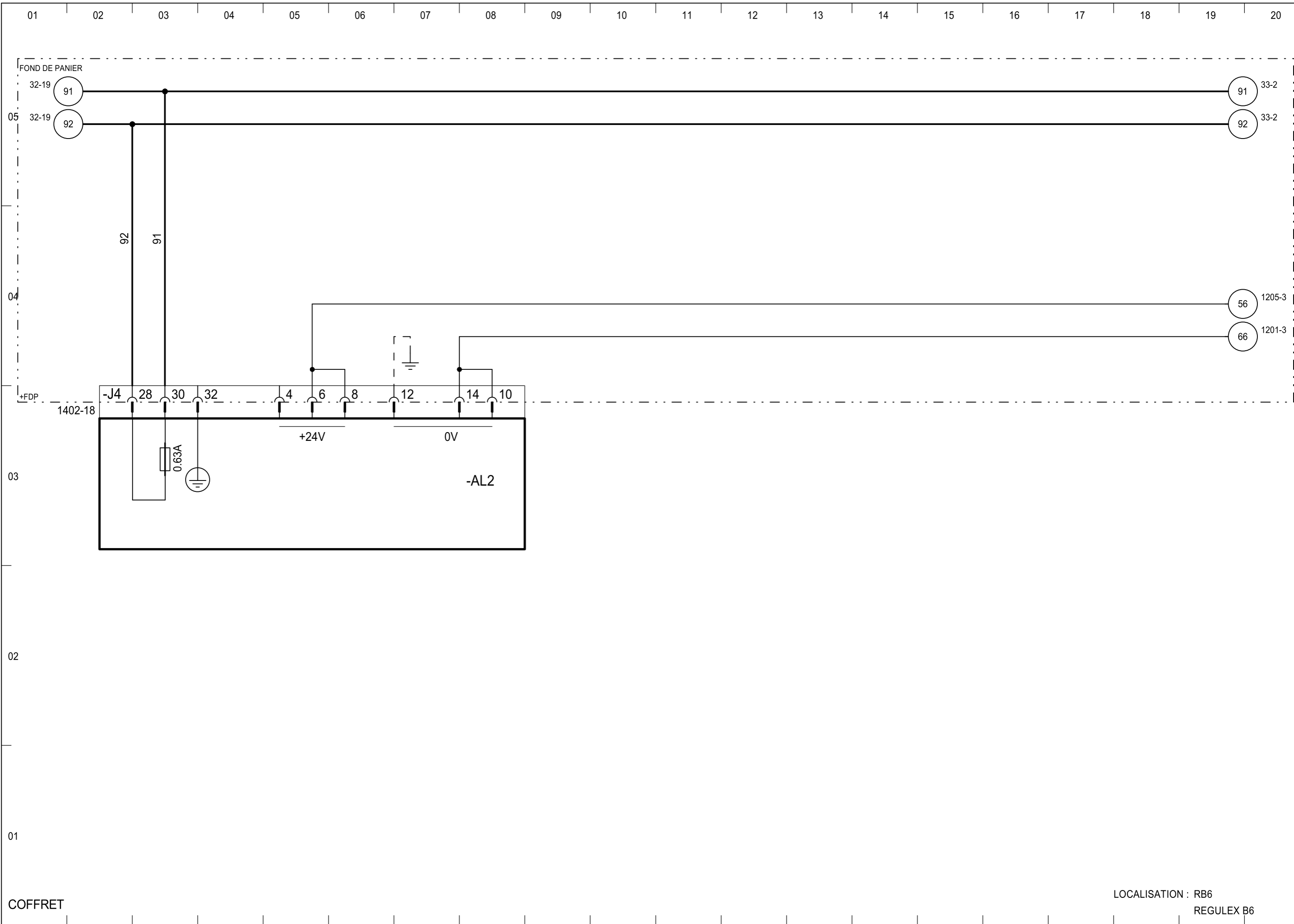
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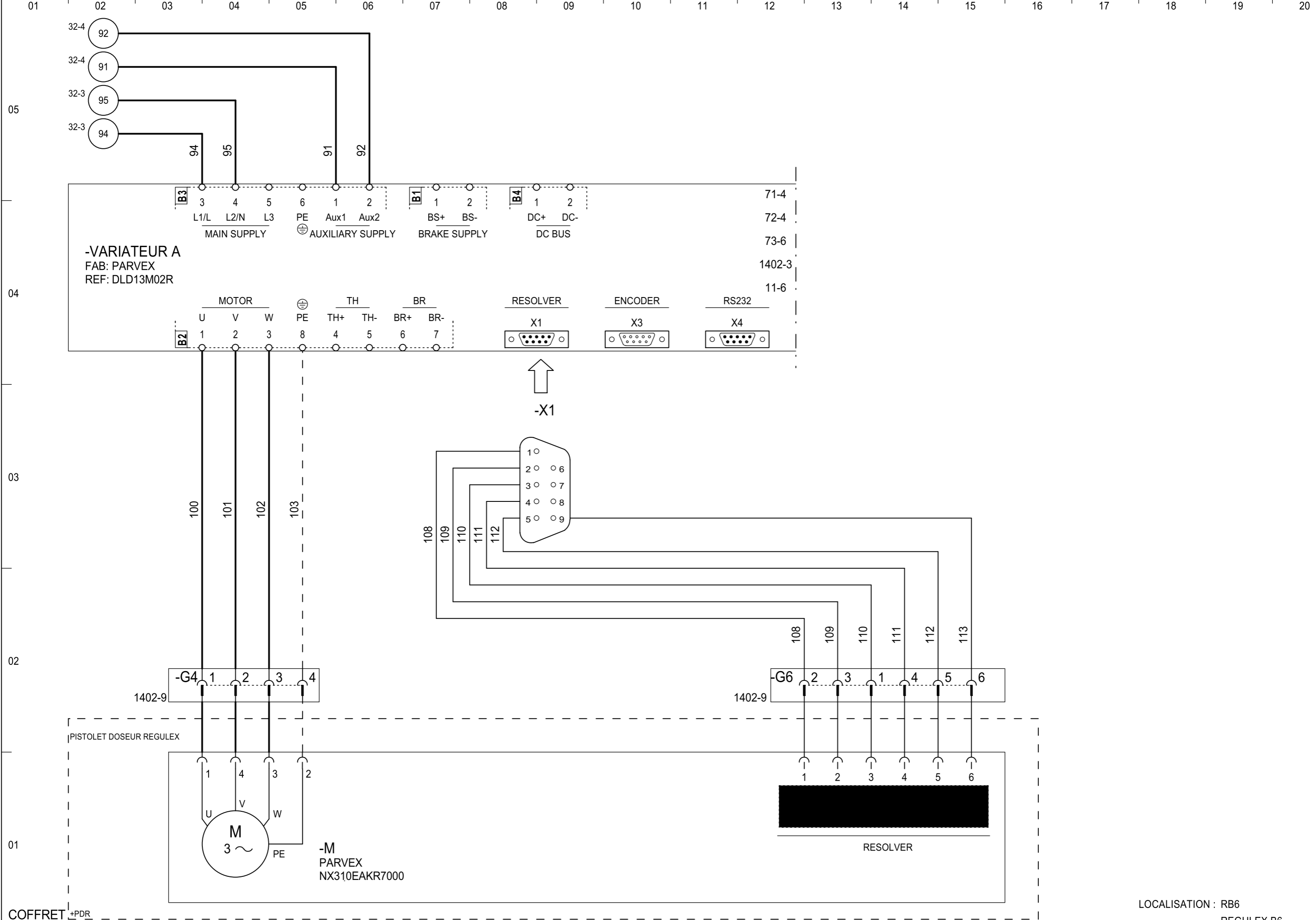
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DATE 15/12/2008 04/08/2016 18/07/2017

