



For additional information or copies of your IntelliFlow™ RM2 manual, please visit us online at:

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**RM2**



Obey local or municipal regulations for product recycling and disposal.

## ABOUT THIS MANUAL

### ITS PURPOSE

The purpose of this manual is to help you get the most value from your Binks IntelliFlow system. It can help you to determine how to install, operate, maintain, and repair your equipment. It provides information and procedures for routine maintenance and servicing and offers diagnostic and repair procedures to follow when trouble occurs.

### ITS CONTENTS

This manual is divided into Chapters, each of which is divided into consecutively numbered Sections.

Chapters will contain text, images, tables, or a combination of them.

Pages with images will have paragraphs and sentences with callout numbers that refer to their respective images, steps, and parts.

Procedures, once described in the text, are not normally repeated. When it is necessary to refer to another Chapter or Section, the reference will be given as Chapter and Section number. Cross references given without the use of the word "Chapter" apply to Sections or paragraphs in the current Chapter.

Chapter 02 Table of Contents.

Chapter 03 EU Declaration of Conformity: A mandatory document the manufacturer signs to declare the product complies with the EU requirements.

Chapter 04 Safety: Safety, hazard, and warning rules.

Chapter 05 Introduction: System components, theory of operation, and specifications.

Chapter 06 Installation: Installation steps.

Chapter 07 Setup: Software setup steps.

Chapter 08 Manual Change Summary: Revisions and changes made to this manual.

Chapter 09 Warranty: Your equipment's warranty.

### WHO SHOULD USE THIS GUIDE

This guide is intended for users with different levels of knowledge and experience with this system:

**Installers:** The person(s) who will locate and install this equipment.

**Users:** The person(s) who will learn how to operate this equipment.

**Servicers:** The person(s) who will service and maintain this equipment.

This guide assumes all persons who will install, use, operate, and service this equipment have some knowledge of the product and its operating system.

For information on the installation of this equipment, refer to RM2 Installation Manual 77-3153-1.

For information on the operation of this equipment, refer to RM2 Operation Manual 77-3153-2.

For information on the servicing and repair of this equipment, refer to RM2 Service Guide 77-3153-3.

For information on accessory kits and spare parts of this equipment, refer to RM2 Kit Instructions & Spare Parts Manual 77-3153-4.

### MANUAL DISCLAIMER

All current and applicable certifications shown in this manual confirm Binks' adherence to the strict standards met to obtain the required regulatory compliances.

This manual was prepared with the most accurate information current at the time of publishing. Binks does not accept responsibility for errors in, or omissions from, the information contained herein.

Please get in touch with your distributor or Binks Customer Service for additional service information and assistance.

| RM2 RELATED MANUALS & PUBLICATIONS |                                              |
|------------------------------------|----------------------------------------------|
| Part Number                        | Description                                  |
| 77-3150                            | Coriolis Flow Meter                          |
| 77-3153-2                          | RM2 Operation Manual                         |
| 77-3153-3                          | RM2 Service Guide                            |
| 77-3153-4                          | RM2 Kit Instructions & Spare Parts Manual    |
| 77-3154                            | Standard Flow Meter                          |
| 77-3159                            | Screen Protector Kit                         |
| 77-3160                            | Gun Flush Box Kit                            |
| 77-3166                            | IntelliFlow Pulse Valve Manual               |
| 77-3167                            | IntelliFlow 300 & 600cc Dispense Pump Manual |

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## 03 EU DECLARATION OF CONFORMITY

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <b>Product Description / Object of Declaration:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | IntelliFlow RM2                                                                                                                                                                                                                                                                  |                                                                            |
| <b>This Product is designed for use with:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Solvent & Waterbased Materials                                                                                                                                                                                                                                                   |                                                                            |
| <b>Suitable for use in hazardous area:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                  |                                                                            |
| <b>Protection Level:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Not Applicable                                                                                                                                                                                                                                                                   |                                                                            |
| <b>Notified body details and role:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TUV SUD America Inc, 141 14th St NW,<br>New Brighton, MN 55112 USA. Cert Nos NC72170733.1<br>INTERTEK Testing Services NA, 545 E. Algonquin Rd,<br>Arlington, IL 60005 USA. Cert Nos. 104972588MIN-003,<br>104972588MIN-002 US/9413/ITS-A1/M2.<br>Low Voltage and EMC Assessment |                                                                            |
| <b>This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Binks US LLC.<br>3760 Victoria St N<br>Shoreview, MN 55126. USA                                                                                                                                                                                                                  |                                                                            |
| <b>Representative authorised to compile the technical file</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | President @. Binks France SAS<br>5 Place Pierre Semard, 94130 Nogent sur Marne , Paris, France                                                                                                                                                                                   |                                                                            |
| <b>EU Declaration of Conformity</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                  | <b>CE</b>                                                                  |
| <b>This Declaration of Conformity / Incorporation is issued under the sole responsibility of the manufacturer:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                  |                                                                            |
| <p>Machinery Directive 2006/42/EC<br/> EMC Directive 2014/30/EU<br/> Low Voltage Directive 2014/35/EU<br/> RoHS Directive 2011/65/EU<br/> by complying with the following statutory documents and harmonised standards:<br/> EN 60204-1:2018 Safety of Machinery. Electrical equipment of machines<br/> BS EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emissions<br/> BS EN 61000-3-3:2013 Electromagnetic compatibility (EMC) - Limits - Limitation for voltage changes, voltage fluctuations, and flicker in public low-voltage supply systems<br/> EN 61000-6-2:2005/AC:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments<br/> EN 61000-6-4:2007/A1:2011 Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments.<br/> UL 61010-1:2012 Ed.3+R:2019/CSA C22.2#61010-1-12:2012 Ed.3+U1;U2;A1 Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements<br/> UL 61010-2-051:2019 Ed.4/CSA C22.2#61010-2-051:2019 Ed.4 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 2- 051: Particular Requirements for Laboratory Equipment for Mixing and Stirring<br/> KS C 9610-6-2:2019 EMC Immunity Testing of Industrial Environments<br/> KS C 9610-6-4:2017 EMC Emission Testing of Industrial Environments<br/> EN 63000: 2018 Technical documentation for the assessment according to REACH<br/> IEC 61010-1:2010+AMD1:2016 Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.<br/> IEC 61010-2-051:2018 Safety requirements for electrical equipment for measurement, control and laboratory use. Particular requirements for laboratory equipment for mixing and stirring<br/> FCC 47 CFR Part 15-Radio Frequency Devices, Subpart B – Unintentional Radiators<br/> ICES-001, Issue 5:2020 Class A Industrial, Scientific, and Medical (ISM) Equipment</p> |                                                                                                                                                                                                                                                                                  |                                                                            |
| Providing all conditions of safe use / installation stated within the product manuals have been complied with and also installed in accordance with any applicable local codes of practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                  |                                                                            |
| Signed for and on behalf of<br>Binks US LLC:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <br>F. A. Sutter<br>6-3-25                                                                                                                                                                    | Executive President: Engineering and Operations, Shoreview, MN, 55126. USA |
| Document Part No.<br>EN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                  |                                                                            |

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## 04 SAFETY

### 04.1 SAFETY PRECAUTIONS

Before the operation, maintenance, or servicing of this Binks system; fully read and understand all technical and safety literature for your product. This manual contains information that is important for you to know and understand.

#### **This information relates to USER SAFETY and the PREVENTION OF EQUIPMENT PROBLEMS.**

To help you understand this information, we use recognizable ANSI Z535 and ISO warning boxes and symbols throughout this manual. Please obey these safety sections.

#### **⚠ DANGER**

**DANGER!** Indicates a hazardous situation that, if not avoided, will result in death or severe injury.

#### **⚠ WARNING**

**WARNING!** Indicates a hazardous situation that, if not avoided, could result in death or severe injury.

#### **⚠ CAUTION**

**Caution!** Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury, or equipment damage.

#### **NOTICE**

**Notice:** Indicates information considered important but not hazard related.

#### **SAFETY**

**Safety:** Indicates a type of safety instruction, or a separate panel on a safety placard, where specific safety-related instructions or procedures are described.

Careful study and continued use of this manual will provide a better understanding of the equipment functions and procedures.

This understanding will result in improved operation, efficiency, and longer, trouble-free service with faster and easier troubleshooting. If you need the necessary safety literature for your specific system, contact your local Binks representative or Binks directly.

#### **NOTICE**

This manual lists standard specifications and service procedures. Differences can occur between this literature and your equipment.

Differences in local or municipal codes, manufacturer or plant requirements, material delivery requirements, and more can make variations unpreventable. To find these differences, compare this manual to your system installation drawings and other applicable Binks equipment manuals.

#### **⚠ WARNING**

The user **MUST** read and be familiar with the Safety Section in this manual and the safety literature therein identified.

Only trained personnel can operate this equipment.

All personnel who operate, clean, or maintain this equipment **MUST** fully read and understand this manual! To operate and service the equipment, follow all **WARNINGS** and safety requirements.

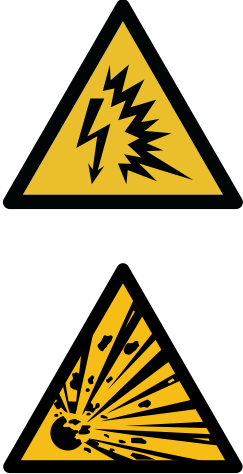
The user must be aware of and adhere to **ALL** local building and fire codes and ordinances, as well as NFPA 33 AND EN 16985 SAFETY STANDARDS, LATEST EDITION, or applicable country safety standards, before the installation, operation, or servicing of this equipment.

#### **⚠ WARNING**

The hazards shown on the pages that follow can occur during the normal use of this Binks equipment, but not all listed hazards will be applicable to your product model or equipment.

**Repairs may only be performed by personnel authorized by Binks.**

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                                                                                                         | <b>HAZARDS</b><br>Indicate possible hazards.                                                                                                                                                                                                                                                                                                                                                                               | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Spray Areas</b></p>   | <p><b>Fire Hazards</b></p> <p>Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard.</p> <p>If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion.</p> <p>Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary</p> | <p>Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable.</p> <p>Keep spray areas clean to prevent the build-up of combustible residues.</p> <p>Do not smoke in the spray area.</p> <p>The high voltage supplied to the atomizer must be turned off before the equipment is cleaned, flushed or maintained.</p> <p>Spray booth ventilation must be kept at the rates as set by NFPA-33, OSHA, country, local, and municipal codes.</p> <p>If flammable or combustible solvents are used to clean the equipment, ventilate the area.</p> <p>Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of the output voltage is necessary.</p> <p>Do an equipment test only in areas free of combustible material. The test may necessitate the high voltage to be on, but only as instructed.</p> <p>Non-factory replacement parts or unauthorized equipment modifications can cause a fire or injury.</p> <p>The key switch bypass is used only during setup operation.</p> <p>Do no production work with disabled safety interlocks.</p> <p>Set up and operate the paint procedure and equipment under NFPA-33, NEC, OSHA, local, municipal, country, and European Health and Safety Norms.</p> |

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                                         | <b>HAZARDS</b><br>Indicate possible hazards.                                                                                                                                                                                                                                                                                                                                                                                                 | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Spray Areas</b></p>                    | <p><b>Explosion Hazard</b></p> <p>Improper or unsatisfactory operation and maintenance procedures will cause a fire or explosion hazard.</p> <p>If the safety interlocks are disabled during operation, protection against accidental arcing is shut off and can cause a fire or explosion.</p> <p>Frequent Power Supply or Controller shutdown identifies a problem in the system. For this occurrence, a correction will be necessary.</p> | <p>Prevent electrostatic arcing. Maintain spark-safe work distance between the parts that get coated and the applicator. A span of one inch for every 10KV of output voltage is necessary.</p> <p>Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards.</p> <p>If equipped, set the current overload sensitivity as described in the related section of the equipment manual. If incorrectly set, the current overload sensitivity for protection against accidental arcing is turned off and can cause a fire or explosion.</p> <p>Frequent power supply shutdown indicates a problem in the system, which requires correction.</p> <p>Always turn off the control panel power before the system is flushed, cleaned, or servicing the spray system equipment. Make sure no objects are within the spark-safe work distance before the high voltage is turned on.</p> <p>The control panel must interlock with the ventilation system and conveyor in accordance with NFPA-33, EN 50176.</p> <p>Fire extinguishing equipment must be present in the spray area. Periodically run a test to make sure the equipment stays usable. Do an equipment test only in areas free of combustible material.</p> |
| <p><b>General Use and Maintenance</b></p>  | <p>Improper or unsatisfactory operation and maintenance procedures will cause a fire hazard.</p> <p>Personnel must be correctly trained in the operation and maintenance of this equipment.</p>                                                                                                                                                                                                                                              | <p>Train all personnel in accordance with the requirements of NFPA-33, EN 60079-0.</p> <p>Before equipment operation, personnel must read and understand these instructions and safety precautions.</p> <p>Obey appropriate local, municipal, state, and national codes governing ventilation, fire protection, operation maintenance, and housekeeping.</p> <p>Reference OSHA, NFPA-33, EN Norms, and your insurance company requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                                                                                                                                                                                                                                                                                                      | <b>HAZARDS</b><br>Indicate possible hazards.                                                                                                                                                                                                                                                                                                             | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <p><b>Spray Area High Voltage Equipment</b></p>     | <p><b>Electrical Discharge</b></p> <p>This equipment contains a high-voltage device that can cause an electrostatic induction on ungrounded objects. This electrical charge is capable of igniting coating materials.</p> <p>Insufficient ground will cause a spark hazard. A spark can ignite many coating materials and cause a fire or explosion.</p> | <p>Operators in the spray area and the parts to be sprayed must be sufficiently grounded.</p> <p>All conductive objects inside the spray area must be grounded.</p> <p>Hold the parts that get sprayed on conveyors or hangers that are correctly grounded. The resistance between the parts and the earth-ground must not be more than 1 MΩ. Refer to: NFPA-33.</p> <p>Before the equipment is operated, ground all operators. They cannot wear rubber-soled insulated shoes. Wear ground straps on wrists or legs for sufficient ground contact.</p> <p>Operators must not wear or carry ungrounded metal objects.</p> <p>When used, operators must make complete contact with the applicator handle and electrostatic gun. Use conductive gloves or gloves with the palm section cut out.</p> <p>Operators must wear grounded footwear.</p> <p><b>NOTE: REFER TO NFPA-33 OR SPECIFIC COUNTRY SAFETY CODES FOR GUIDANCE TO CORRECTLY GROUND THE OPERATOR.</b></p> <p>Except for objects needed for the high-voltage process, all electrically conductive objects in the spray area are to be grounded. Supply a grounded conductive floor in the spray area.</p> <p>Always turn off the applicator voltage before the system is flushed, cleaned, or when servicing the spray system equipment.</p> <p>Unless specifically approved for use in hazardous locations, put all electrical equipment outside of Class I or II, Division 1 or 2 hazardous areas in accordance with NFPA-33, or outside of Zone 2 or Zone 22 in accordance with EN standards.</p> <p>Do not install an applicator into a fluid system if the solvent supply is ungrounded.</p> <p>Do not touch an energized applicator electrode.</p> |

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                                          | <b>HAZARDS</b><br>Indicate possible hazards.                                                                                                                                                                                                         | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Spray Areas</b></p>                     | <p><b>Toxic Fluid or Fumes</b></p> <p>Toxic fluids or fumes can cause severe injury or death if splashed in the eyes or on the skin, or if inhaled or swallowed.</p>                                                                                 | <p>Read the Safety Data Sheet (SDS) for instructions to know and understand how to handle the specific hazards of the fluids used, and the effects of long-term exposure.</p> <p>During the spray, clean, or servicing of equipment, or when in the work area, keep the work area fully ventilated.</p> <p>Always wear personal protective equipment (PPE) when in the work area or during equipment operation. Refer to the Personal Protective Equipment warnings in this manual.</p> <p>Store hazardous fluid in approved containers and refer to local, municipal, state, and national codes governing the disposal of hazardous fluids.</p>                                                                                                                                                               |
| <p><b>Spray Area and Equipment Use</b></p>  | <p>High-pressure fluid sprayed from the gun, hose fittings, or ruptured/damaged components can pierce the skin.</p> <p>While this injury can appear as cut skin, this is a severe injury that can result in the amputation of the affected area.</p> | <p>Do not point or operate the spray gun at the body part of a person.</p> <p>Do not put your hand or fingers over the gun fluid nozzle or fittings in the hose or proportioner.</p> <p>Do not try to stop or deflect leaks with your hand, glove, body, or shop rag.</p> <p>Do not “blowback” fluid, as the equipment is not an air spray system.</p> <p>Relieve pressure in the supply hoses, proportioner, and QuickHeat™ hose before the equipment is inspected, cleaned, or serviced.</p> <p>Use the lowest possible pressure to recirculate, purge, or troubleshoot the equipment.</p> <p>Examine the hoses, couplings, and fittings every day. Service or immediately replace parts that leak, are worn, or are damaged. Replace high-pressure hose sections. They cannot be recoupled or serviced.</p> |

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                                                                                                                                                                                                                                                                                                                        | <b>HAZARDS</b><br>Indicate possible hazards.                                                              | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Equipment and Fluids</b><br><br>                                                                                                                                                                                                                                                                                         | <b>Skin and Clothing Burns</b><br><br>Equipment surfaces and fluids can become very hot during operation. | Do not touch hot fluid or equipment during operation.<br><br>Do not let clothing touch the equipment during operation or immediately after the equipment is stopped.<br><br>Let the equipment fully cool before the examination or servicing of the component.                                        |
| <b>Pressurized Aluminum Parts</b><br><br><br><br><br><br><br><br> | The use of certain solvents and chemicals can cause equipment damage and severe personal injury.          | Do not use 1,1,1-trichloroethane, methylene chloride or other halogenated hydrocarbon solvents or fluids that contain such solvents.<br><br>These solvents can cause a severe chemical reaction and equipment rupture that results in equipment and property damage, serious bodily injury, or death. |

| <b>AREAS</b><br>Indicate possible hazard occurrences.                                                   | <b>HAZARDS</b><br>Indicate possible hazards.                                                                                                          | <b>SAFEGUARDS</b><br>Prevention of possible hazards.                                                                                                     |
|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Spray Areas</b><br> | <b>Do Not Touch</b><br>The effect of paint flow rates and formulations on the quality of atomization can cause the turbines to rotate at high speeds. | Do not use a rag or gloved hand against the bell edge to stop or slow down a bell during rotation.<br>Do not try to clean the bell edge during rotation. |
|                                                                                                         |                                                                                                                                                       |                                                                                                                                                          |

**⚠ CAUTION**

Only operate the equipment after you have read this section.

**04.2 ADDITIONAL SAFETY INFORMATION**

The IntelliFlow has an emergency stop (E-Stop) pushbutton on the main operator panel. During an emergency, all operations for the IntelliFlow will halt when the E-Stop is engaged. The operator must disengage the E-Stop and reset the system to recover from this state.

Observe all local or municipal safety measures and wear approved protective equipment when servicing this equipment. Clean all spilled chemicals and materials and do all work in a clean and organized environment to prevent personal injury and equipment damage.

**⚠ DANGER**

To prevent injury or electrocution while the system is under power, do not contact, disconnect, or manipulate electrical connections or devices. The main disconnect on the right side of the controller can be locked out. Follow the proper Lockout–Tagout (LOTO) procedures for internal controller electrical work.

Only qualified electrical personnel can perform the work if diagnosis and troubleshooting are not possible during working conditions.

**⚠ WARNING**

To prevent possible chemical spillage when personnel are not on site, air and fluid supplies for the equipment must be disabled when the equipment idles for an extended period, such as an end-of-day shutdown.

**NOTICE**

During the initial commission of the equipment and at periodic times throughout equipment life, visually examine all fluid fittings for leaks.

Periodically, it is necessary to visually examine all pieces of this equipment for signs of noticeable degradation due to chemicals or other conditions in the equipment's environment.

**SAFETY**

Obey local or municipal regulations that require installed fire suppression for equipment operation.

If the operation of this equipment, sensors, switches, or other ancillary equipment occurs in the presence of flammable gases and vapors, connect this equipment through intrinsic-safe or Zener barriers. Classify them as a "simple apparatus" or approve them for use in these areas.

## 05 PRODUCT OVERVIEW

The RM2 uses real-time metering to accurately dispense and mix resin, such as paint or polyurethane, and hardener on ratio regardless of varying flow rates. Applications include feathering or rapid triggering with manual guns.

The system is designed to accurately mix most two-component (2K) and one-component (1K) materials and is available in either low-pressure or medium-pressure models. It can easily handle very low flow rates or high ratio materials (greater than 20:1).

Users set up and operate the system using either the 10-inch touchscreen or remotely via the Corvina Cloud application. Access to system parameters and usage data is restricted via password protection.

RM2 systems are configurable with many options and accessories:

- Up to 7 paint colors
- Up to 2 hardeners for medium-pressure (MP) systems
- Hardener solvent flush standard (MP only)
- Optional hardener flow sensor
- Optional gun flush boxes
- Optional pedestal stand
- Optional wall mount
- Second gun capability
- Variety of power connections for use worldwide

### 05.1 FEATURES

The RM2 has unique features that provide superior benefits, including:

- Continuous flow: The mix block optimizes mix quality and minimizes internal volume by continuously receiving resin (component “A”) and hardener (component “B”).
- Accurate dispensing:
  - The low-pressure (LP) system allows precise control and positioning of the dispense pump. An electronically-controlled stepper motor with an integral linear actuator allows dispensing rates between 2cc and 600cc per minute and ratios from 1:1 to 100:1, depending on the pump size chosen. Ratio tolerance down to 1% is possible.
  - The medium-pressure (MP) system allows precise control of components “A” and “B” using flow meters. An electronically controlled pulse valve allows dispensing rates between 10cc and 1900cc per minute and ratios from 1:1 to 50:1. Ratio tolerance is  $\pm 1\%$ . An additional pulse valve is optional.
- Ease of use: The touchscreen and cloud app have the same user interface, which is easy to learn and simple to navigate. The user interface allows users to control the entire system and provides real-time data and in-depth troubleshooting support when alarms occur.
- Easily configurable: Use up to seven different resins and up to two spray guns. Flush boxes, a hardener flow sensor, and other options and accessories can be added anytime.
- Programmable flushing: Select flushing options specific to material needs.
- Mounting options: The system can be mounted to a wall and plumbed into an existing workspace or integrated into a pedestal stand and then bolted to the floor.
- Alarm warnings: The alarm system warns users of system errors and suggests possible solutions. Help screens provide troubleshooting information to resolve alarms.
- Modular design: Sub-assemblies like the color stack can be removed for maintenance and repair.

## 05.2 LP TECHNICAL SPECIFICATIONS

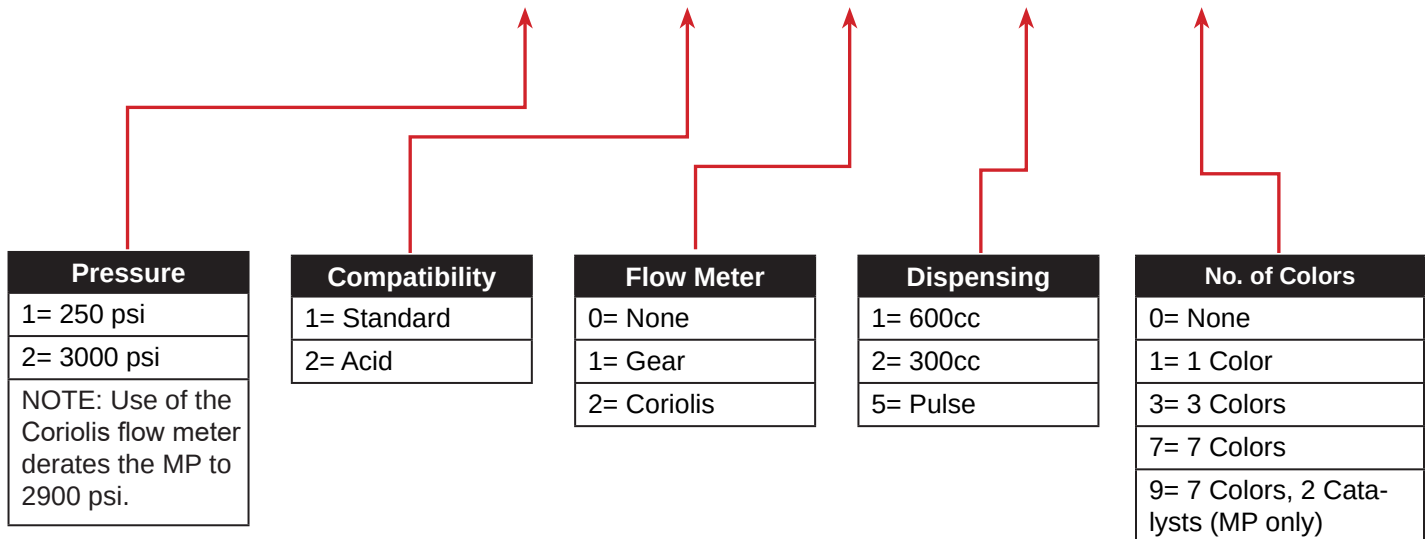
| Item                              | Details                                                                                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max working air pressure          | 105 psi (7.2 bar)                                                                                                                                             |
| Optimal working air pressure      | 75-105 psi (5.2-7.2 bar)                                                                                                                                      |
| Pressure rating                   | 250 psi (17.2 bar)                                                                                                                                            |
| Maximum dispense pump flow rate   | 10.1 or 20.3 fluid ounces/minute (300 cubic centimeters/minute or 600 cubic centimeters/minute)                                                               |
| Minimum dispense pump flow rate   | 0.07 or 0.7 fluid ounces/minute (2 cubic centimeters/minute or 20 cubic centimeters/minute)                                                                   |
| Component A flow meter range      | 1.3-64 fluid ounce/minute (10-1900 cubic centimeters/minute)                                                                                                  |
| Operating temperature range       | 32-122°F (0-50°C)                                                                                                                                             |
| System weight                     | 130-150 pounds (59-68 kilograms)                                                                                                                              |
| Component A flow rate             | 20-1900                                                                                                                                                       |
| Component B flow rate             | 2-600 cubic centimeters/minute                                                                                                                                |
| Total flow rate range             | 22-1900 cubic centimeters/minute                                                                                                                              |
| Max number of colors/resins       | 7                                                                                                                                                             |
| Max number of catalysts/hardeners | 1                                                                                                                                                             |
| Viscosity range of fluid          | 20-3000 centipoise                                                                                                                                            |
| Mixing ratio range                | 1:1-100:1                                                                                                                                                     |
| Ratio tolerance range             | Up to $\pm 1\%$                                                                                                                                               |
| Trigger response rate             | 200 milliseconds                                                                                                                                              |
| Isocyanate catalyst compatible    | Yes                                                                                                                                                           |
| Flow meters                       | Gear, Coriolis                                                                                                                                                |
| Wetted parts                      | 300 series stainless steel, PTFE, perfluoro elastomer, UHMW polyethylene                                                                                      |
| Communication protocol            | Ethernet/IP, Profinet, EtherCAT, ModbusTCP, DeviceNet                                                                                                         |
| Number of recipes/jobs            | 7                                                                                                                                                             |
| Number of guns per fluid panel    | 1 (option for 2)                                                                                                                                              |
| External power requirements       | 100-240 VAC, 50-60Hz. 2.45A/1.55A, 16 AWG power supply wire gauge.<br>Note: Main supply voltage fluctuations should not exceed $\pm 10\%$ of nominal voltage. |
| Environmental                     | Indoor use, pollution degree (2)                                                                                                                              |
| Installation category             | II                                                                                                                                                            |
| Max altitude                      | 6500 feet (2000 meters)                                                                                                                                       |
| Humidity                          | 80% relative humidity up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C), max 80% relative humidity non-condensing               |

## 05.3 MP TECHNICAL SPECIFICATIONS

| Item                              | Details                                                                                                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Max working air pressure          | 105 psi (7.2 bar)                                                                                                                                             |
| Optimal working air pressure      | 75-105 psi (5.2-7.2 bar)                                                                                                                                      |
| Pressure rating                   | 3000 psi (206.85 bar)                                                                                                                                         |
| Maximum pulse valve flow rate     | 64 fluid ounce/minute (1900 cubic centimeters/minute)                                                                                                         |
| Minimum pulse valve flow rate     | 0.34 fluid ounce/minute (10 cubic centimeters/minute)                                                                                                         |
| Component A flow meter range      | 0.68-64 fluid ounce/minute (20-1900 cubic centimeters/minute)                                                                                                 |
| Operating temperature range       | 32-122°F (0-50°C)                                                                                                                                             |
| System weight                     | 120-155 pounds (59-68 kilograms)                                                                                                                              |
| Component A flow rate             | 20-1900 cubic centimeters/minute                                                                                                                              |
| Component B flow rate             | 10-1900 cubic centimeters/minute                                                                                                                              |
| Total flow rate range             | 30-1900 cubic centimeters/minute                                                                                                                              |
| Max number of colors/resins       | 7                                                                                                                                                             |
| Max number of catalysts/hardeners | 2                                                                                                                                                             |
| Viscosity range of fluid          | 20-3000 centipoise                                                                                                                                            |
| Mixing ratio range                | 1:1-50:1                                                                                                                                                      |
| Ratio tolerance range             | Up to $\pm 1\%$                                                                                                                                               |
| Trigger response rate             | 200 milliseconds                                                                                                                                              |
| Isocyanate catalyst compatible    | Yes                                                                                                                                                           |
| Flow meters                       | Gear, Coriolis                                                                                                                                                |
| Wetted parts                      | 300 series stainless steel, PTFE, perfluoro elastomer, UHMW polyethylene                                                                                      |
| Communication protocol            | Ethernet/IP, Profinet, EtherCAT, ModbusTCP, DeviceNet                                                                                                         |
| Number of recipes/jobs            | 7                                                                                                                                                             |
| Number of guns per fluid panel    | 1                                                                                                                                                             |
| External power requirements       | 100-240 VAC, 50-60Hz. 2.45A/1.55A, 16 AWG power supply wire gauge.<br>Note: Main supply voltage fluctuations should not exceed $\pm 10\%$ of nominal voltage. |
| Environmental                     | Indoor use, pollution degree (2)                                                                                                                              |
| Installation category             | II                                                                                                                                                            |
| Max altitude                      | 6500 feet (2000 meters)                                                                                                                                       |
| Humidity                          | 80% relative humidity up to 88°F (31°C), decreasing linearly to 50% relative humidity at 104°F (40°C), max 80% relative humidity non-condensing               |

## 05.4 COMPLETE SYSTEM PART NUMBERING

# RM2 - # # # # #

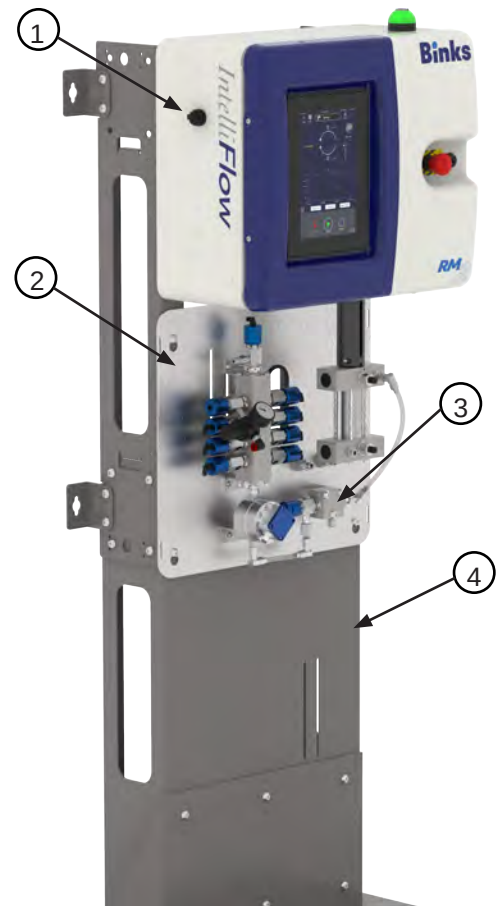


### 05.5 LP VS. MP MODELS

The MP uses a pulse valve assembly to dispense mixed material, whereas the LP uses a dispense pump. The MP can accommodate higher flow rates than the LP.

### 05.6 SYSTEM COMPONENTS

1. Control enclosure
2. Fluid control module
3. Mix block
4. Floor stand (recommended accessory)



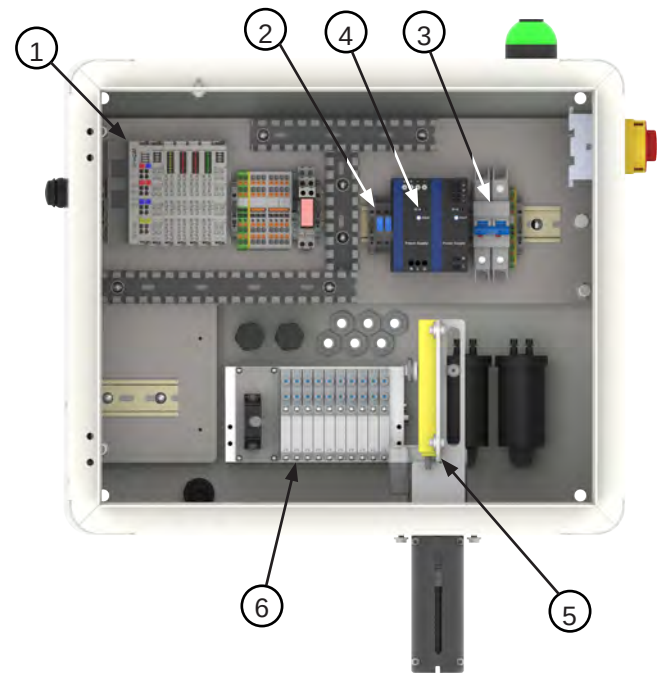
#### 05.6.1 CONTROL ENCLOSURE EXTERNAL COMPONENTS

1. Status light
2. Main power disconnect switch
3. Main power entry
4. Human-machine interface (HMI)
5. Emergency stop button
6. Panel opening latch



### 05.6.2 CONTROL ENCLOSURE INTERNAL COMPONENTS

1. I/O block
2. 24VDC circuit breakers
3. Main power circuit breaker
4. Power supply
5. Linear actuator
6. Solenoid stack



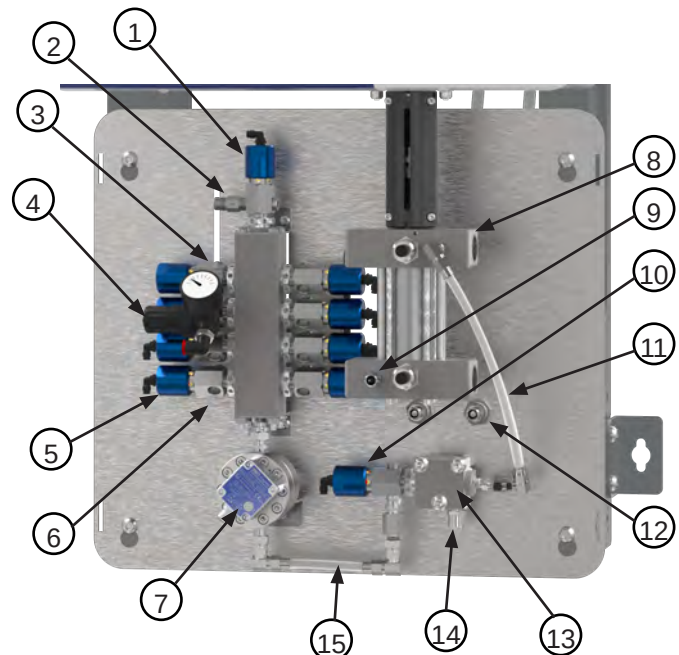
### 05.6.3 LP FLUID CONTROL MODULE

1. Solvent flush valve
2. Solvent input connection
3. Air push valve (behind air regulator)
4. Air regulator
5. Component "A" color change valve (CCV)
6. Component "A" input connection

#### **NOTICE**

Check valves are not included on CCVs and must be supplied and installed by the customer to prevent backflow.