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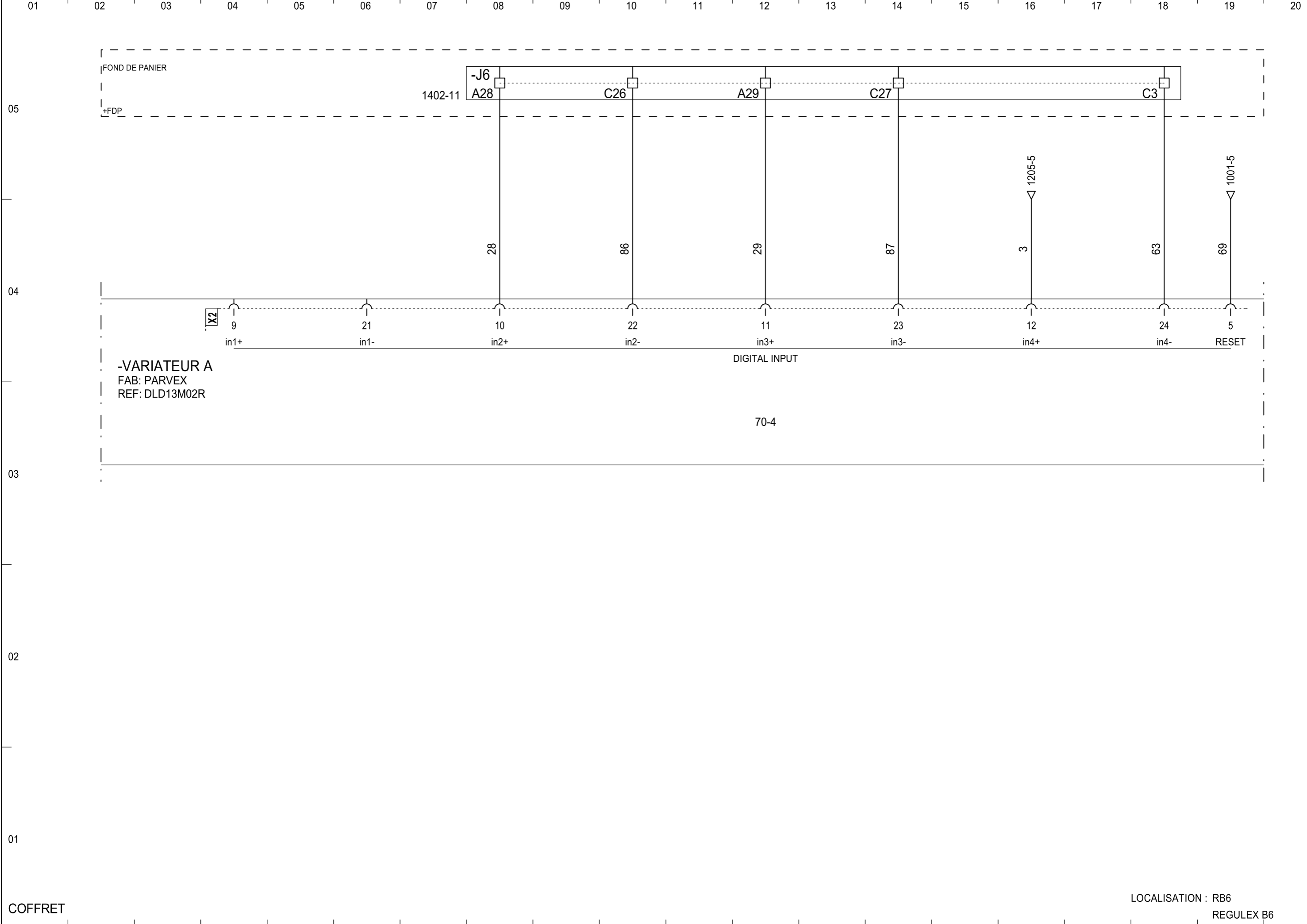
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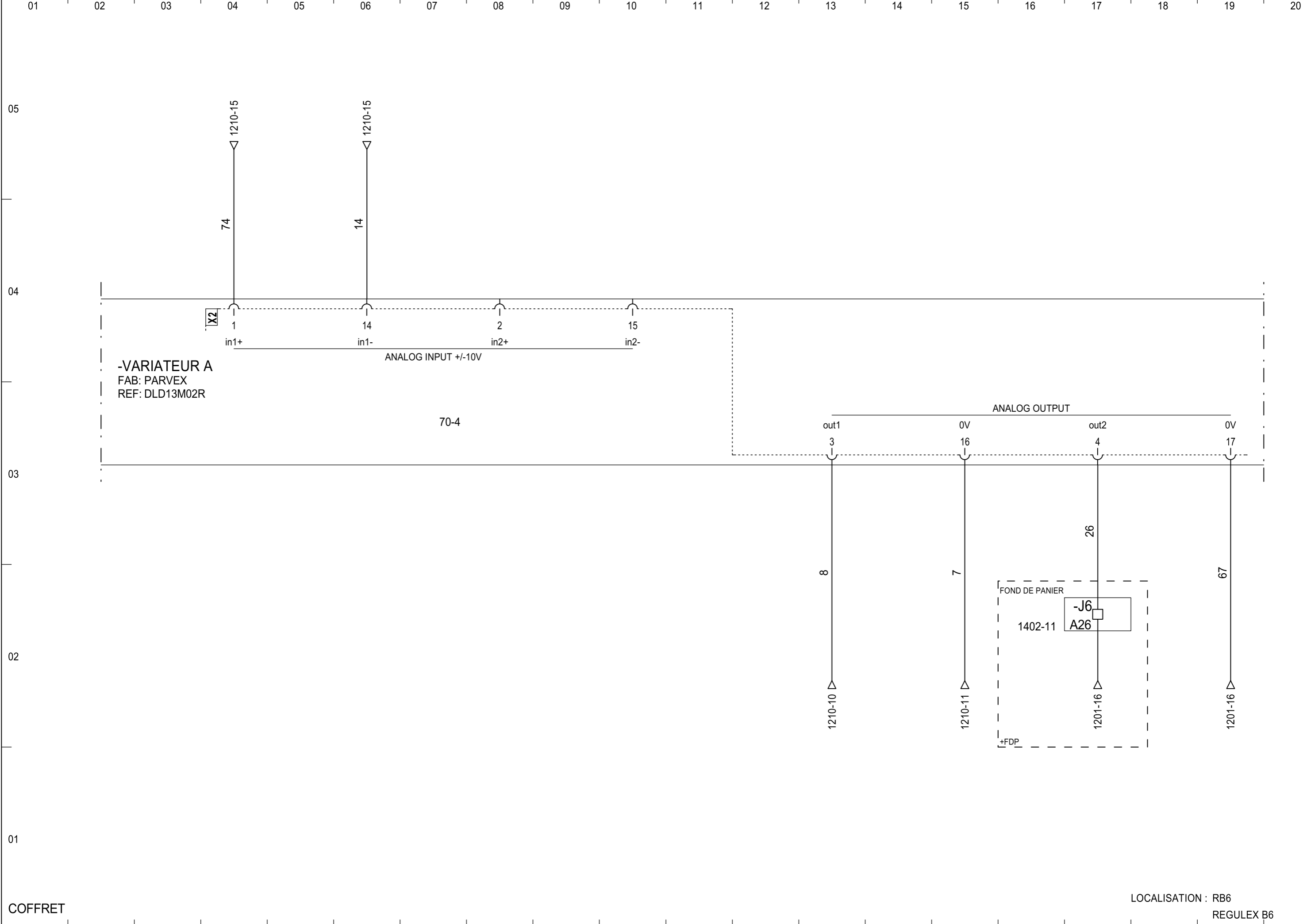
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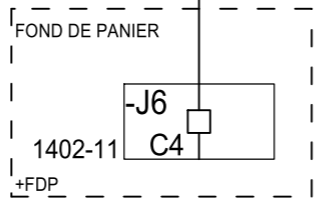
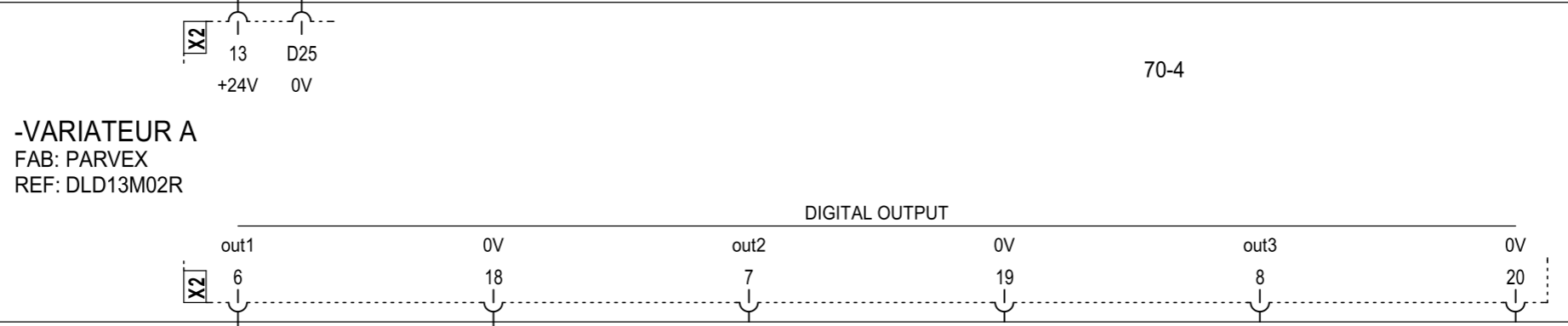
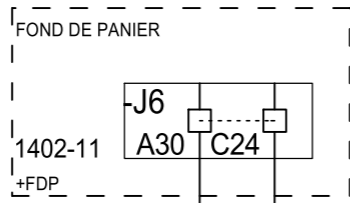
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VARIATEUR 4/4