7. Component "A" flow meter
8. Component "B" dispense pump
9. Component "B" input connection
10. Resin enable valve
11. Component "B" connection to mix block
12. Air connections (behind dispense pump)
13. Mix block
14. Static mix tube connection
15. Component "A" connection to mix block



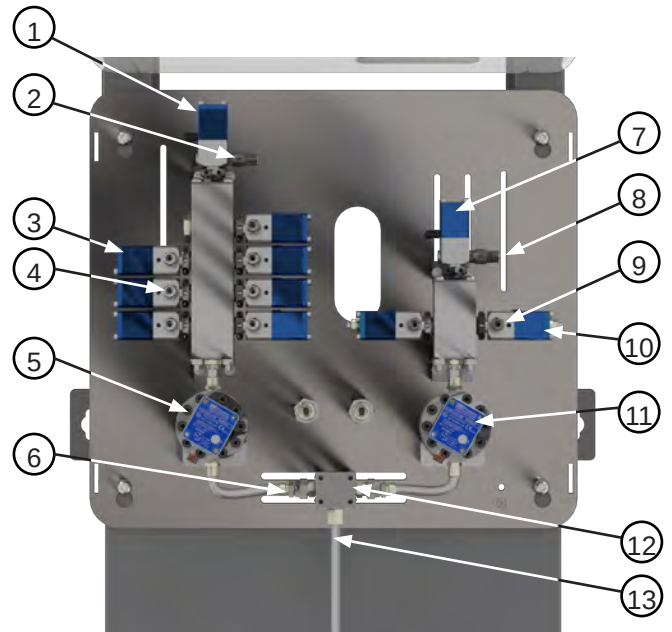
### 05.6.4 MP FLUID CONTROL

1. Solvent flush valve
2. Solvent input connection
3. Component "A" CCV
4. Component "A" input connection

#### NOTICE

Check valves are not included on CCVs and must be supplied and installed by the customer to prevent backflow.

5. Component "A" flow meter
6. Connection to mix block
7. Component "B" solvent valve
8. Component "B" solvent input connection
9. Component "B" input connection
10. Pulse valve
11. Component "B" flow meter
12. Mix block
13. Static mix tube



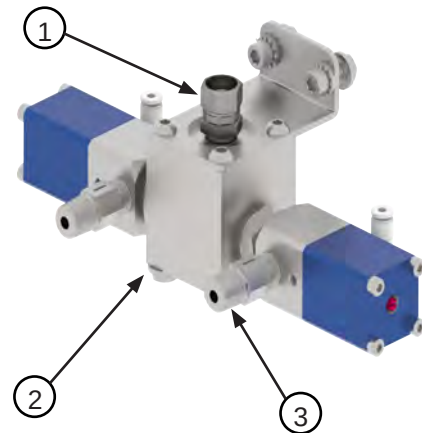
### 05.6.5 2-GUN MANIFOLD

Both the LP and MP can accommodate a 2-gun manifold.

When two guns are connected to the machine, the manifold allows the operator to choose which gun(s) to load. This prevents the buildup of hardened material in unused guns.

The 2-gun manifold configuration affects the setup, loading, spraying, and flushing processes.

1. Static mix tube connection
2. 2-gun manifold
3. Gun connection

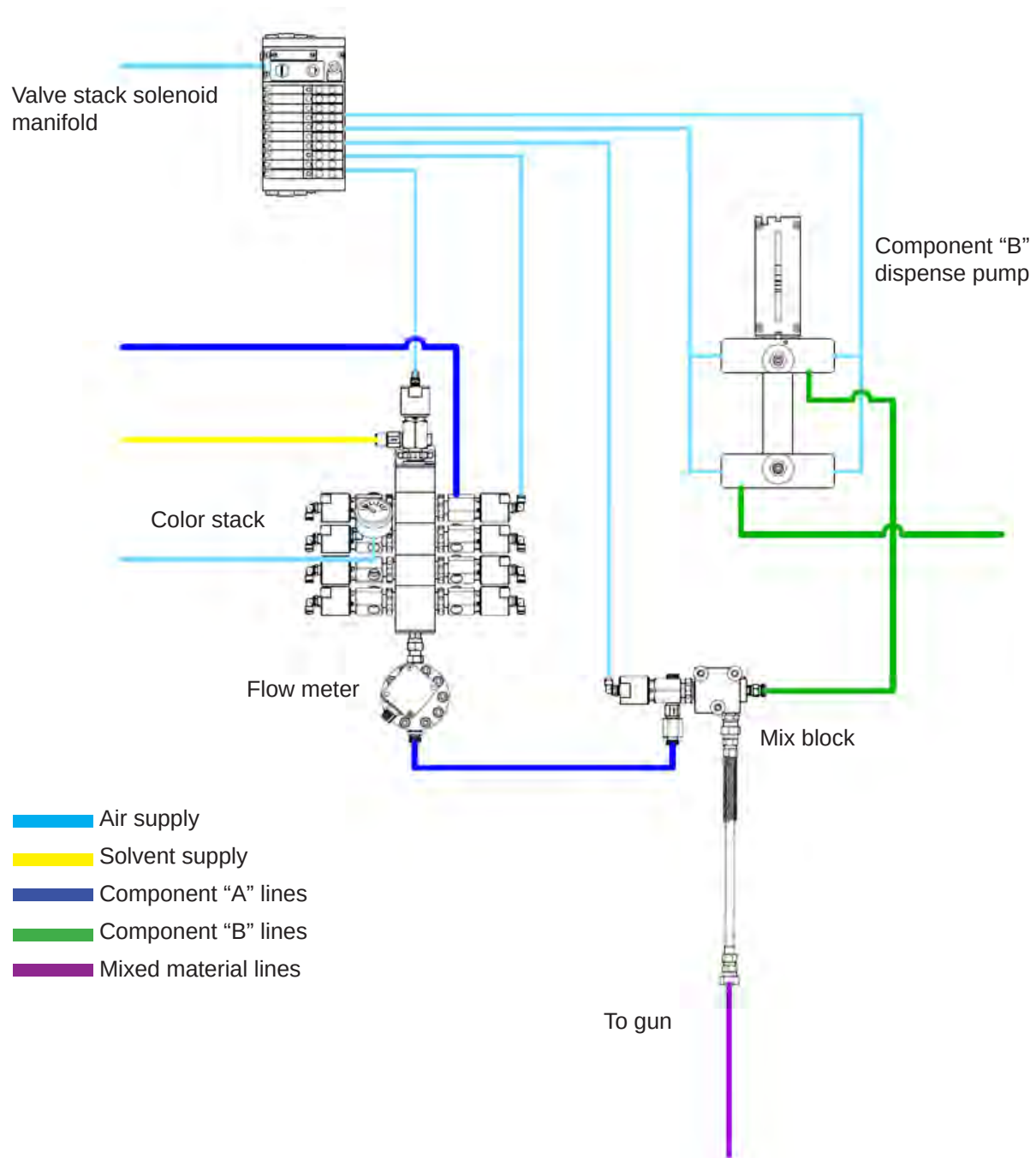


**05.6.6 REAR COMPONENTS**

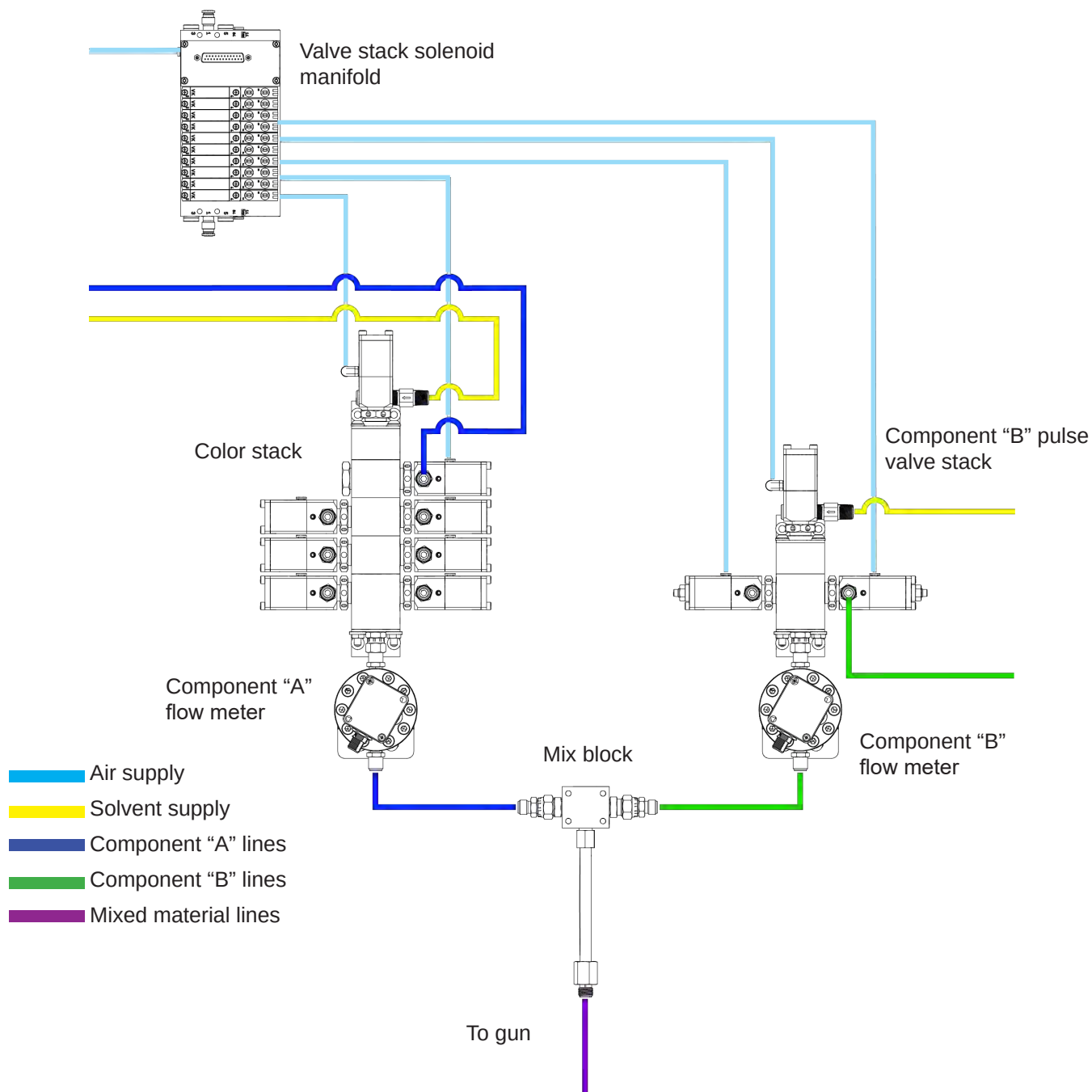
1. Air manifold
2. Atomization air cut off valves
3. Gun flush box inputs
4. Solenoid manifold



## 05.7 LP SYSTEM CONFIGURATION



## 05.8 MP SYSTEM CONFIGURATION

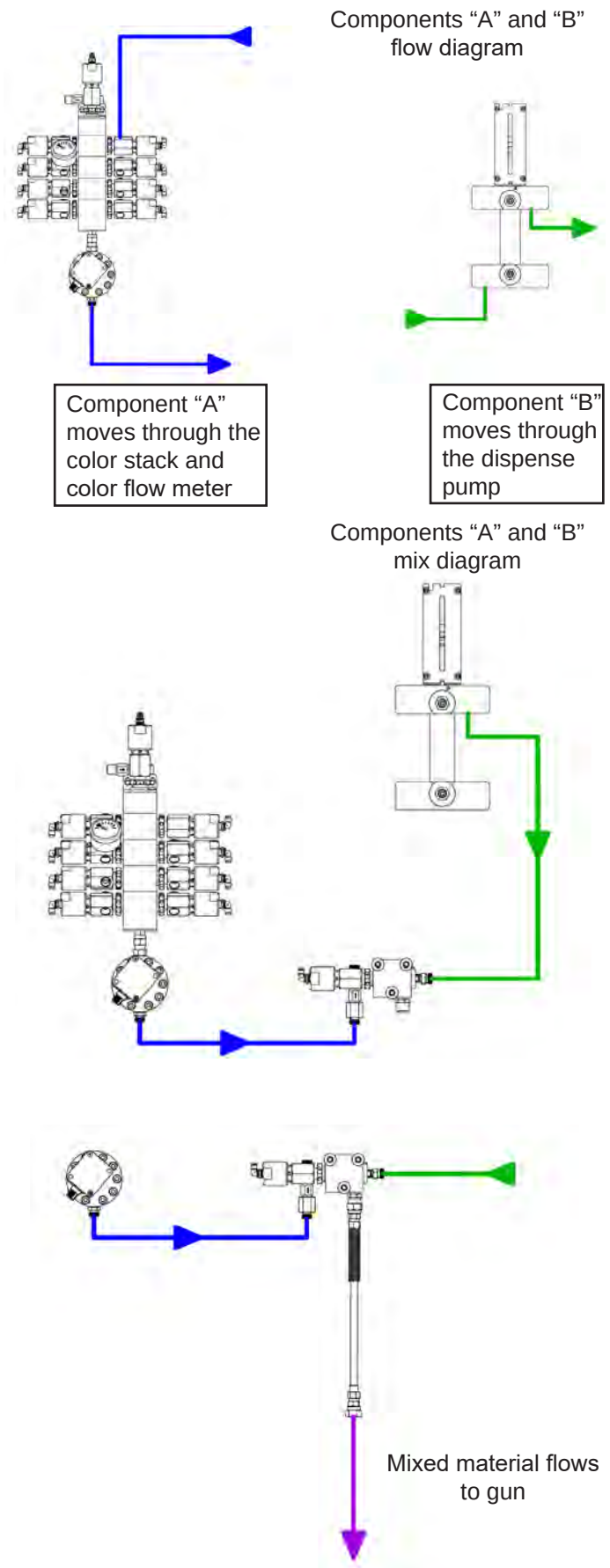


## 05.9 THEORY OF OPERATION

The RM2 precisely measures and controls up to seven types of component “A” (e.g., resin) and up to two types of component “B” (e.g., catalyst). The components are mixed in the proper ratio to achieve an even spray and delivered to the gun for final application.

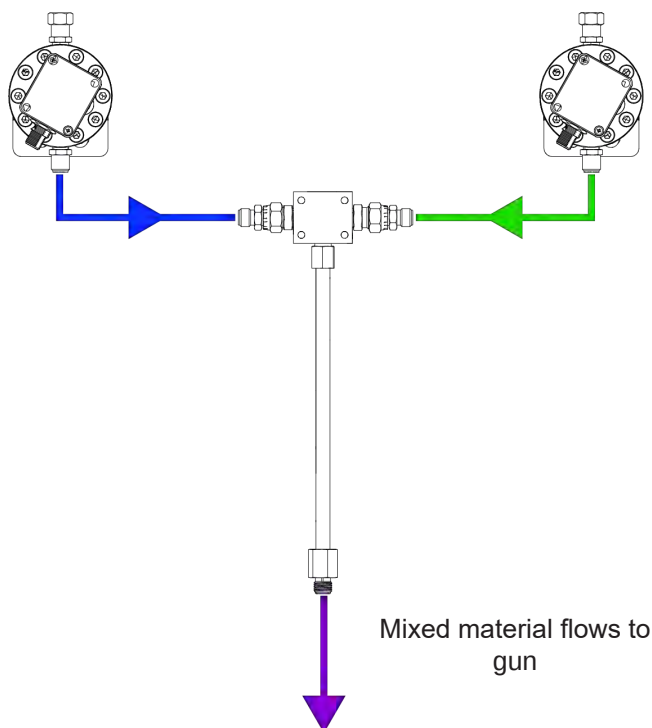
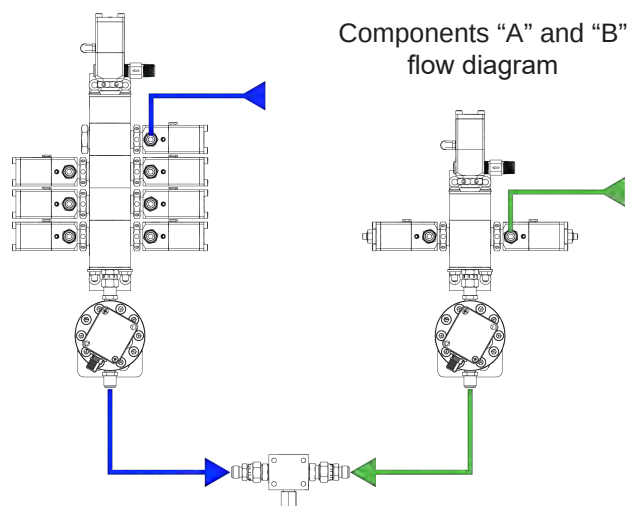
### 05.9.1 LP SEQUENCE OF OPERATION

1. Component “A” feeds from storage containers through the hoses toward the color stack, which controls the flow.
2. Component “B” feeds from storage containers through hoses to the component “B” dispense pump, which controls the flow.
3. Air flow switches in the control enclosure sense when the operator has opened the gun and feeds that open signal to the system controller.
4. The valves for components “A” and “B” are normally closed. When flow is needed, the system controller opens the component “A” color change valve and allows flow to the flow meter.
5. The flow meter signals the control panel with the flow rate of component “A,” which sends a proportional signal to the component “B” dispense pump.
6. The component “B” dispense pump uses the proportional signal (set to the user set point ratio) to allow component “B” to flow to the mix block.
7. Component “A” is introduced in the mix block through an enable valve. Component “B” is introduced to the mix block through an injector valve.
8. The mixed material flows to the gun.



### 05.9.2 MP SEQUENCE OF OPERATION

1. Component “A” feeds from storage containers through the hoses toward the color stack, which controls the flow.
2. Component “B” feeds from storage containers through hoses to the component “B” pulse valve, which controls the flow. Some models have two pulse valves.
3. The MP can be configured to operate in two different modes: air flow switches or airless spray.
4. During air flow switch operation:
  - a. Air flow switches in the control enclosure sense when the operator has opened the gun and feeds that open signal to the system controller.
  - b. The valves for components “A” and “B” are normally closed. When flow is needed, the system controller opens the component “A” color change valve and allows flow to the component “A” flow meter.
5. During airless spray operation:
  - a. The color change valve is left open at all times.
  - b. The component “A” flow meter detects when the operator triggers the gun.
6. The component “A” flow meter signals the system controller with component “A” flow rate, which sends a proportional signal to the pulse valve. The proportional signal varies the amount of time the pulse valve is open, which determines how much material is able to flow.
7. The pulse valve uses the proportional signal (set to the user setpoint ratio) to allow component “B” to flow to the mix block.
8. Component “A” is introduced in the mix block through an enable valve. Component “B” is introduced to the mix block through an injector valve.
9. Mixed material flows to the gun.



## 06 INSTALLATION

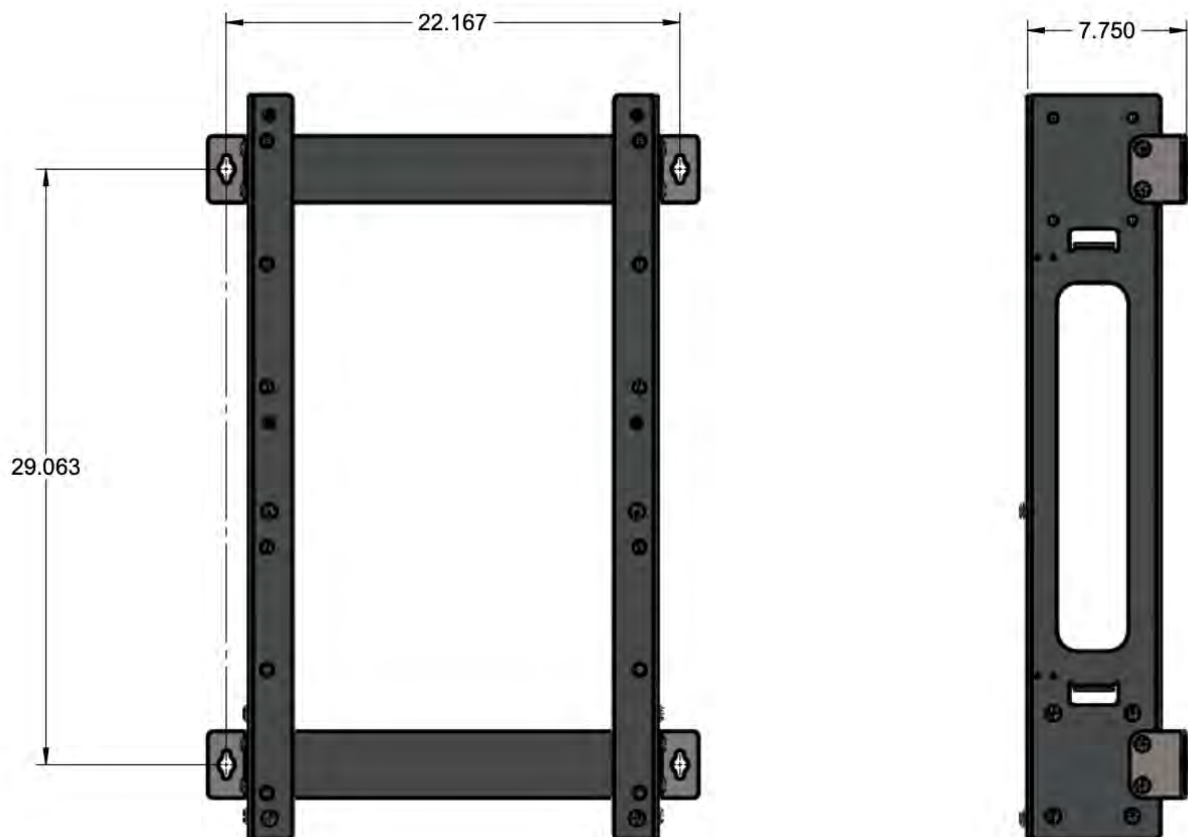
Complete all installation steps before operating the RM2.

### 06.1 WALL MOUNT INSTRUCTIONS (OPTIONAL)

Requirements:

- Ensure the wall can support the weight of the complete system, including air and fluid hoses and other connected devices. At a minimum, the wall must support 200 pounds (91 kilograms).
- Ensure clearance for electrical and fluid connections to the system.
- Ensure a full door swing radius if installing near a door.

Bolt the mast to a wall or panel using at least four 3/8 inch lag or cap screws with flat washers.

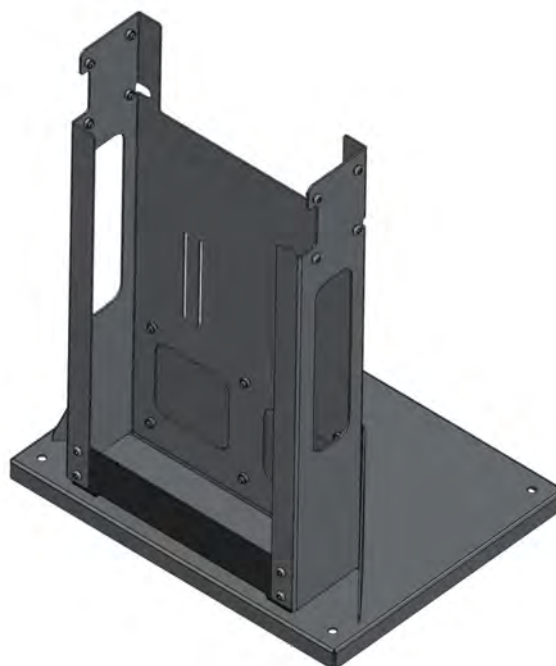
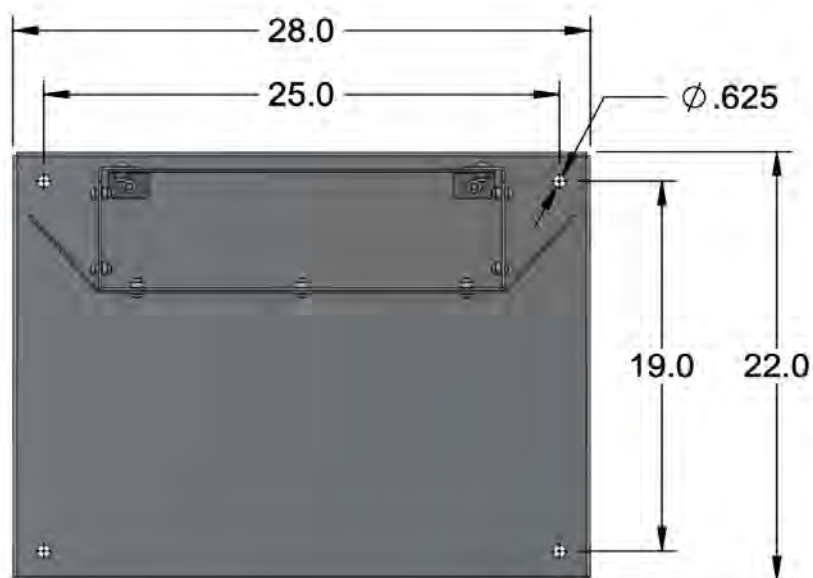


## 06.2 FLOOR STAND INSTRUCTIONS (OPTIONAL)

Requires floor stand kit 240-5199.

Installation:

1. Secure the components using four 1/2 inch (12 millimeter) or 9/16 inch (14 millimeter) anchors.
2. Bolt stand to floor.



### 06.3 ELECTRICAL

The RM2 can accept either 120VAC or 240VAC as a power source. The internal 24VDC power supply automatically detects the input voltage and produces control power accordingly.

#### **⚠ WARNING**

Before making electrical, air, and fluid connections, be sure to understand and verify all requirements for installation, including but not limited to: electrical codes, OSHA and NFPA requirements, and all applicable local codes and ordinances.

Read and understand all operating manuals for connected equipment. Do not supply the machine with higher fluid or air pressures than recommended in the technical specifications section of this manual.

#### **⚠ WARNING**

Control enclosure cannot be placed in a hazardous location. Do not use equipment not approved for hazardous locations. Do not modify system equipment.

#### **⚠ WARNING**

To maintain non-hazardous classification of this equipment, the dispense pump and fluid panel components and assemblies must be monitored for leaks and serviced regularly to prevent leaks from occurring. If a leak is discovered, the system must be immediately shut down, de-energized, and repaired to correct the problem.

#### **⚠ WARNING**

The equipment is only to be used in the manner specified. If not used in the specified manner the protection provided by the equipment may be impaired.

#### **⚠ WARNING**

Do not replace the detachable main supply power cord with inadequately rated cords.

#### **⚠ WARNING**

This equipment is intended to be installed outside of classified hazardous areas. There are accessories for this equipment (sold separately) to allow devices such as flow meters to be installed within the hazardous zone; this should only be done following the instructions provided with those accessories.

#### **NOTICE**

Any conductive parts within 8.2 feet (2.5 meters) of this equipment (ladders, rails, fences, etc.) must be bonded appropriately to ground.

### 06.3.1 ELECTRICAL CONNECTION

1. Locate the main power entry plug (1) in the upper right section of the control enclosure.
2. Power is supplied through standard IEC C13 power cords. A selection of cords is included with the machine.
3. Select the appropriate cord for the receptacles and plug the cord into the main power entry.
4. Plug the other end of the cord into the power receptacle.



### 06.4 PNEUMATICS

For convenience, all necessary air input connections are centralized in a single manifold, allowing for the management of incoming air pressure in one place. Most air connections are completed at the factory before shipping.

Atomization air is only available during the spraying mode and is automatically disabled during priming or color changes. The atomization air cut-off valves are automatic unless the system is equipped with gun flush boxes. For systems equipped with flush boxes, the atomization air automatically turns off when users place the gun in the box and close the lid.

Depending on your application, several air connections must be completed.

### NOTICE

Always use clean, dry air to operate the machine. The maximum air input pressure is 105 psi (7 bar).

### 06.4.1 MAIN AIR CONNECTION

1. Locate the air manifold inlet connection at the top of the system chassis, to the right of the main disconnect switch and power cord.

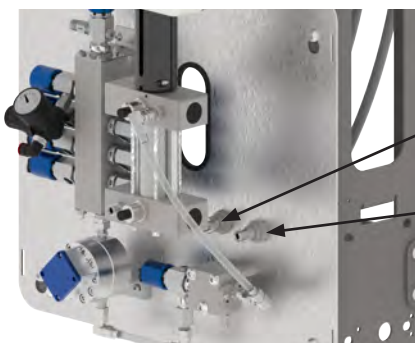


Air manifold inlet connection

2. Attach a 3/8 inch main air line with a 1/4 inch NPS swivel connection to the main air inlet.

### 06.5 LP GUN INPUT CONNECTOR

1. Attach a 3/8 inch main air line to the front panel connector for each gun. If using a single gun, use the connector on the left.



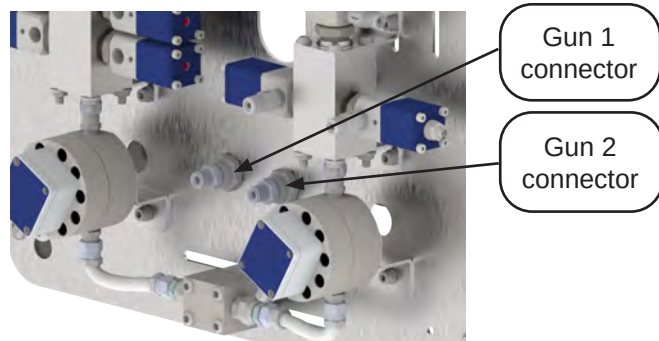
Gun 1 connector

Gun 2 connector

2. Set atomization air pressure at 20-75 psi (1.3-5 bar).

## 06.6 MP GUN INPUT CONNECTOR

1. Attach a 3/8 inch main air line to the front panel connector for each gun. If using a single gun, use the connector on the left.



2. Set atomization air pressure at 20-75 psi (1.3-5 bar).

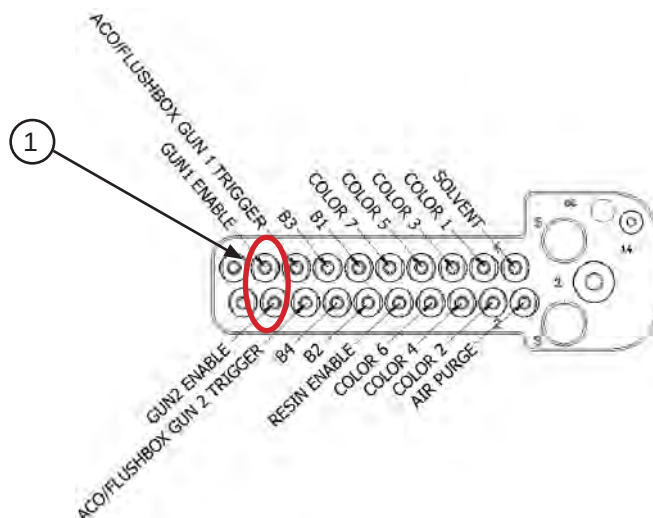
## 06.7 GUN FLUSH BOX CONNECTIONS

If the system is equipped with an gun flush box:

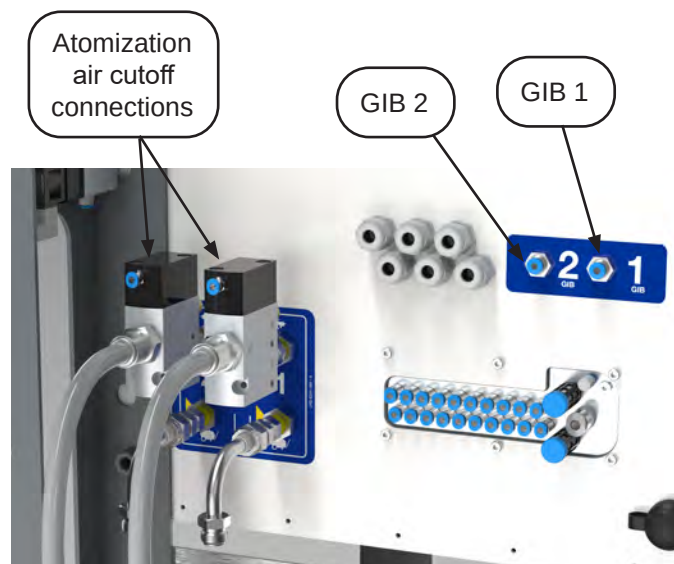
1. Connect the regulated air supply to the flush box air connection on the bottom of the box. Customers' gun flush boxes will have labels etched into the metal for each connection.
2. Connect the flush box trigger signals.
  - a. Connect the trigger for the first flush box to the **ACO** gun port on the solenoid manifold.



- b. Connect the trigger for the second gun flush box to **ACO GUN 2** port (1) on the solenoid manifold.



3. Connect the gun-in-box (GIB) signal to GIB 1 and GIB 2 pressure switch inputs.
4. Connect the air cutoff signals from the flush box to the atomization air cutoff pilot signals.



## 06.8 MATERIALS AND SOLVENT

Components “A” and “B” may be supplied using pressure pots or pumps. Fluid regulators are strongly recommended if using a pump.

Avoid entrained air. Also, fluid supplied to the system must be free of contaminants and solid particles that may clog the pump or other downstream components. Typical filtration for paint resins is 100 mesh (150 microns) or smaller.

Contact your Binks representative for information regarding fluid supply and conditioning equipment.

Use PTFE tape or liquid sealant on tapered pipe threads.

### 06.8.1 LP MATERIAL AND SOLVENT CONNECTIONS

#### NOTICE

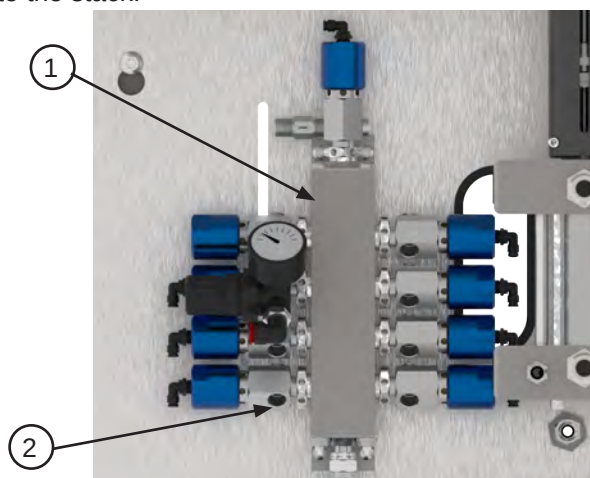
Maintain the inlet fluid pressure to the dispense pump at 5 to 10% above the component “A” inlet pressure. This pressure difference ensures proper operation of the dispense pump.

#### NOTICE

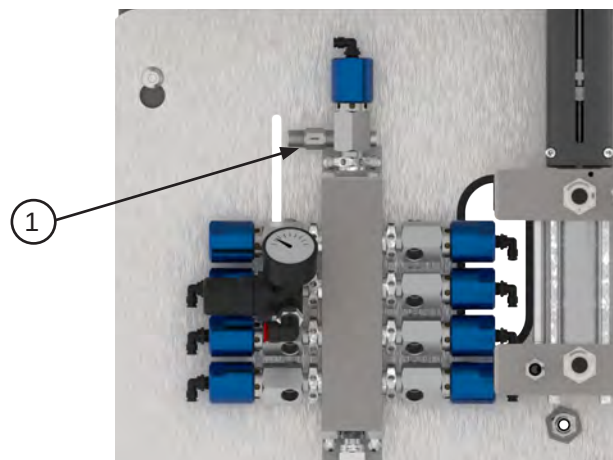
Each color change valve (CCV) has two inlets, one of which comes plugged from the factory. When using a paint circulating system, remove the plug from the second port to allow paint to pass through the CCV.