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# RESEAUX

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RESEAU

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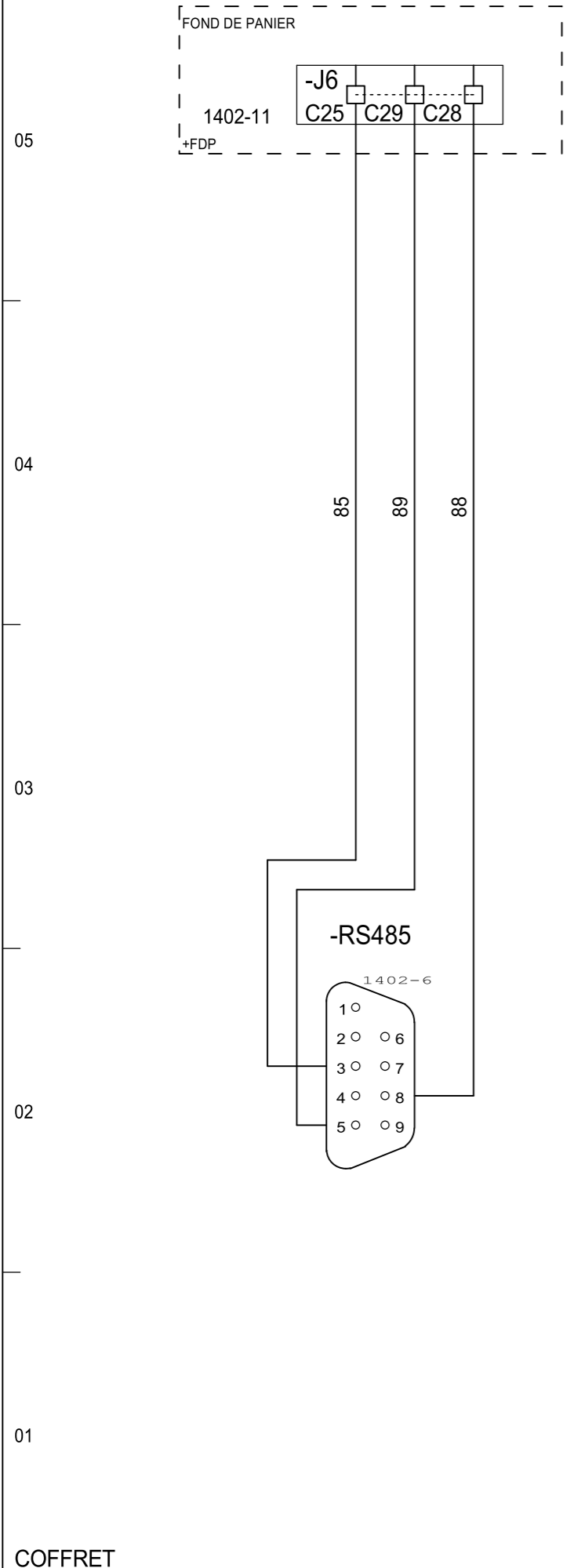
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RESEAU RS485

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04

# INTERFACE BAIE

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INDICE	A.00	B.00	C.00
VISA	KREMLIN	KREMLIN	JSY
DATE	15/12/2008	04/08/2016	18/07/2017