Connect material and solvent to the LP as follows:

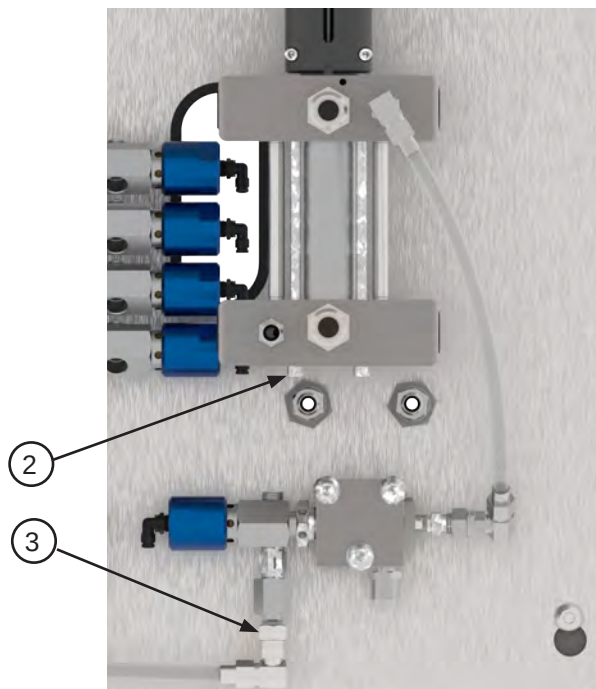
1. Locate the color stack (1) on the fluid control module.
2. Locate the component “A” input connections (2) on each valve of the stack.
3. Connect component “A” supplies to component “A” input connections according to your desired mapping. Be careful not to mix different kinds of component “A” into the stack.



4. Connect your solvent supply to the solvent input valve on the top of the color stack using the input connection (1).



5. Connect component “B” material to the component “B” input connection (2).



6. Connect the mix block to the static mixing tube (3).

#### NOTICE

The static mixer assembly (240-3122) connects to the mix block outlet via a 3/8 inch NPS male thread.

7. Connect the gun hose to the bottom connection of the static mixing tube.

### 06.8.2 MP MATERIAL AND SOLVENT CONNECTIONS

#### NOTICE

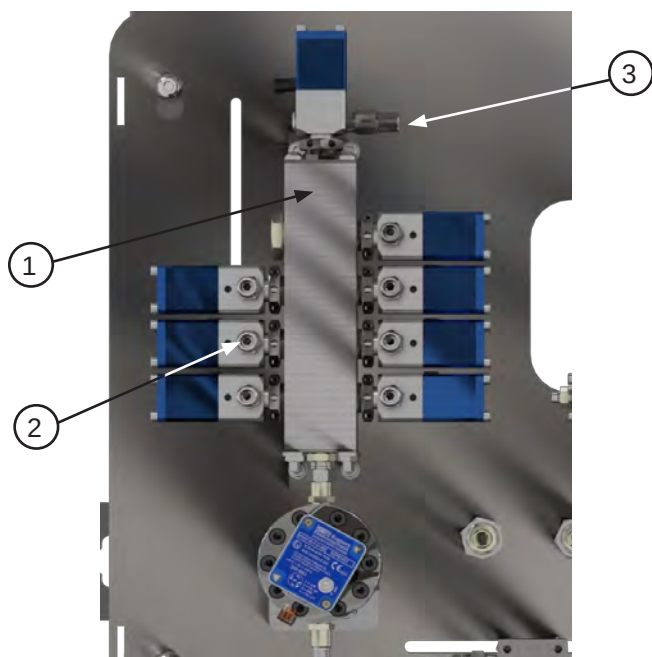
Maintain the inlet fluid pressure to the dispense pump at 5 to 10% above the component “A” inlet pressure. This pressure difference ensures proper operation of the dispense pump.

#### NOTICE

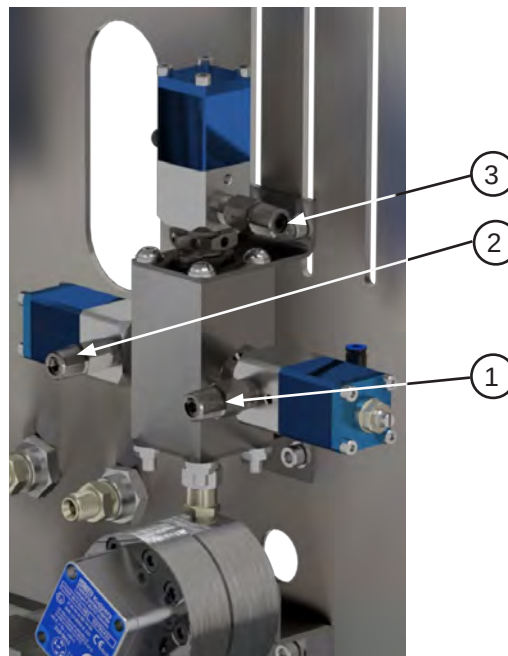
Each color change valve (CCV) has two inlets, one of which comes plugged from the factory. When using a paint circulating system, remove the plug from the second port to allow paint to pass through the CCV.

Connect material and solvent to the MP as follows:

1. Locate the color stack (1) on the fluid control module.
2. Locate the component “A” input connections (2) on each valve of the color stack.
3. Connect component “A” supplies to input connections according to your desired mapping. Be careful not to mix different kinds of materials into the stack.
4. Connect your solvent supply to the input valve on top of the color stack using the input connection (3).



5. If using a single material for component “B,” connect the material supply to the first component “B” input connection (1).



6. If using more than one material for component “B:”
  - a. Connect the first material supply to the first input connection (1).
  - b. Connect the second material supply to the second input connection (2).
7. Connect the component “B” solvent hose to the solvent pulse valve connection (3).

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## 07 SETUP

### 07.1 POWERING UP THE SYSTEM

Before powering up the system, ensure the main power has been installed correctly. For more details, see 06.3 Electrical.

Both the RM2 LP and MP follow the same power-up procedure:

- On the right side of the control panel enclosure, turn the rotary main disconnect switch (1) clockwise.
  - The system will initiate a boot-up sequence.
  - When the system is ready, a button will be shown on the touchscreen to access the main menu.
- Once the machine is initialized, press **Main Menu** on the touchscreen to access the main menu.



### 07.2 NAVIGATION BAR

The navigation bar will be visible in the upper section of the screen regardless of the menu selection.

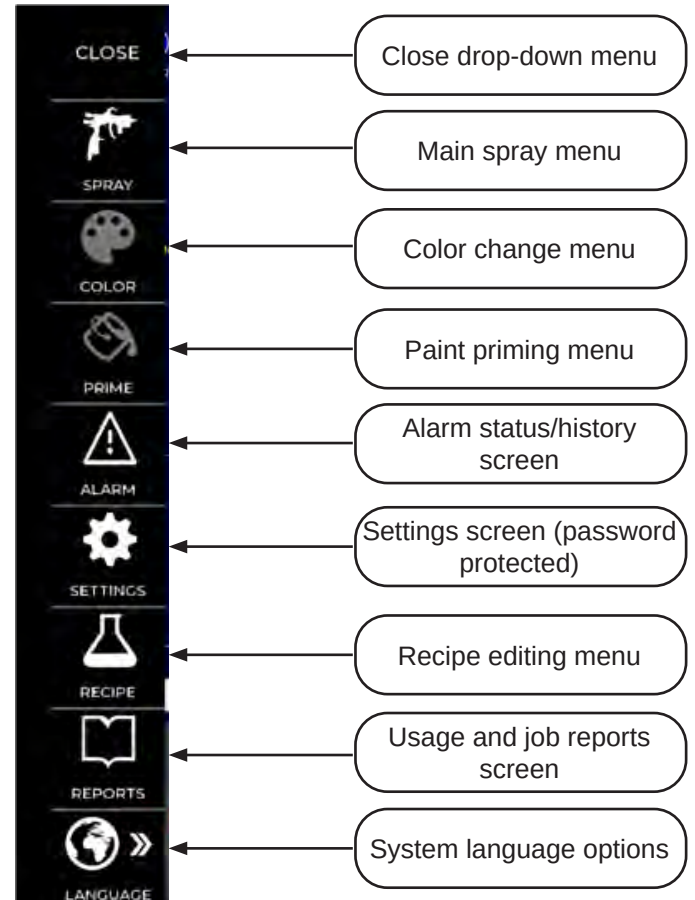
The current operating mode indicates what the machine is currently doing. Select the current operating mode button to navigate back to the screen corresponding to the machine's current mode of operation.



- Press **MENU** (2) to open a drop-down menu to access other menus.
- Press **USER** (3) to open a dialog menu displaying the current user. This menu allows users to log out, change passwords, and manage users.
- Press **ALARM** (4) to open the alarm status/history menu.

### 07.3 DROP-DOWN MENU

The graphic below shows options available on the drop-down menu. The administrator may limit access to specific actions for some users. Unavailable functions are grayed out.



## 07.4 LANGUAGE SELECTION

Select **LANGUAGE** to open a pop-up box with ten different languages. Users can choose their preferred language from these options.



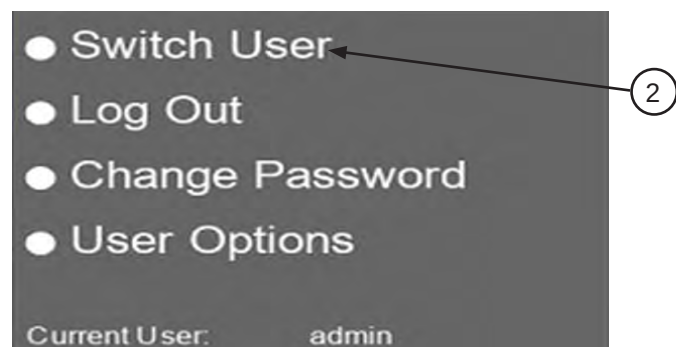
## 07.5 LOGGING IN

Operators must be logged in as an administrator for some functions, such as making changes to system settings. To log in as an administrator:

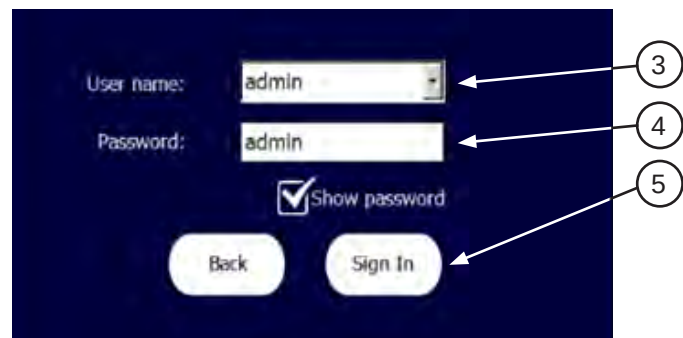
1. Select **USER** (1) in the navigation bar.



2. Select **Switch User** (2).



3. Select **admin** from the username box (3).
4. Enter the password: admin (4).
5. Select **Sign In** (5).



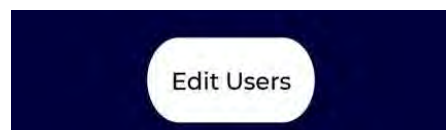
## 07.6 USER MANAGEMENT

The RM2 allows administrators to add, edit, and delete users and modify user permissions. Operators must be signed in to the administrator account to modify user options.

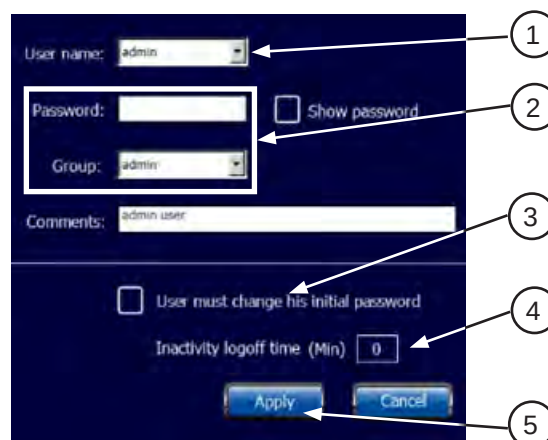
1. To access the user options menu:
  - a. Navigate to **USER > User Options** (1).
  - b. This opens up a new pop-up window with a menu for user options.



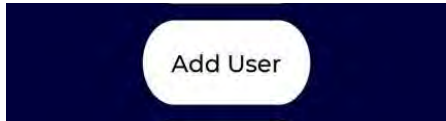
2. To edit a user:
  - a. Select **Edit Users** from the user options menu



- b. Select the user you want to edit (1).
- c. Modify the user's parameters. This includes the user-group assignment (2).
- d. Select whether the user must change their initial password (3).
- e. Enter a value for how long the user will stay logged in despite inactivity (4).
- f. Select **Apply** (5).



3. The operator interface supports up to fifty (50) individual users. To add a user:
- Select **Add User** from the user options menu.

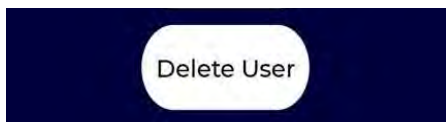


- Fill in the parameters, including user name, group assignment, and initial password (6).
- Select whether the user must change their initial password (7).
- Enter a value for how long the user will stay logged in despite inactivity (8).
- Select **Add** (9).

Form fields and callouts:

- 6: User name: user1
- 7: Password: (input field)
- 8: ☐ Show password
- 9: Group: admin
- 10: Comments: (text area)
- 11: ☐ User must change his initial password
- 12: Inactivity logoff time (Min) 0
- 13: Add button
- 14: Cancel button

4. To delete a user:
- Select **Delete User** from the user options menu.



- Select the **User name** (10) and **Group** (11) from the drop-down lists.
- Select **Delete** (12).

Form fields and callouts:

- 10: User name: admin
- 11: Group: admin
- 12: Delete button
- 13: Cancel button

5. To modify user permissions:

- Select **User Permissions** from the user options menu.



- Select boxes to assign users the ability to edit recipes and access the setup menu depending on what level they are given (13).

Administrators automatically have access to all permissions.

Page: UserPermissions

Serial #: [blank] Jan 05 2022 15:42 PM

MENU USER Spray ALARM

Assign Permissions to Users. Note: Admin has all permissions.

| User Level   | Guest                               | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        | 8                        | 9                        |
|--------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Edit Recipes | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Setup Menu   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

13

## 07.7 SYSTEM SETTINGS

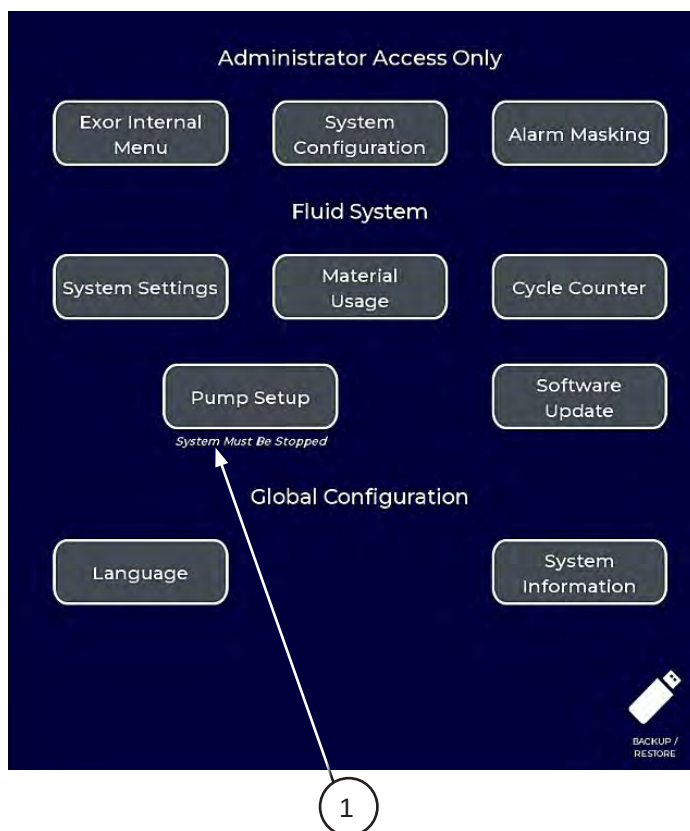
The settings menu is password protected. Users must login to access the options within the menu.

To access the settings menu, select **MENU** to open the drop-down menu, and then select **SETTINGS**.

### 07.7.1 SETTINGS SCREEN

Viewing or changing settings requires user permissions, which vary between normal users and administrators.

The graphics shows the settings screen with administrator access for the LP. The MP settings screen will not include **Pump Setup** (1).



### 07.7.3 SYSTEM CONFIGURATION

Selecting **System Configuration** (1) opens the system configuration menu. Use this menu to set the machine up per the specifications of your system.



### NOTICE

It is important that the parameters in this menu accurately depict the installed hardware. System behavior is dictated by these settings, and incorrect settings can cause damage to the equipment. Configuring the system to match the features specific to your RM2 is essential.

### 07.7.2 EXOR INTERNAL MENU

The **Exor Internal Menu** opens a drop-down dialog allowing access to the root settings for the Exor operator interface. The only operations necessary to operate the system include the following:

- Setting the IP addresses for the Ethernet interfaces.
- Setting the date and time displayed on the panel.
- Connecting the system to the Corvina Cloud app.

For more information, consult the user manual for the Exor EX710 operator interface.

### 07.7.3.1 LP SYSTEM CONFIGURATION

1. **System Type:** Select the system with the part numbering that matches your machine.
2. **Cylinder Volume:** 300cc or 600cc pumps are available.
3. **Configured Colors:** Select the maximum number of colors available on your machine.
4. **"A" (Resin) Flow Meter:** Select the flow meter type that has been installed. Standard installations will use **Gear ("A"/"B")** (quadrature) flow meters, but **Coriolis** meters are also an option.
5. **Solvent Flow Meter:** If installed, choose between **Gear ("A"/"B")** or **Gear ("A")** (single-channel) flow meter.
6. **Gun Flush Boxes:** Select the correct option for the number of gun flush boxes installed on your machine: **N/A** for zero, **Single** for one, and **Dual** for two.
7. **Gun 2 Enable:** Select if a second gun is installed on your machine. Checking this box makes selections for the second gun available throughout the user interface. Note that a two-gun manifold is not required to operate two guns.
8. **Remote CC Selector:** Indicates that a remote (in-booth) color change control box has been installed.
9. **Enable Cloud:** Select to enable cloud access.
10. **Two Gun Manifold Installed:** Select if you have the two-gun manifold option installed. The two-gun manifold enables the user to shut off the flow of mixed material to unused guns so the material doesn't flow into a gun unless needed. This allows for less waste and shorter purge times.
11. **Flow Sensor (145 Max Pressure):** This option indicates that a material flow sensor is used to confirm material flow through the pump. It limits the maximum pressure to 145 psi.
12. **Resin Enable Valve:** Select if your machine has the resin enable valve option.

The screenshot shows the 'System Configuration' window with the following settings and callouts:

- 1. System Type: RM2 - 1xxxx
- 2. Cylinder Volume: ☐ 300cc, ☒ 600cc
- 3. Configured Colors: ☐ 1, ☐ 2, ☐ 3, ☐ 4, ☐ 5, ☐ 6, ☒ 7
- 4. A (Resin) Flow Meter: ☒ Gear (A/B), ☐ Coriolis
- 5. Solvent Flow Meter: ☒ N/A, ☐ Gear (A/B), ☐ Gear (A)
- 6. Gun Flush Boxes: ☒ N/A, ☐ Single, ☐ Dual
- 7. Gun 2 Enable: ☒
- 8. Remote CC Selector: ☐
- 9. Enable Cloud: ☒
- 10. Two Gun Manifold Installed: ☒
- 11. Flow Sensor (145 Max Pressure): ☒
- 12. Resin Enable Valve: ☒

### 07.7.3.2 MP SYSTEM CONFIGURATION

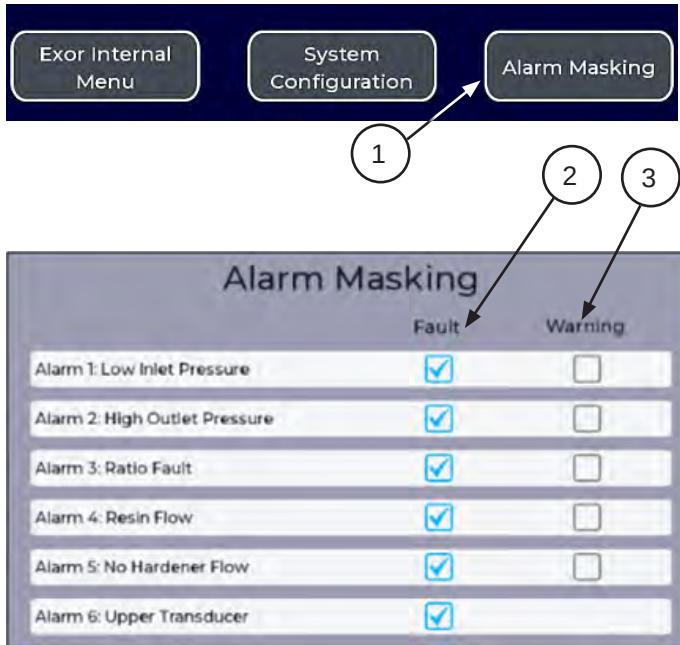
1. **System Type:** Select the system with the part numbering that matches your machine.
2. **Pulse Valve:** Select the number of pulse valves installed on your machine.
3. **Configured Colors:** Select the maximum number of colors available on your machine.
4. **"A" (Resin) Flow Meter:** Select the flow meter type that has been installed. Standard installations will use **Gear ("A"/"B")** (quadrature) flow meters, but **Coriolis** meters are also an option.
5. **"B" (Hardener) Flow Meter:** Select the flow meter type that has been installed. Standard installations will use **Gear ("A"/"B")** flow meters, but **Coriolis** meters are also an option.
6. **Solvent Flow Meter:** If installed, choose between **Gear ("A"/"B")** or **Gear "A"** (single-channel) flow meter.
7. **Gun Flush Boxes:** Select the correct option for the number of gun flush boxes installed on your machine: **N/A** for zero, **Single** for one, and **Dual** for two.
8. **Gun 2 Enable:** Select if a second gun is installed on your machine. Checking this box makes selections for the second gun available throughout the user interface. Note that a two-gun manifold is not required to operate two guns.
9. **Remote CC Selector:** Indicates that a remote (in-booth) color change control box has been installed.
10. **Enable Cloud:** Select to enable cloud access.
11. **Two Gun Manifold Installed:** Select if you have the two-gun manifold option installed. The two-gun manifold enables the user to shut off the flow of mixed material to unused guns so the material doesn't flow into a gun unless needed. This allows for less waste and shorter purge times.
12. **Air Flush:** Toggle to enable or disable the air flush.
13. **Atomizing Air:** Select if you are using air-assisted guns. Leave unselected for airless spraying.

The screenshot shows the 'System Configuration' window with the following settings indicated by callouts:

- 1. System Type: RM2 - 2xxxx
- 2. Pulse Valves: ☐ 1, ☒ 2
- 3. Configured Colors: ☒ 1, ☐ 2, ☐ 3, ☐ 4, ☐ 5, ☐ 6, ☐ 7
- 4. A (Resin) Flow Meter: ☐ Gear (A/B), ☒ Coriolis
- 5. B (Hardener) Flow Meter: ☒ Gear (A/B), ☐ Coriolis
- 6. Solvent Flow Meter: ☒ N/A, ☐ Gear (A/B), ☐ Gear (A)
- 7. Gun Flush Boxes: ☒ N/A, ☐ Single, ☐ Dual
- 8. Gun 2 Enable: ☐
- 9. Remote CC Selector: ☒
- 10. Enable Cloud: ☒
- 11. Two Gun Manifold Installed: ☐
- 12. Air Flush: ☐
- 13. Atomizing Air: ☐

### 07.7.4 ALARM MASKING

Select **Alarm Masking** (1) to change whether alarms are treated as a **Fault** (2) or a **Warning** (3). Faults shut down system operation, whereas warnings display an alarm but do not cause a system shutdown.



### NOTICE

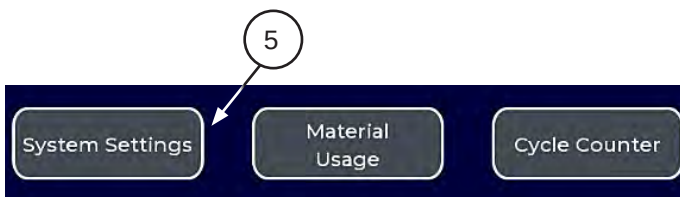
Some alarms are fixed to fault. These are necessary to shut down the system to protect the equipment or personnel.

The LP and MP have different alarms available for masking. For the LP, select **Alarm 17-32** (4) at the bottom of the screen to access additional system alarms.

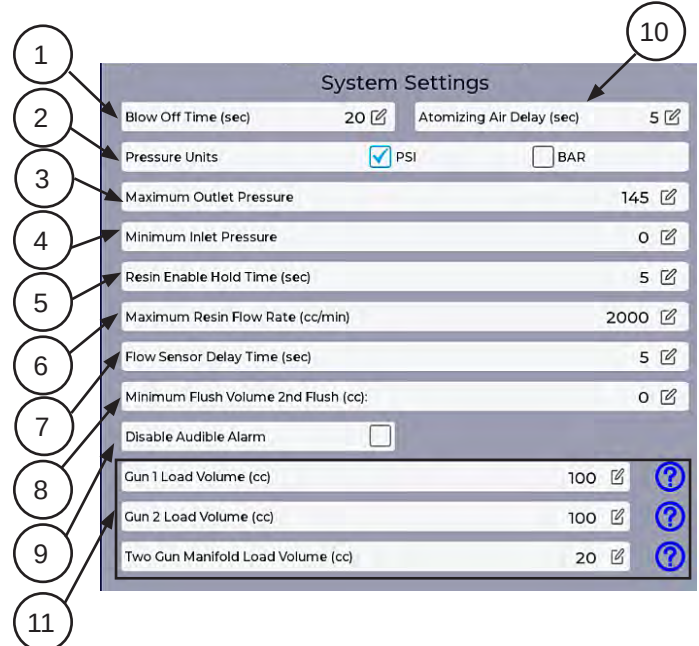


### 07.7.5 SYSTEM SETTINGS

Select **System Settings** (5) from the settings screen to modify the system settings according to your machine's



### 07.7.5.1 LP SYSTEM SETTINGS



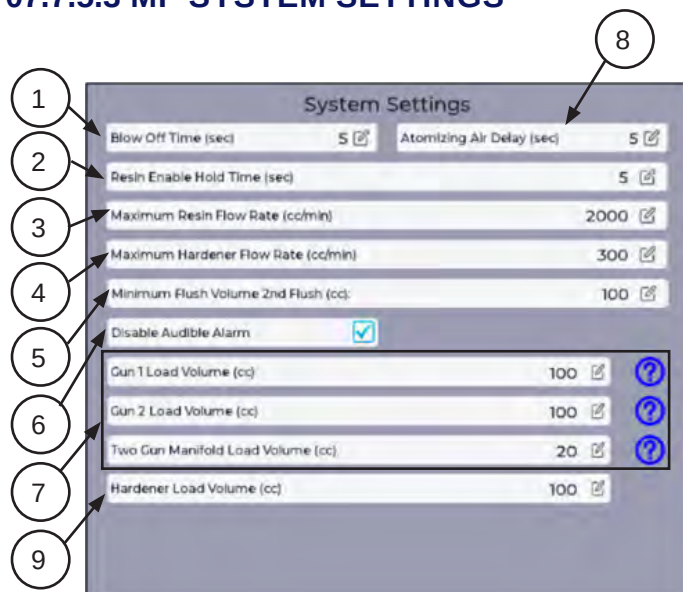
- Blow Off Time:** Enter the amount of time before a fault occurs between when the atomization air flow sensor detects a trigger and fluid flow is detected.
- Pressure Units:** Select your preference for how pressure units are displayed on the control system.
- Maximum Outlet Pressure:** Enter the maximum outlet pressure of the pump. Exceeding this pressure generates a system fault.
- Minimum Inlet Pressure:** Enter the minimum inlet pressure of the pump. Dropping below this value while spraying generates a fault.
- Resin Enable Hold Time:** The amount of time the resin enable valve remains on after the loss of a trigger signal.
- Maximum Resin Flow Rate:** Enter the maximum component "A" flow rate. Exceeding this rate generates a fault and shuts spraying down.
- Flow Sensor Delay Time:** Enter the time allowed between the sensor not detecting flow after the gun is triggered and before the flow fault is triggered.
- Minimum Flush Volume 2nd Flush:** Enter the minimum amount of solvent used during the second flush phase of the purge process. This is in addition to the time it takes to satisfy the flush. Entering "0" disables the feature. Note that the flush will not complete until this amount of solvent has flowed and the flush timer has elapsed.
- Disable Audible Alarm:** Toggle to disable the audible alarm from sounding during a fault or warning condition.

10. **Atomizing Air Delay:** Enter the amount of time to delay atomization air after triggering the spray gun(s).
11. **Gun 1 Load Volume, Gun 2 Load Volume, and Two Gun Manifold Load Volume:** Enter the volume of mixed material flowing to the gun(s). This is used in load operations and pot-life calculations.
  - a. Enter an accurate value to ensure proper loading and flushing.
  - b. Refer to the table below for suggested volumes based on hose size and length. In the table, "cc" represents cubic centimeters.
  - c. Press ("?",) for a screen listing estimated gun volumes.

#### 07.7.5.2 GUN LOAD VOLUME PER HOSE SIZE AND LENGTH

| Hose Size                    | 15 feet | 25 feet | 50 feet | 75 feet | 100 feet |
|------------------------------|---------|---------|---------|---------|----------|
| 1/4 inch ID estimated volume | 225 cc  | 325 cc  | 600 cc  | 875 cc  | 1150 cc  |
| 3/8 inch ID estimated volume | 400 cc  | 625 cc  | 1200 cc | 1775 cc | 2350 cc  |

#### 07.7.5.3 MP SYSTEM SETTINGS



1. **Blow Off Time:** Enter the amount of time before a fault occurs between when the atomization air flow sensor detects a trigger and fluid flow is detected. This option is available only to systems configured for atomization air.

2. **Resin Enable Hold Time:** The amount of time the resin enable valve remains on after the loss of a trigger signal.
3. **Maximum Resin Flow Rate:** Generates a fault and shuts down spray if the gun produces too high a flow rate for component "A."
4. **Maximum Hardener Flow Rate:** Generates a fault and shuts down spray if the gun produces too high a flow rate for component "B."
5. **Minimum Flush Volume 2nd Flush:** The amount of solvent required during the second flush phase of the purge process, in addition to the time it takes to satisfy the purge. A value of "0" disables this feature.
6. **Disable Audible Alarm:** Select to disable the audible alarm from sounding during a fault or warning condition.
7. **Gun 1 Load Volume, Gun 2 Load Volume, and Two Gun Manifold Load Volume:** Enter the volume of mixed material flowing to the gun(s). This is used in load operations and pot-life calculations.
  - a. Entering an accurate value ensures proper loading and flushing.
  - b. Refer to the "Gun Load Volume per Hose Size and Length" table (previous column) for suggested volumes.
  - c. Press ("?",) for a screen listing estimated gun volumes.
8. **Atomizing Air Delay:** Delay time for atomization air for the gun after triggering.
9. **Hardener Load Volume:** Enter the fluid volume in the hose connecting the pulse valve and mix block. This helps gauge the total fluid volume used in pot life calculations.

### 07.7.6 LP PUMP SETUP

Select **Pump Setup** (1) to calibrate the dispense pump position sensor for the LP system.

#### NOTICE

The pump setup button will not appear unless the system is stopped.

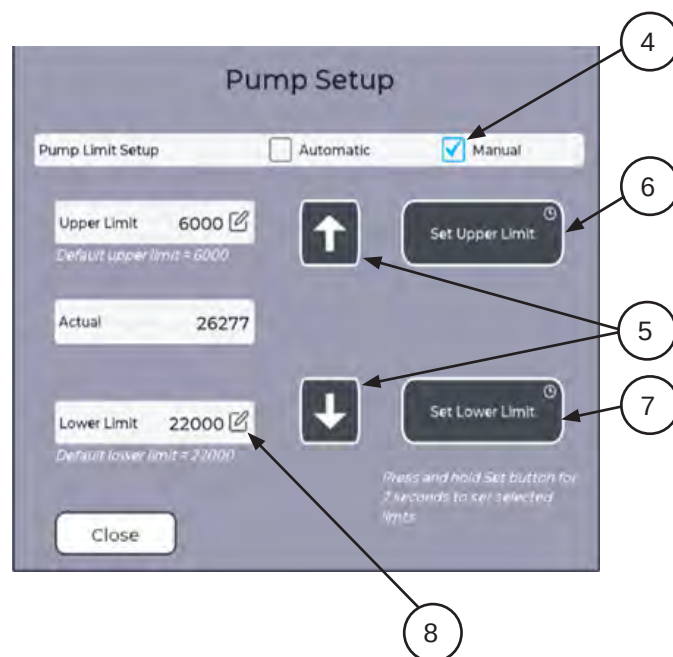
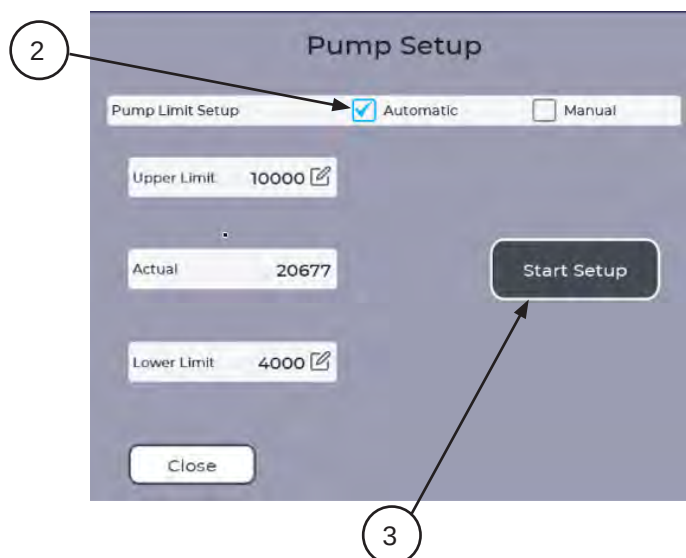
Users may choose to set up the dispense pump either automatically or manually. The automatic option is recommended. The manual setting is useful during troubleshooting or disassembly.

To set up the pump automatically:

1. Select **Automatic** (2) in **Pump Limit Setup** to measure the upper and lower limits of the pump automatically. The limits tell the pump when to reverse.
2. Select **Start Setup** (3) to initiate the automatic pump setup.
3. The automatic setup will open all four pump valves and move the pump downward until it can no longer move and then upward until it can no longer move
4. When complete, the upper and lower limits will be set so that the pump will have a buffer space at the upper and lower limits of travel to prevent any possible binding.