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INTERFACE BAIE

Affaire N°

**055423098**

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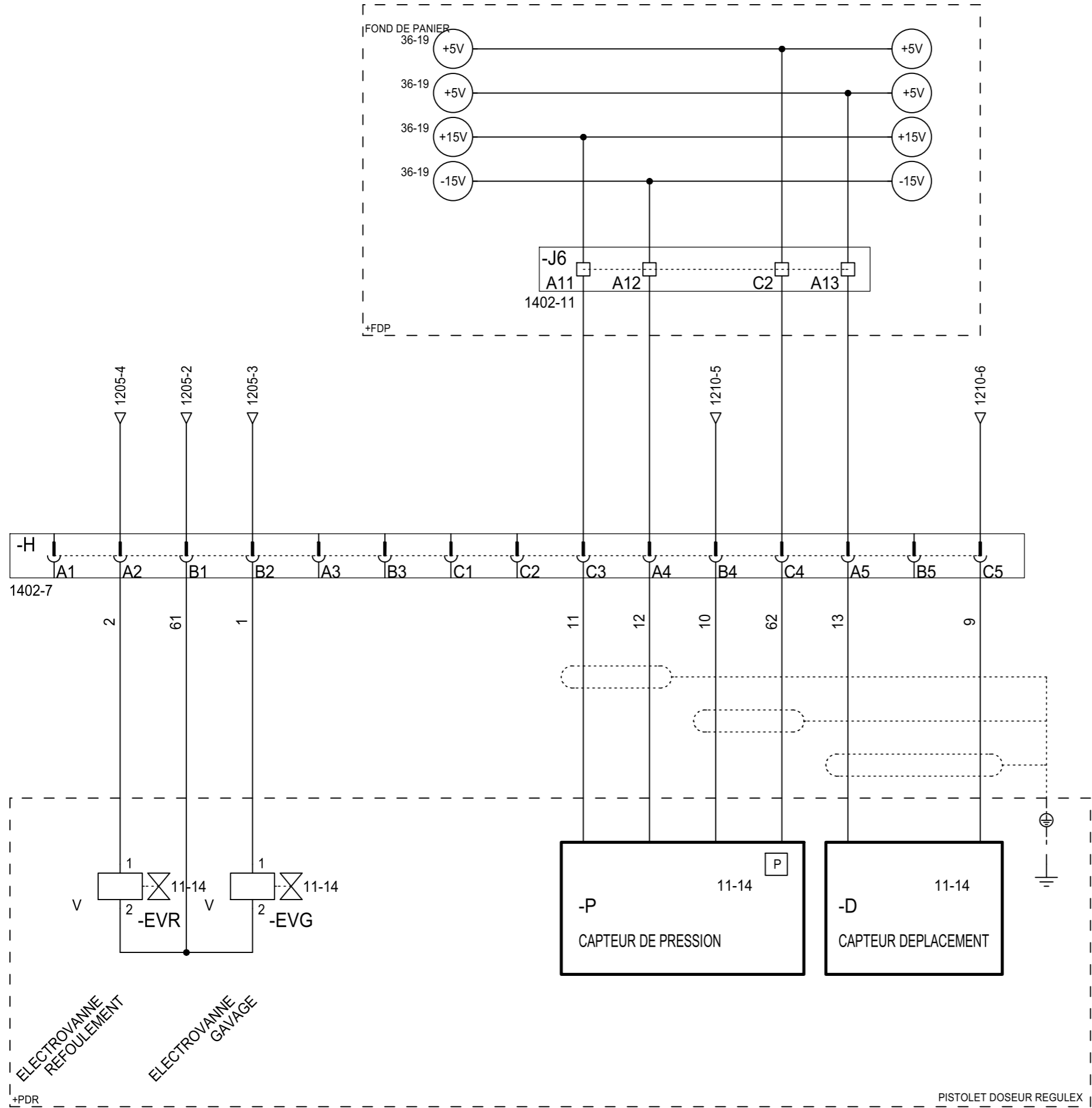
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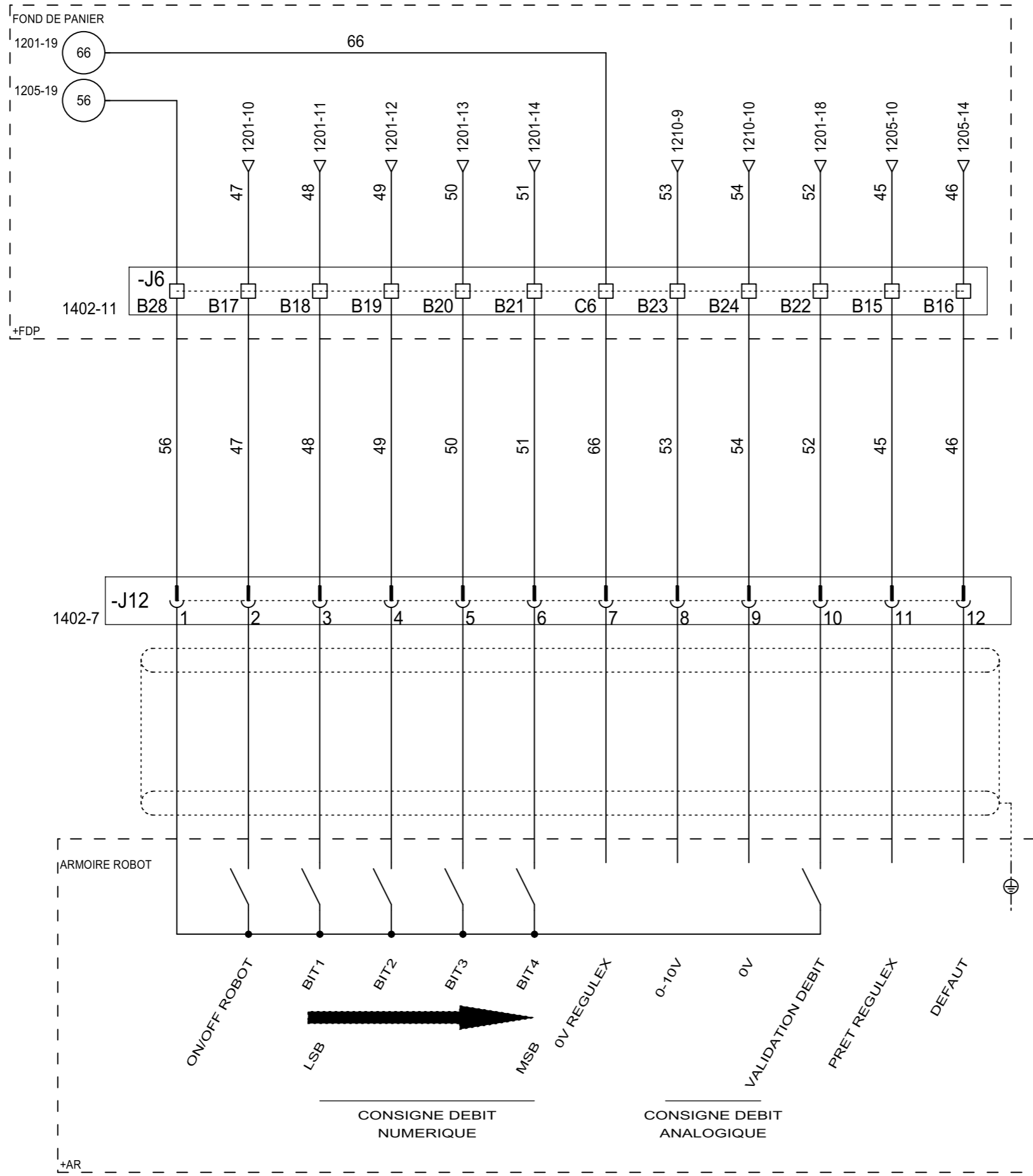
INTERFACE BAIE - REGULEX

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INTERFACE BAIE - ROBOT

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FOLIO 102  
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# COMMANDE

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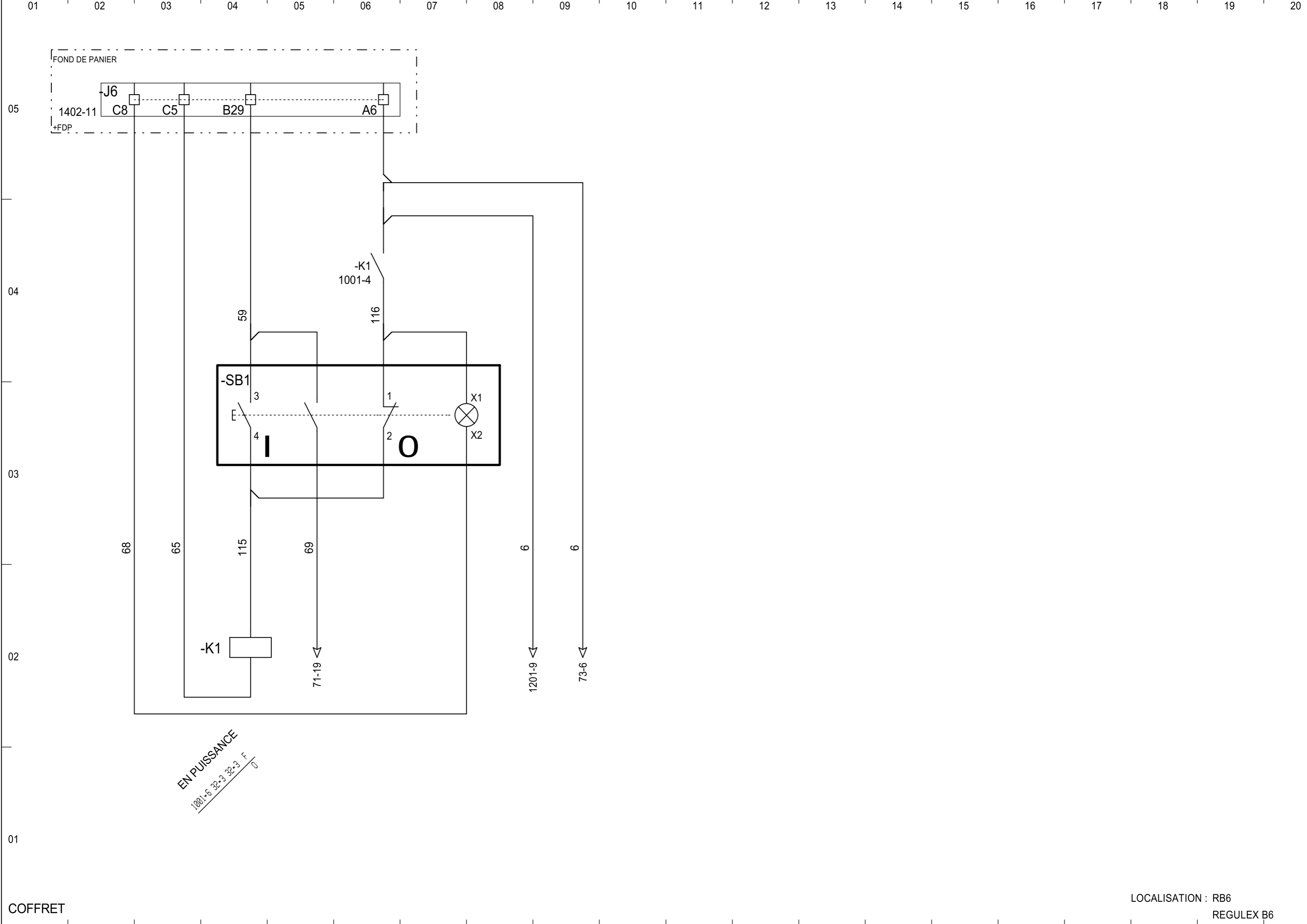
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VISA KREMLIN KREMLIN JSY  
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COMMANDE

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1001-6 32-3 32-3 F  
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INDICE	A.00	B.00	C.00
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MISE EN PUISSANCE

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# AUTOMATE

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AUTOMATE

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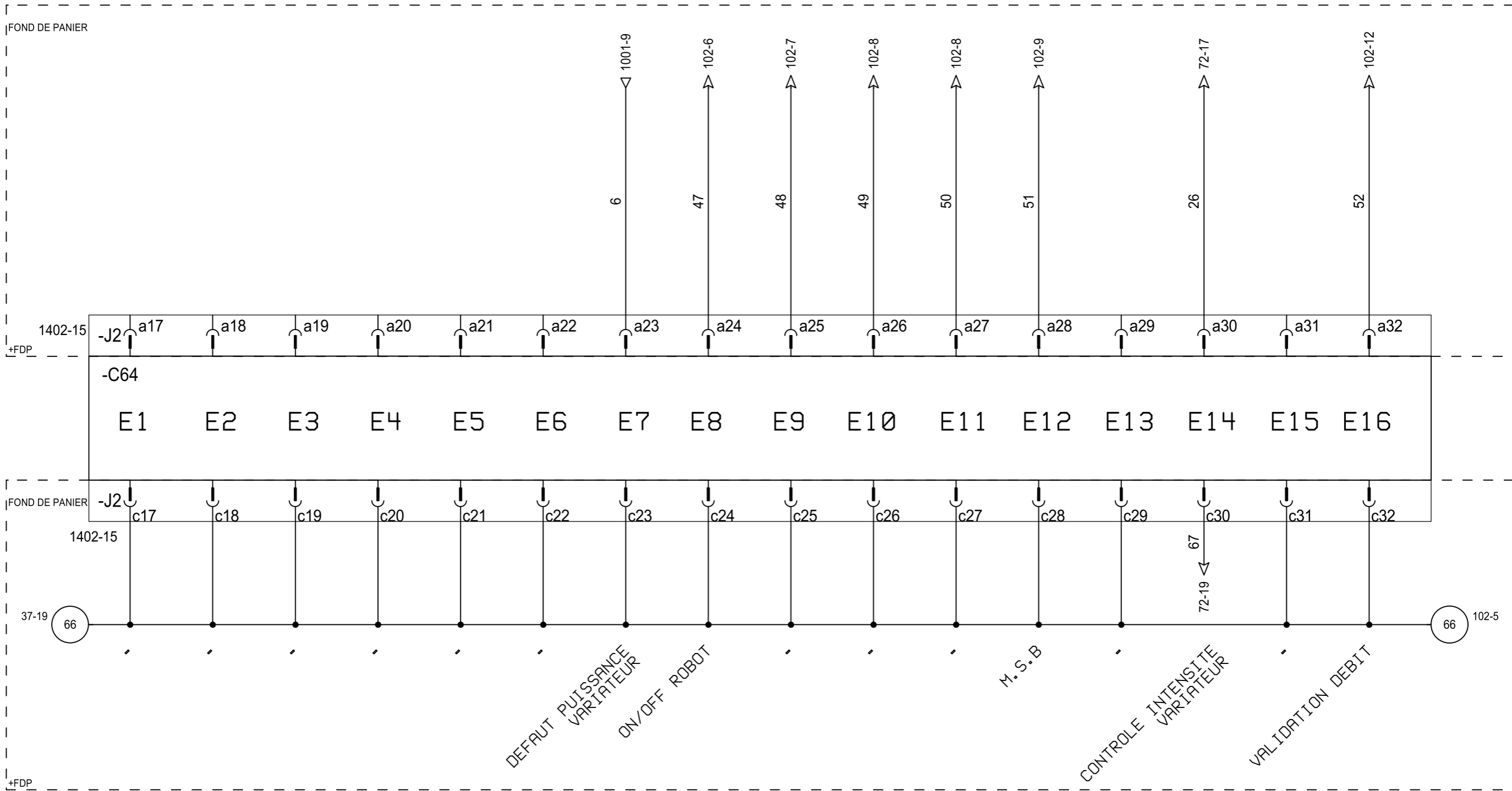
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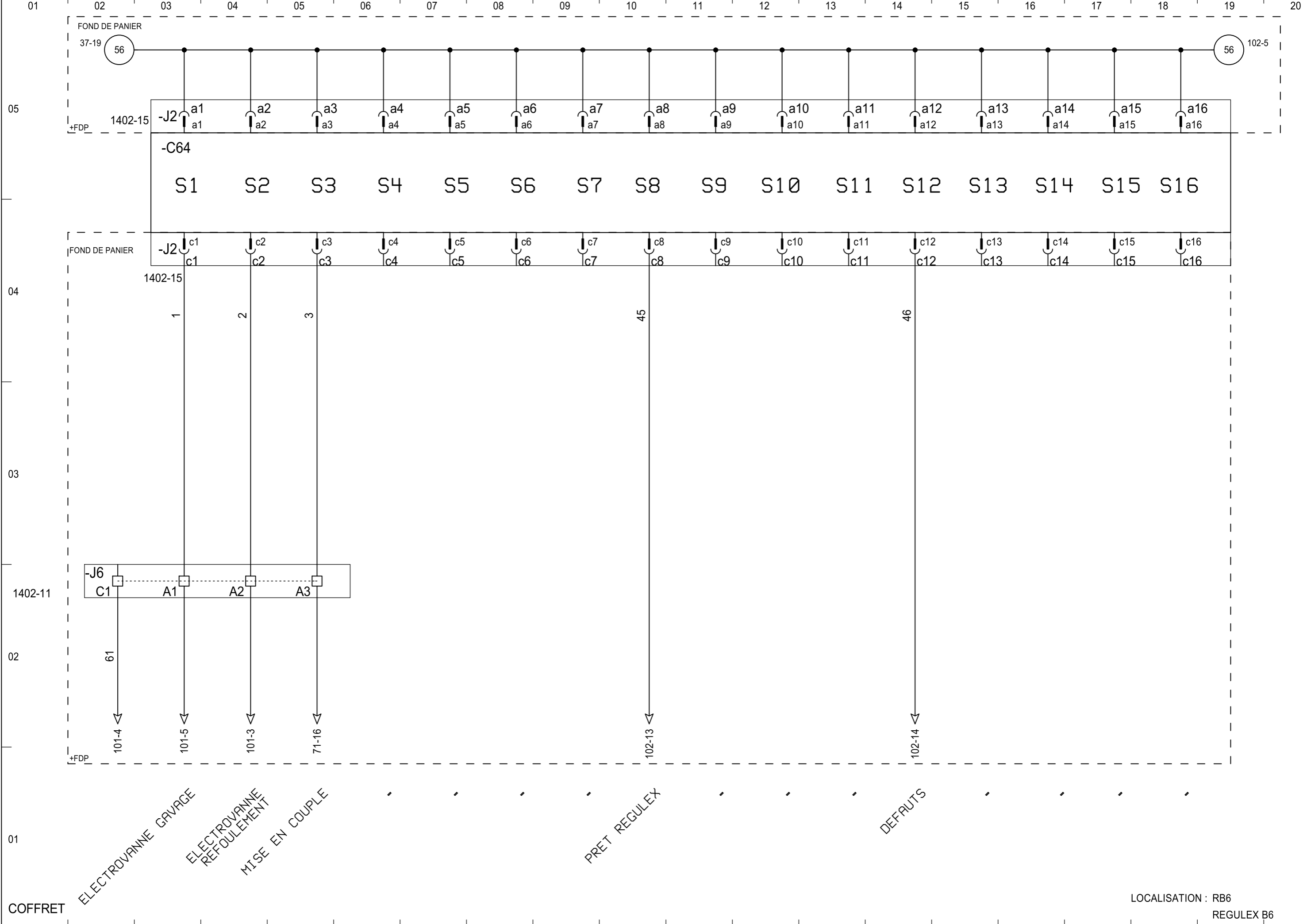
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 ELECTROVANNE  
 REFOULEMENT  
 MISE EN COUPLE