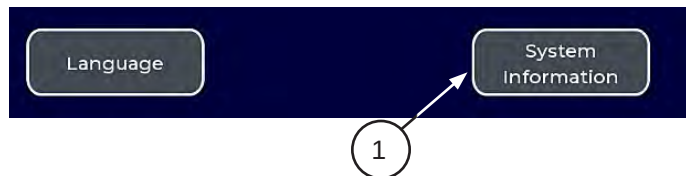
To set up the pump manually:

1. Select **Manual** (4) in **Pump Limit Setup**.
2. Manually move the pump up and down using the up and down arrow buttons (5).
3. Press **Set Upper Limit** (6) and **Set Lower Limit** (7) to set the corresponding limit using the current sensor reading. The system will automatically set limits, including a buffer space.
4. To manually enter a value without a buffer space, the user can set the upper and lower limits by editing the fields directly (8).



### 07.7.7 SYSTEM INFORMATION

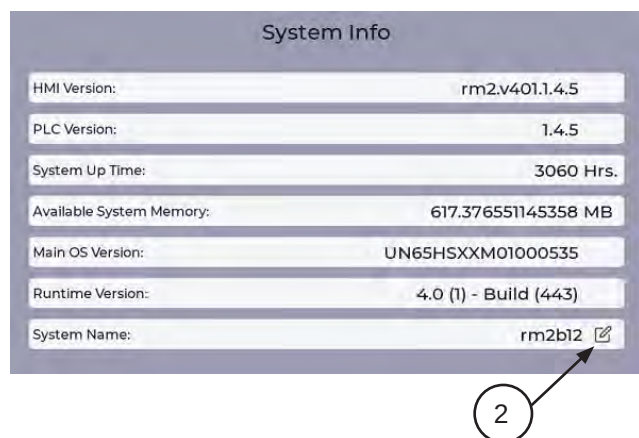
The **System Information** (1) pop-up screen shows read-only information for the system software.



The screen includes:

- Touchscreen software version
- PLC version
- Time the system has been used
- Total available memory in megabytes (MB)
- Operating system version
- Runtime version

Users can rename their systems using the pen-and-paper icon in the **System Name** box (2). This screen is automatically updated with the latest information after a software update.



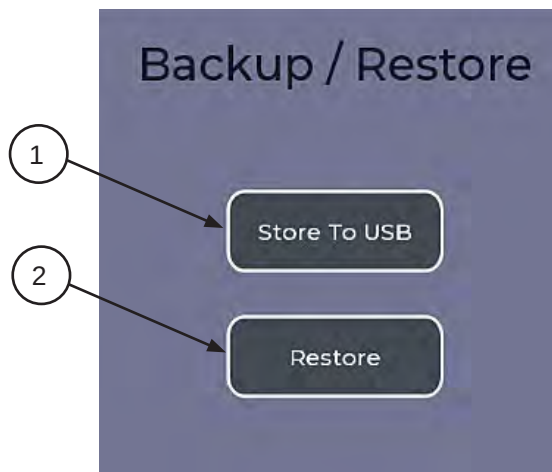
### 07.7.8 BACKUP/RESTORE ICON

Use the **BACKUP / RESTORE** function (3) to back up files stored on the control system or restore files from another system.



To backup or restore files, press the USB stick symbol in the lower right corner of the settings screen (3).

- To store system data to a USB inserted into the machine, select **Store To USB** (1).
- To restore files, press **Restore** (2) and navigate to the file location.



### 07.7.9 IN-BOOTH CONTROL

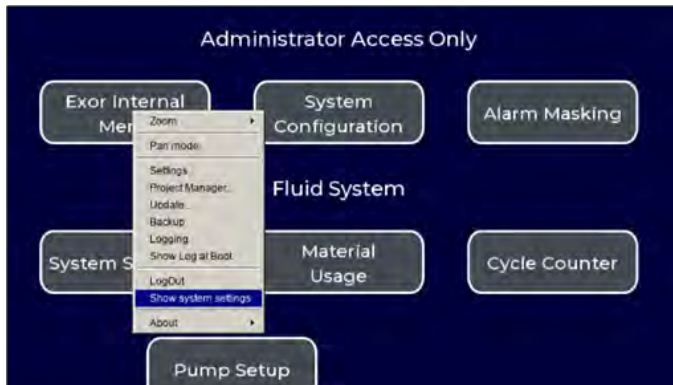
The in-booth control setting is available for machines with the remote color change option installed. See Operation Manual 77-3153-2 chapter 06 Remote Color Change Box for more information on the remote color change option.

## 07.8 CORVINA CLOUD SETUP

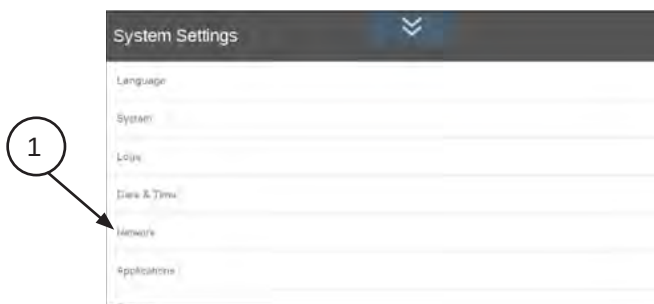
**NOTICE**

Cloud setup requires detailed network knowledge of IP addresses. Consult your IT department for more information.

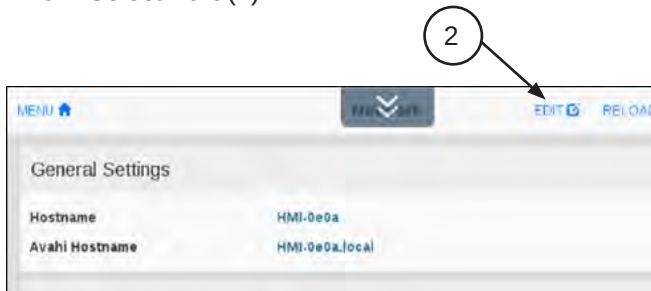
1. Select **MENU** > **Settings** > **Exor Internal Menu** > **Show system settings**.



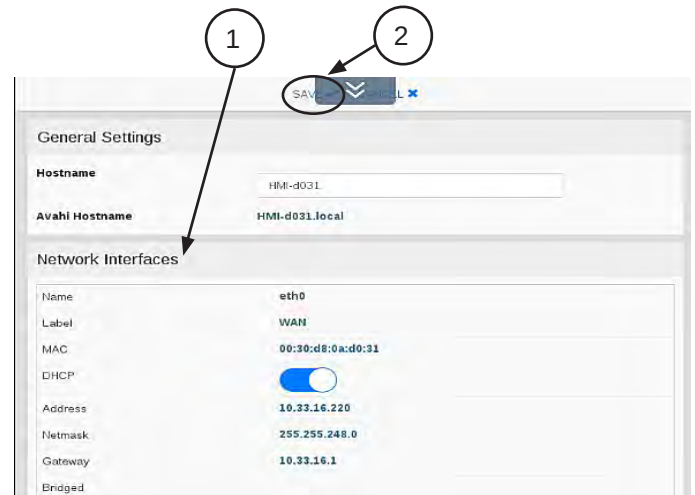
2. If connecting by Ethernet, use IP addresses for your facility.
  - a. Select **Network** (1).



- b. Select **Edit** (2).



- c. Enter information under **Network Interfaces** (1).
- d. Select **Save** (2) when complete.



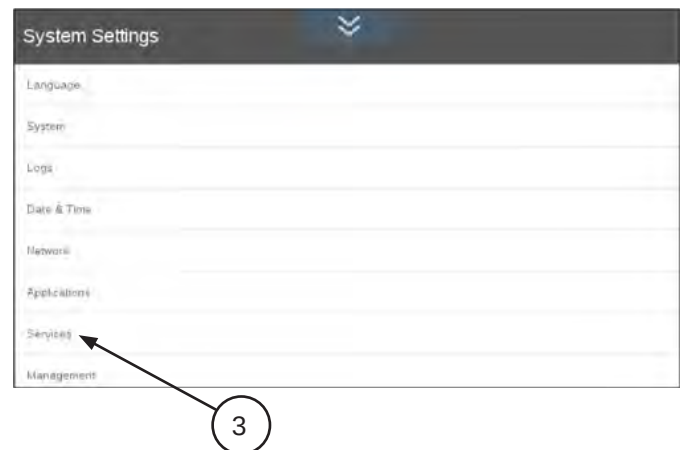
3. If connecting by WIFI, enter the required network information.
  - a. Select **Network**.
  - b. Select **Edit** in the top right corner.
  - c. Enter information under **Wireless Networking**.



- d. Select **Save** when complete.

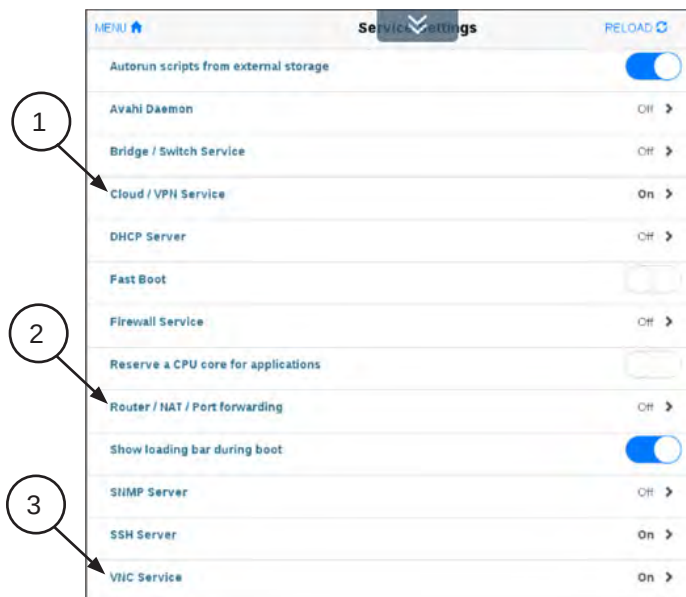
4. Enable services.

- a. Navigate to **System Settings** > **Services** (3)



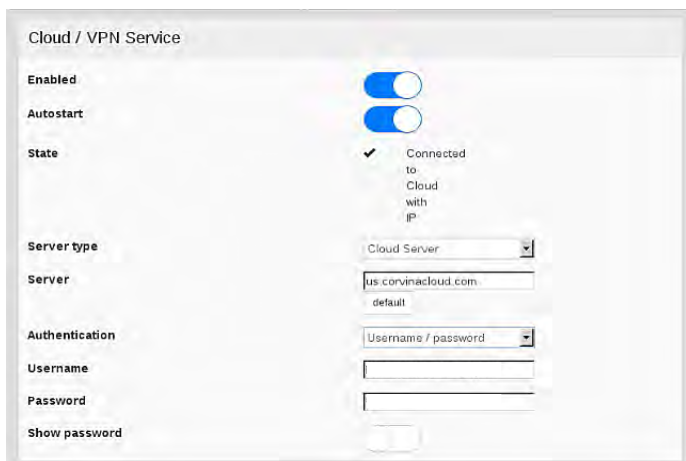
b. Enable these three services

- **Cloud / VPN Service** (1)
- **Router / NAT / Port forwarding** (2)
- **VNC Service** (3)



c. Select **Cloud / VPN Service** (1) and verify the following settings:

- **Server:** us.corvinacloud.com
- **Authentication:** Choose between entering a username and password or activation code.
- **Username:** RM2-machineserialnumber/organization (for example, RM2-1234-Binks)
- **Password:** paint123\$



## NOTICE

Login credentials will be different for each machine based upon the following: your machine serial number, and your organization's server or cloud login credentials.

## ! WARNING

Though unlikely, a malicious actor having access to the RM2 via the cloud service would be able to activate the unit remotely.

The greatest hazard in this case is the potential for releasing chemicals while no personnel are present. However, this hazard is mitigated if the air and fluid supplies to the machine are deactivated when no personnel are to be present (as recommended in the safety section).

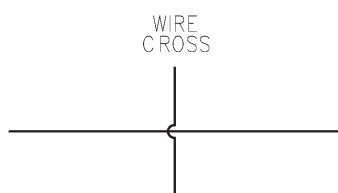
If you suspect someone has unauthorized access to your system, contact your Corvina Cloud organization's administrator (this could be the distributor of your equipment). If this information is not known, contact Binks.

## 08 ELECTRICAL SCHEMATICS

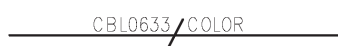
| 08.1 RM2 MAIN CONTROL |                                                                  |
|-----------------------|------------------------------------------------------------------|
| Drawing #             | Description                                                      |
| 0                     | Cover Sheet/Table of Contents                                    |
| Preface 1             | Schematic Legend Descriptions                                    |
| Preface 2             | Wire Colors                                                      |
| Preface 3             | Wire Gauges and Ampacity                                         |
| Preface 4             | Cables                                                           |
| 10                    | Main Power In                                                    |
| 30                    | 24VDC Power Supply and Power Distribution                        |
| 40                    | Ethercat Coupler                                                 |
| 41                    | Ethercat Channel Card                                            |
| 42                    | PLC Card 1 (Inputs)                                              |
| 43                    | PLC Card 2                                                       |
| 44                    | PLC Card 3                                                       |
| 45                    | PLC Card 4 (Pump Position Sensor, Flow Commad, Pressure Sensors) |
| 46                    | PLC Card 5 (Flow Meter)                                          |
| 50                    | Exor HMI                                                         |
| 55                    | Optional Remote Fieldbus Connection                              |

## 08.2 PREFACE 1: SCHEMATIC LEGEND

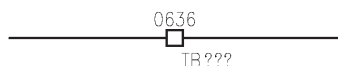
LEGEND DESCRIPTIONS  
 NUMBERING CODE  
 XX???? = COMPONENT TYPE  
 ??XX?? = SHEET  
 ???XX = COLUMN



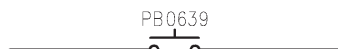
CABLE NUMBER  
CORE IDENTIFIER



TERMINAL BLOCK  
WIRE NUMBER



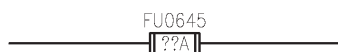
PUSHBUTTON  
NORMALLY OPEN



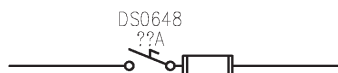
PUSHBUTTON  
NORMALLY CLOSED



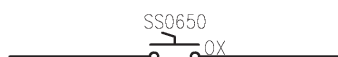
FUSE WITH  
RATING



FUSED DISCONNECT  
WITH RATING



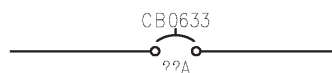
NORMALLY OPEN  
SELECTOR SWITCH



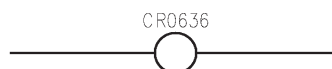
WIRE  
CONNECTION



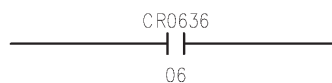
CIRCUIT BREAKER  
WITH RATING



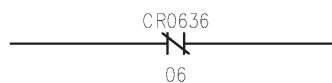
CONTROL  
RELAY COIL



CONTROL RELAY  
NORMALLY OPEN  
CONTACT



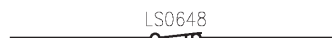
CONTROL RELAY  
NORMALLY CLOSED  
CONTACT



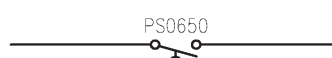
SOLENOID



NORMALLY CLOSED  
LIMIT SWITCH



NORMALLY OPEN  
PRESSURE SWITCH



06  
06

## 08.3 PREFACE 2: WIRE COLORS

## 08.3.1 WIRE COLORS (SINGLE COLOR)

| Wire Reference | Color  |
|----------------|--------|
| BLK            | BLACK  |
| WHT            | WHITE  |
| BLU            | BLUE   |
| RED            | RED    |
| GRN            | GREEN  |
| ORG            | ORANGE |
| BRN            | BROWN  |
| YLW            | YELLOW |

## 08.3.2 WIRE COLORS (STRIPE)

| Wire Reference | Color                 |
|----------------|-----------------------|
| RED_GRY        | RED w/GRAY STRIPE     |
| GRY_RED        | GRAY w/RED STRIPE     |
| WHT_BRN        | WHITE w/BROWN STRIPE  |
| BRN_WHT        | BROWN w/WHITE STRIP   |
| WHT_GRY        | WHITE w/GRAY STRIPE   |
| GRY_WHT        | GRAY w/WHITE STRIPE   |
| RED_BLU        | RED w/BLUE STRIPE     |
| BLU_RED        | BLUE w/RED STRIPE     |
| RED_ORG        | RED w/ORANGE STRIPE   |
| ORG_RED        | ORANGE w/RED STRIPE   |
| RED_GRN        | RED w/GREEN STRIPE    |
| GRN_RED        | GREEN w/RED STRIPE    |
| BRN_RED        | BROWN w/RED STRIPE    |
| RED_BRN        | RED w/BROWN STRIPE    |
| WHT_GRN        | WHITE w/GREEN STRIPE  |
| GRN_WHT        | GREEN w/WHITE STRIPE  |
| WHT_BLU        | WHITE w/BLUE STRIPE   |
| BLU_WHT        | BLUE w/ WHITE STRIPE  |
| WHT_ORG        | WHITE w/ORANGE STRIPE |
| ORG_WHT        | ORANGE w/WHITE STRIPE |
| GRN_YLW        | GREEN w/YELLOW STRIPE |