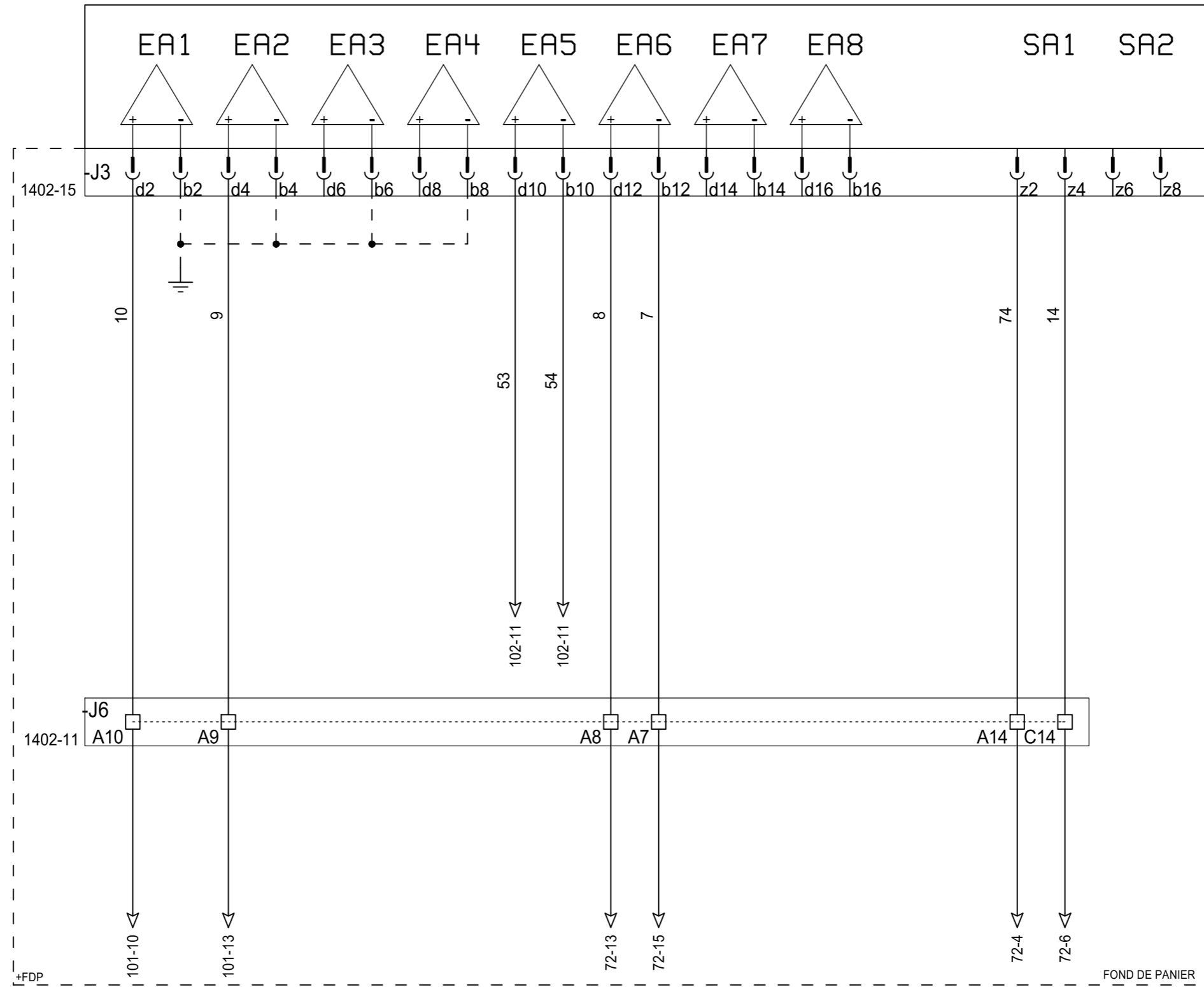
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CRPTEUR DE PRESSION  
POTENTIOMETRE

CONSIGNE DEBIT ANAL.  
VARIATEUR

CONSIGNE VITESSE

COFFRET

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ENTREES ET SORTIES ANALOGIQUE

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# IMPLANTATIONS

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DATE	15/12/2008	04/08/2016	18/07/2017

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IMPLANTATIONS

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055423098

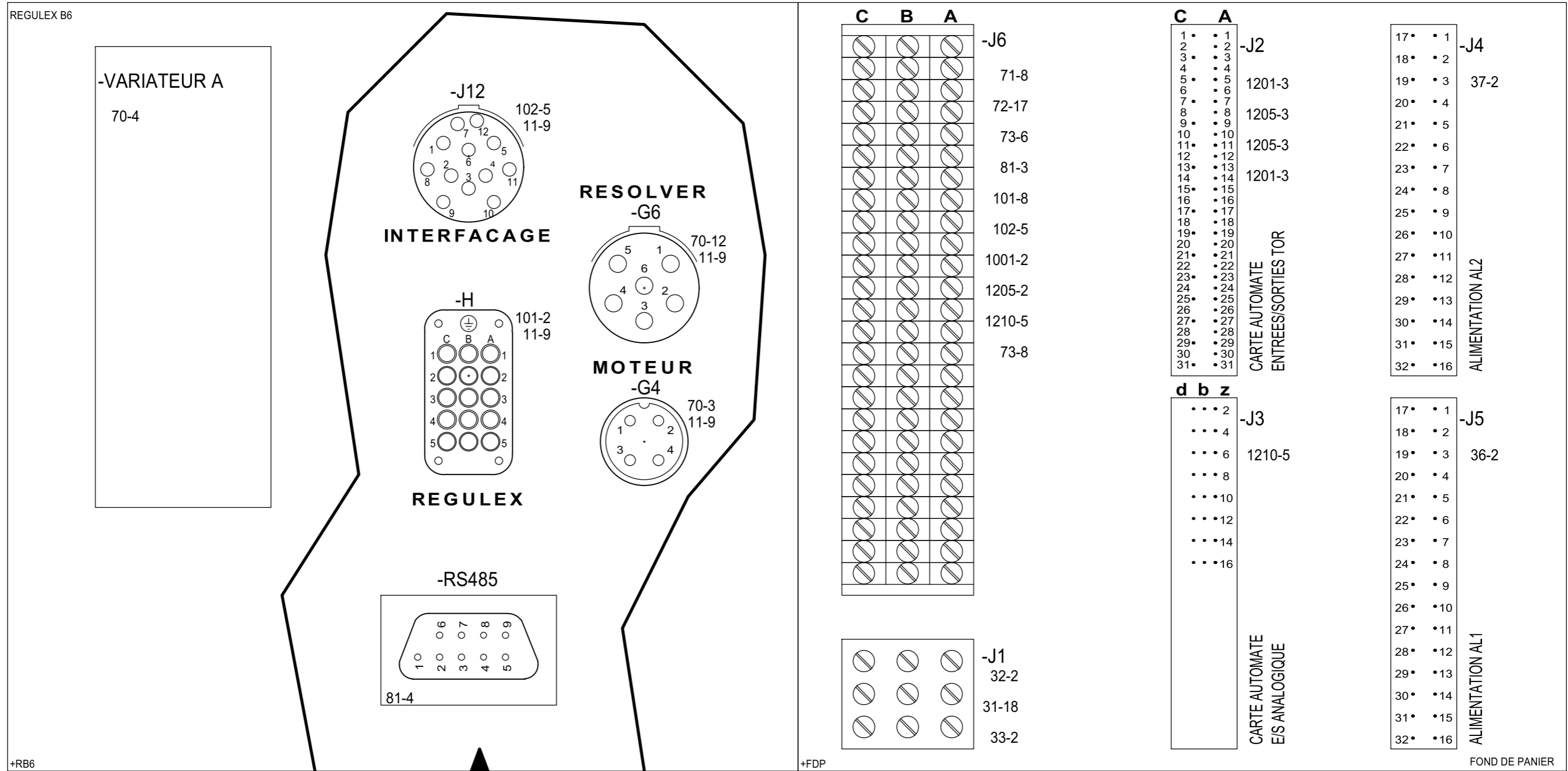
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**CONNECTIQUE  
ARRIERE  
BAIE**

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# BORNIERS

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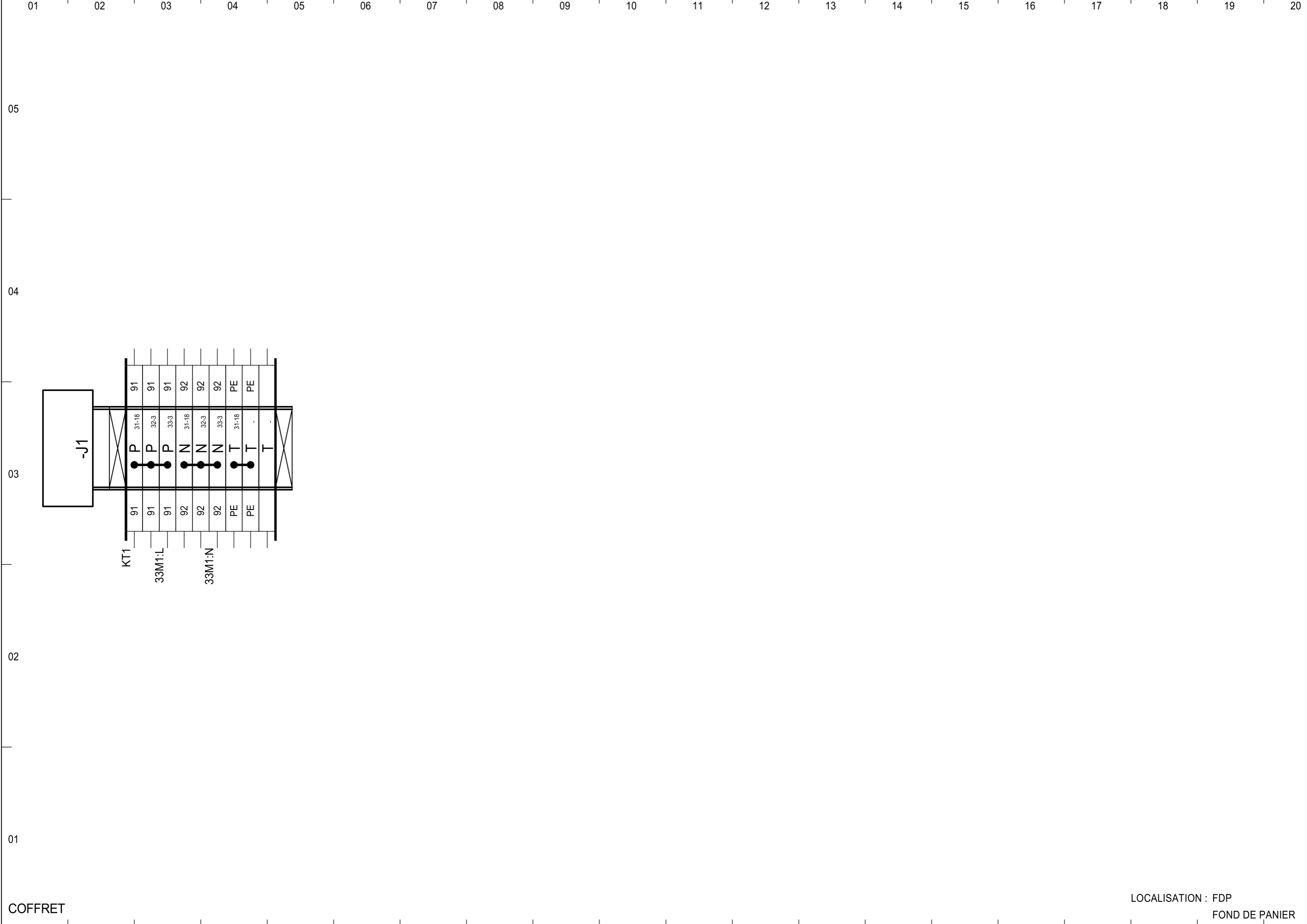
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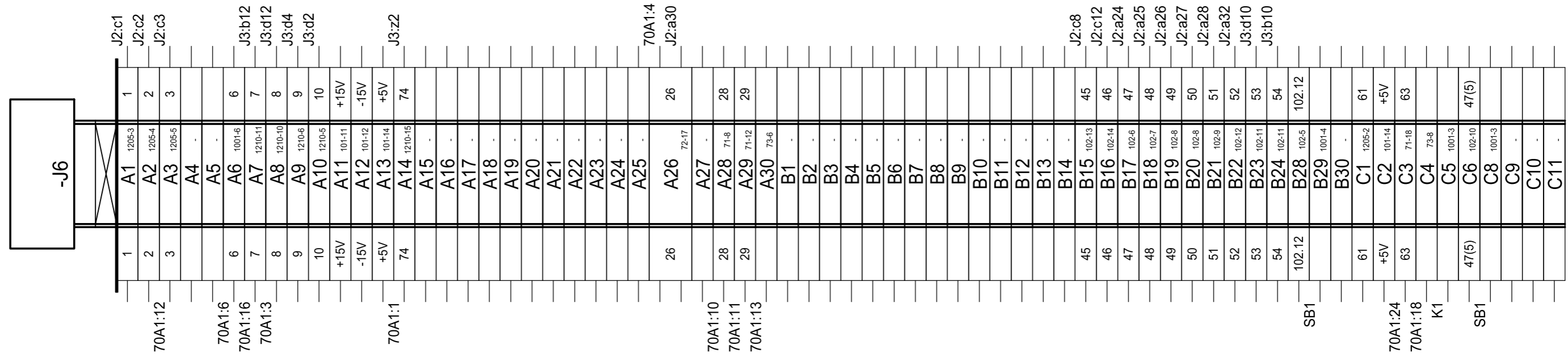
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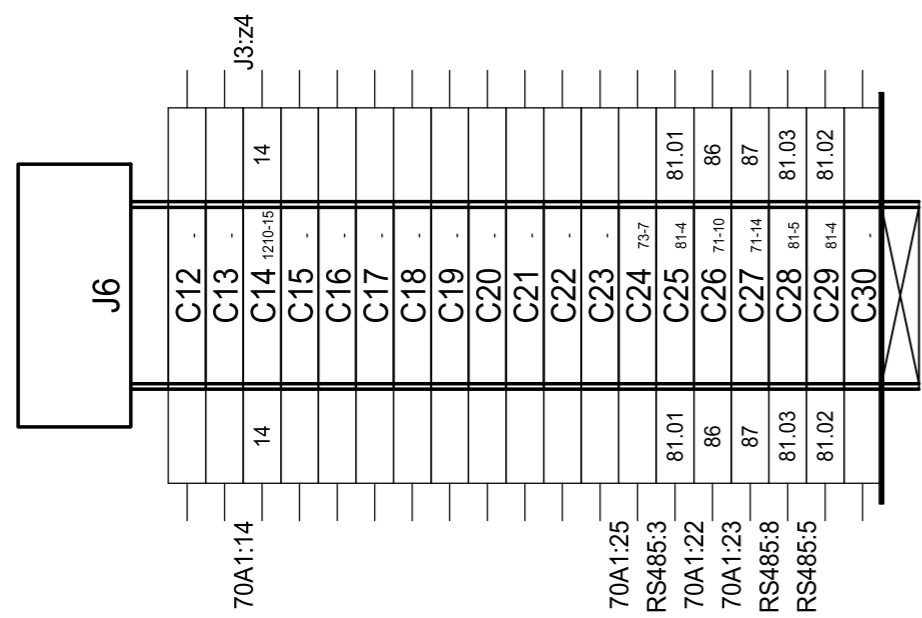
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LOCALISATION : FDP  
FOND DE PANIER

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 DATE 15/12/2008 04/08/2016 18/07/2017

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# CONNECTEURS

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CONNECTEURS

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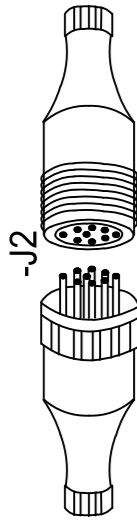
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J6:B20	a27	50	C64
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	a29		C64
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	a31		C64
J6:B22	a32	52	C64:c1
J6:A1	c1	1	C64:c2
J6:A2	c2	2	C64:c3
J6:A3	c3	3	C64:c4
	c4		C64:c5
	c5		C64:c6
	c6		C64:c7
	c7		C64:c8
J6:B15	c8	45	C64:c9
	c9		C64:c10
	c10		C64:c11
	c11		C64:c12
J6:B16	c12	46	C64:c13
	c13		C64:c14
	c14		C64:c15
	c15		C64:c16
	c16		C64
	c17	0V1	C64
	c18	0V1	C64
	c19	0V1	C64
	c20	0V1	C64
	c21	0V1	C64
	c22	0V1	C64
	c23	0V1	C64
	c24	0V1	C64
	c25	0V1	C64
	c26	0V1	C64
	c27	0V1	C64
	c28	0V1	C64
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**SAMES-KREMLIN**

13 Chemin de Malacher - 38240 Meylan Cedex France 04 76 41 60 60

INDICE A.00 B.00 C.00  
VISA KREMLIN KREMLIN JSY  
DATE 15/12/2008 04/08/2016 18/07/2017

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Connecteur: +FOND DE PANIER-J2  
1/1

Affaire N°

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◀ 1550 1552 ▶

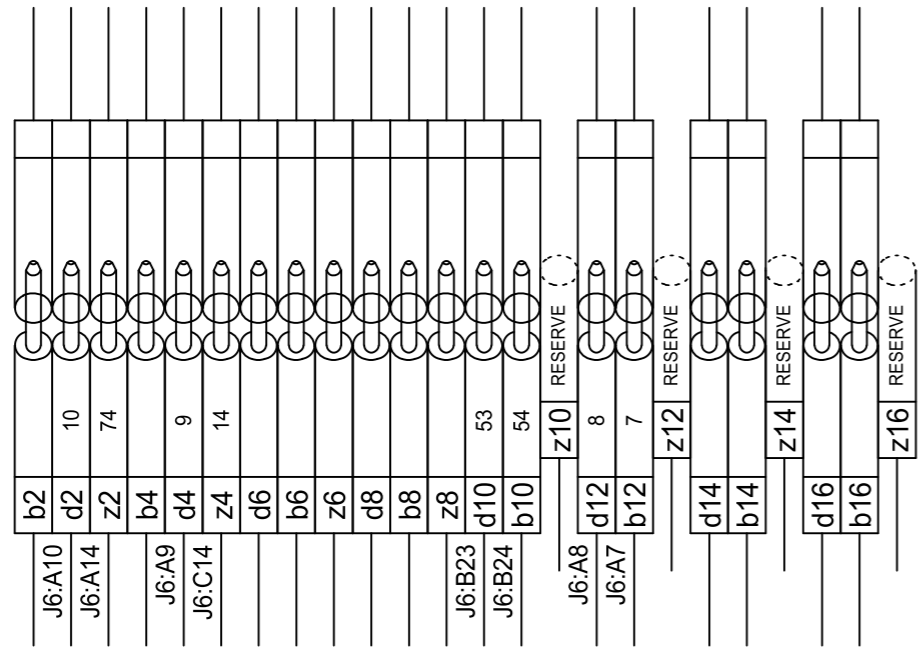
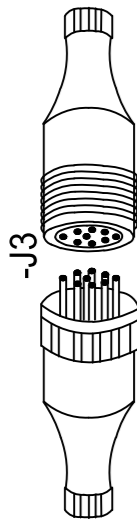
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FOND DE PANIER

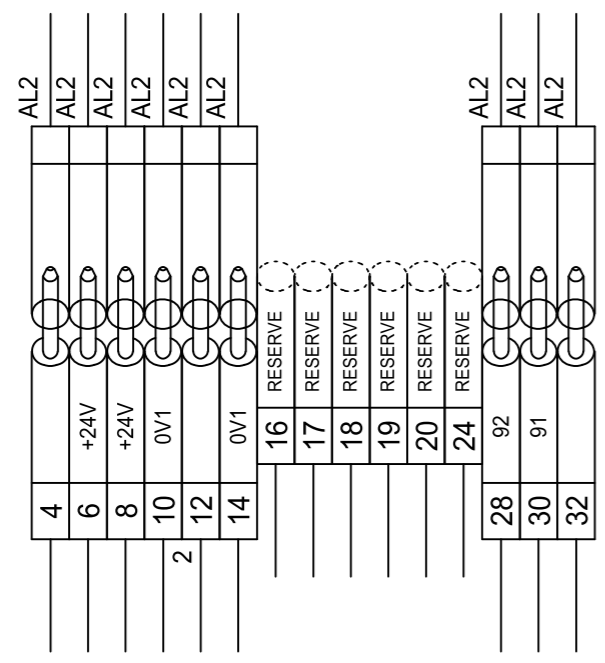
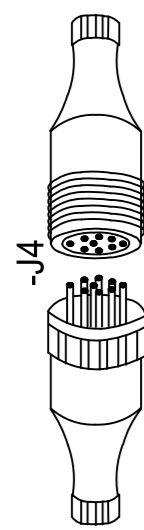
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VISA	KREMLIN	KREMLIN	JSY
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**1552**  
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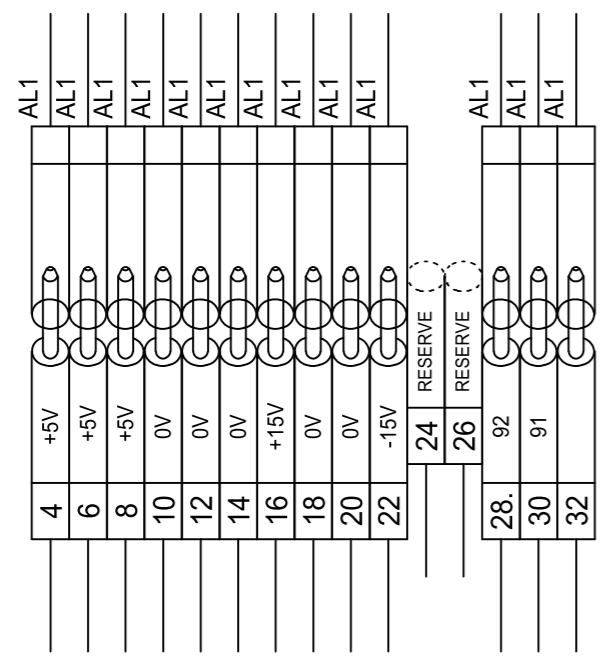
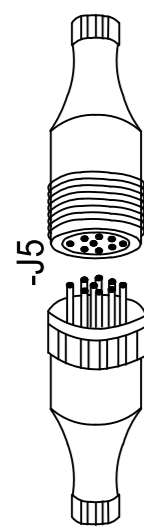
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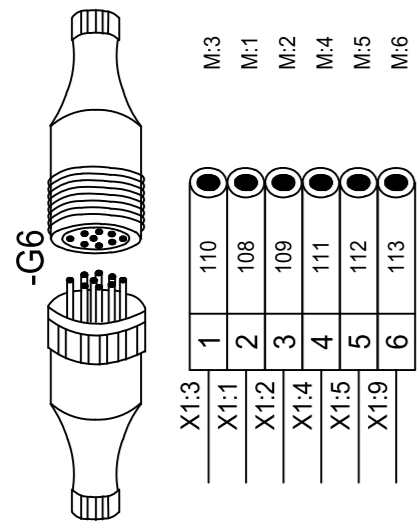
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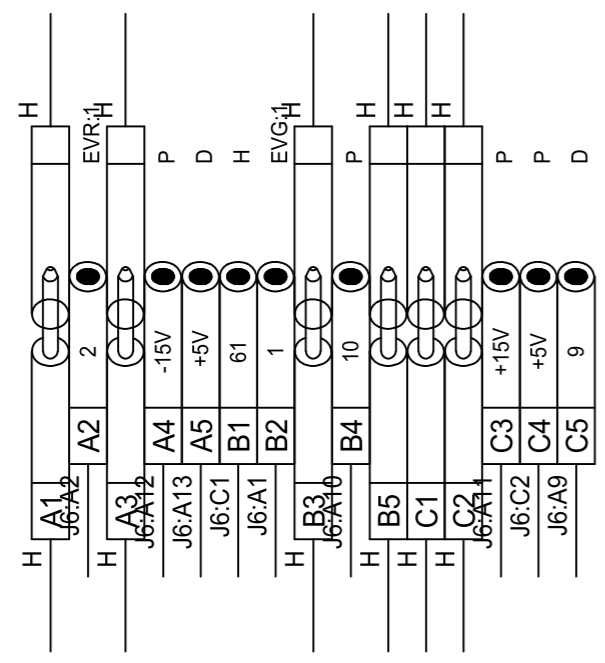
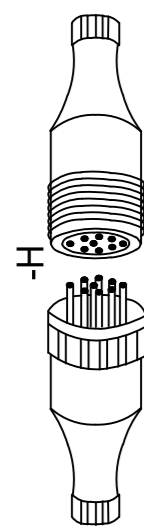
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