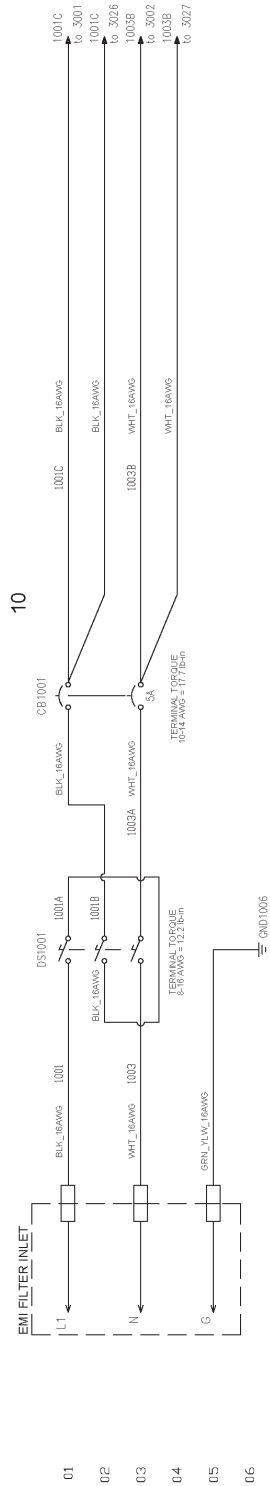
**08.4 PREFACE 3: WIRE GAUGES AND AMPACITY**

| American Wire Gauge (AWG) | Diameter (Inches) | Cross Sectional Area (Millimeters Squared) | Ampacity (75 Degree C Copper) |
|---------------------------|-------------------|--------------------------------------------|-------------------------------|
| 3                         | 0.2292            | 26.65                                      | 100                           |
| 4                         | 0.2043            | 21.14                                      | 85                            |
| 6                         | 0.162             | 13.29                                      | 65                            |
| 8                         | 0.1285            | 8.36                                       | 52                            |
| 10                        | 0.1019            | 5.26                                       | 30                            |
| 12                        | 0.0808            | 3.31                                       | 20                            |
| 14                        | 0.0641            | 2.08                                       | 15                            |
| 16                        | 0.0508            | 1.31                                       | 10                            |
| 18                        | 0.0403            | 0.82                                       | 7                             |

**08.5 PREFACE 4: CABLE NUMBERS**

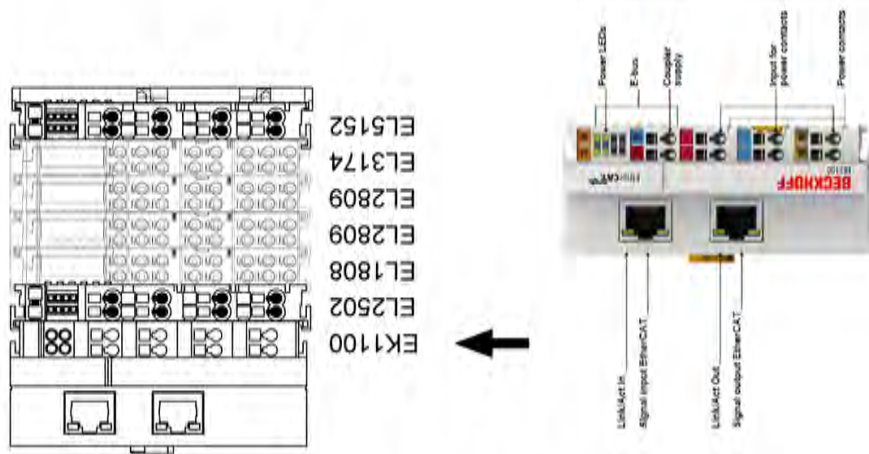
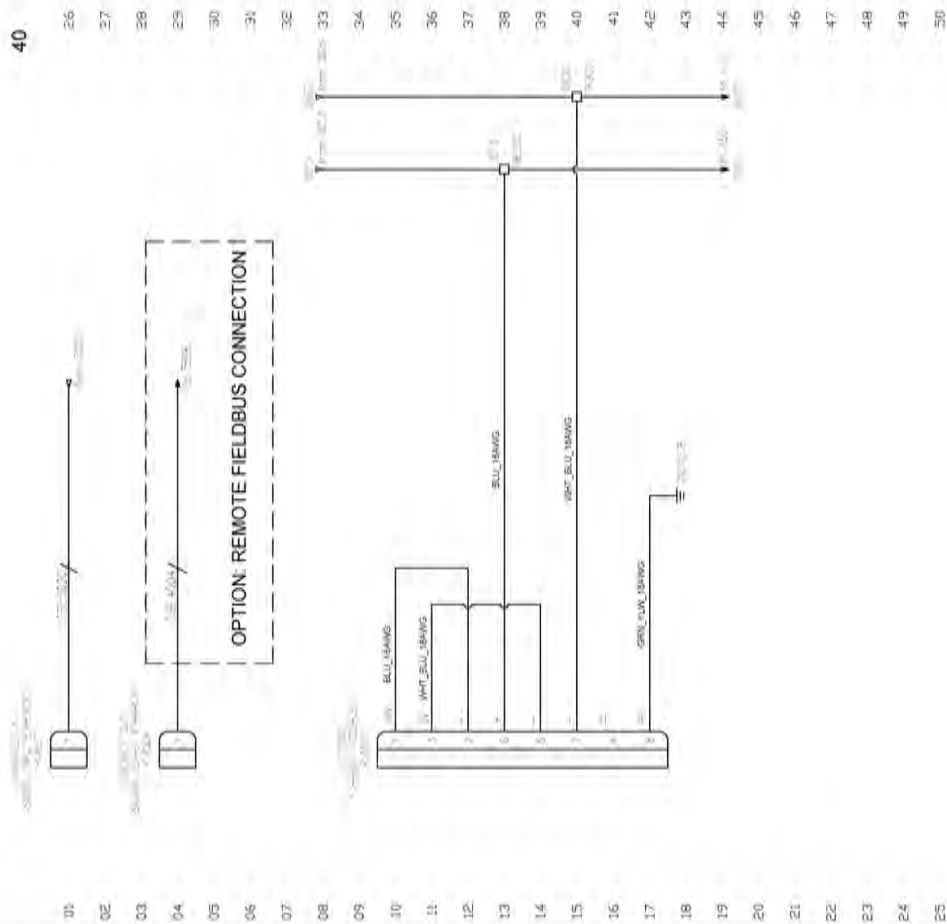
| Cable Number | Cable Type    | Part Number |
|--------------|---------------|-------------|
| CBL4004      | CAT6          | -           |
| CBL4208      | FACTORY CABLE | -           |
| CBL4211      | FACTORY CABLE | -           |
| CBL4214      | M12           | -           |
| CBL4302      | FACTORY CABLE | -           |
| CBL4408      | FACTORY CABLE | 240-5222    |
| CBL4420      | FACTORY CABLE | -           |
| CBL4502      | ASSEMBLY      | -           |
| CBL4511      | BULK CBL      | -           |
| CBL4517      | FACTORY CABLE | 240-5187    |
| CBL4520      | FACTORY CABLE | 240-5187    |
| CBL4602      | FACTORY CABLE | 240-5188    |
| CBL4610      | FACTORY CABLE | 240-5188    |
| CBL5007      | CAT6          | -           |
| CBL5020      | CAT6          | -           |
| CBL5518      | CAT6          | -           |

## 08.6 LP ELECTRICAL SCHEMATICS

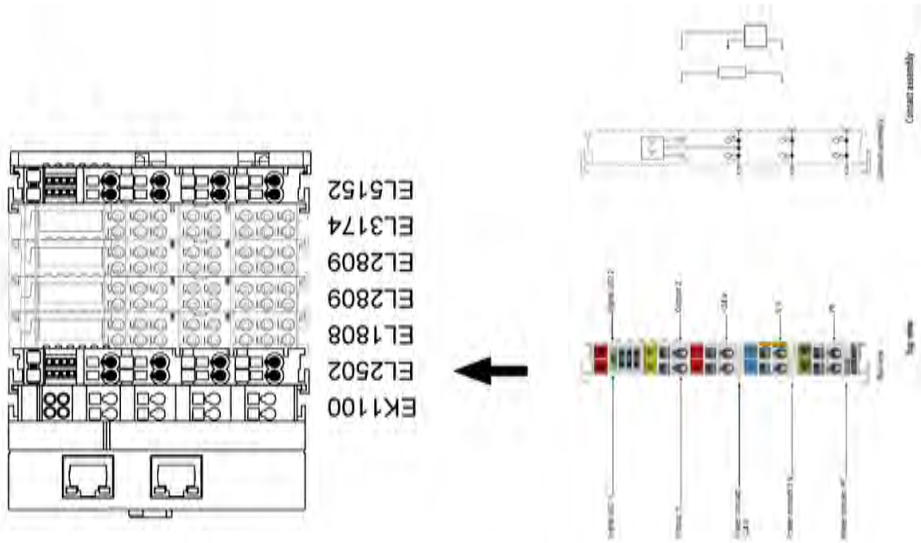
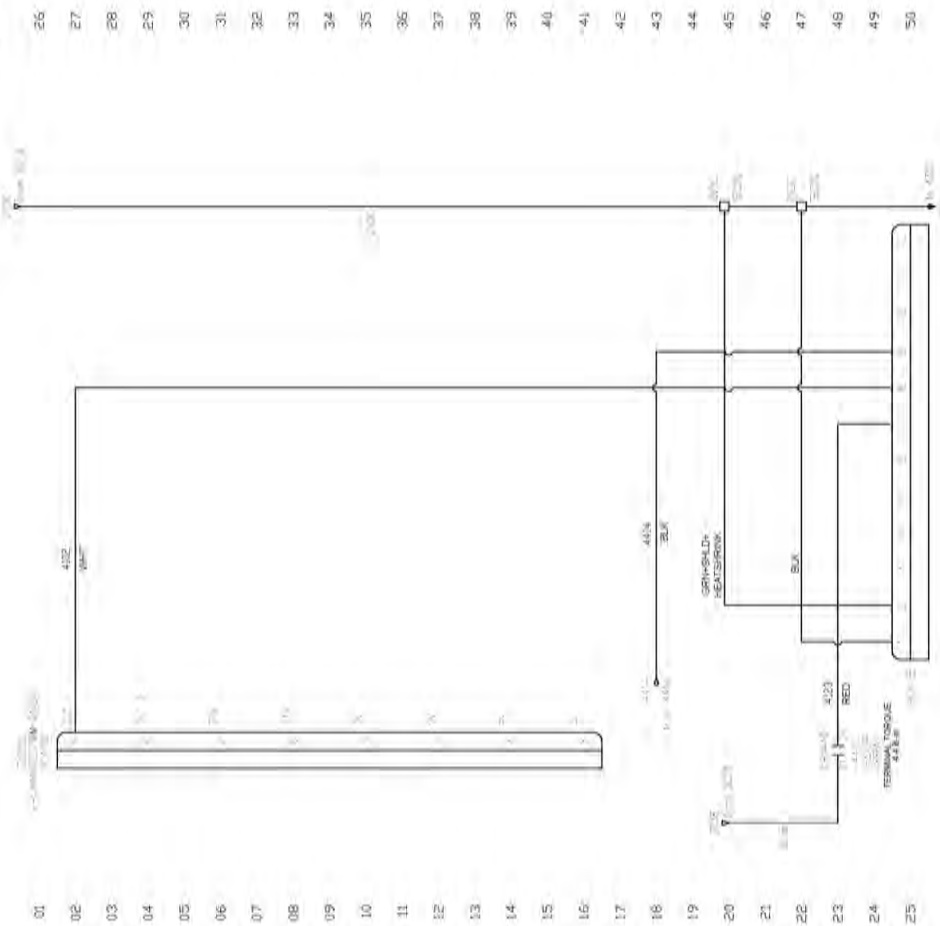


NOTE:  
CUSTOMER SUPPLIED  
100-240VAC, 5AMP, 1PH, 50/60HZ

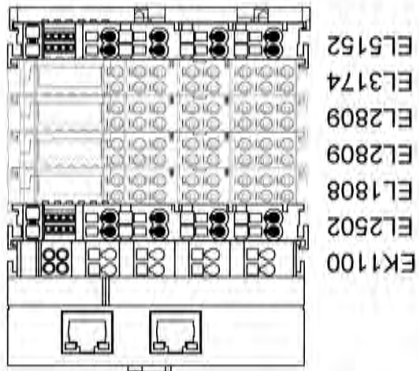
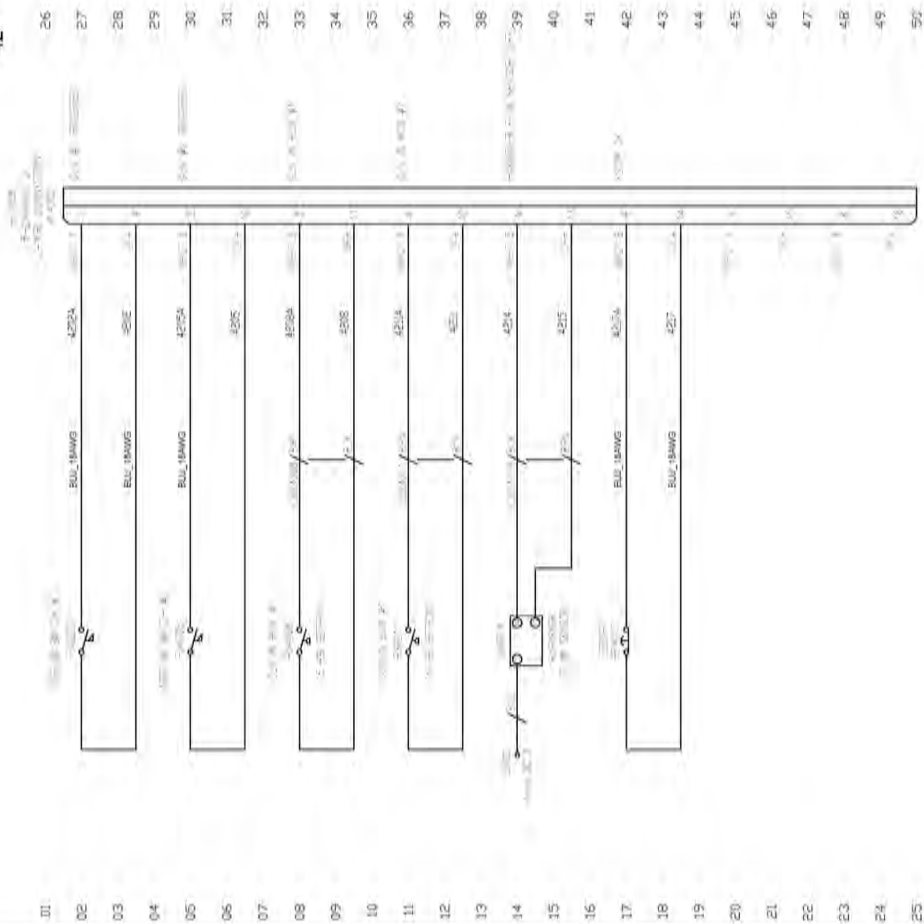




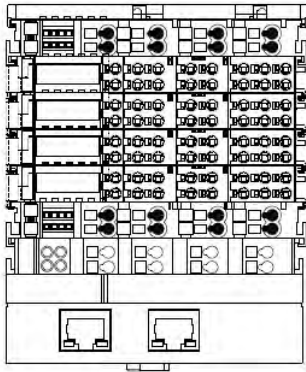
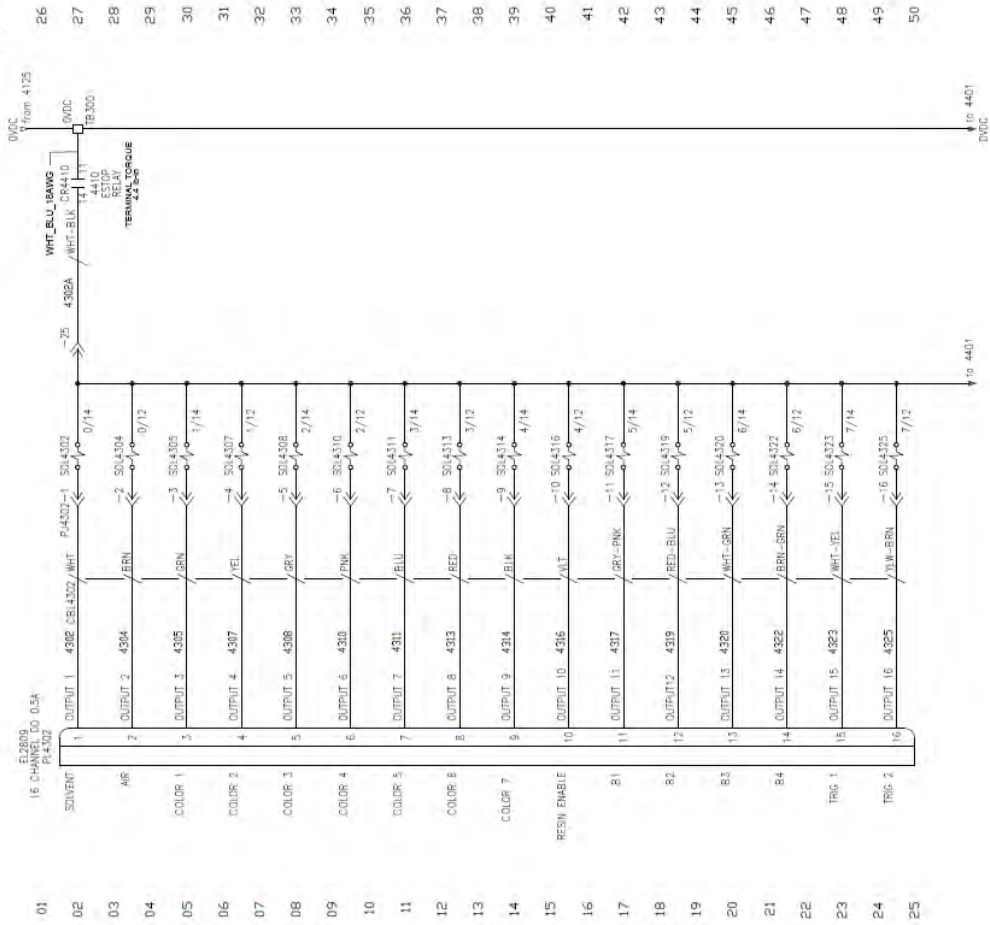
41



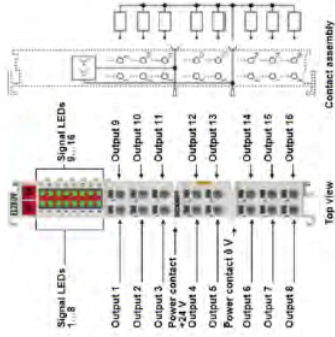
42



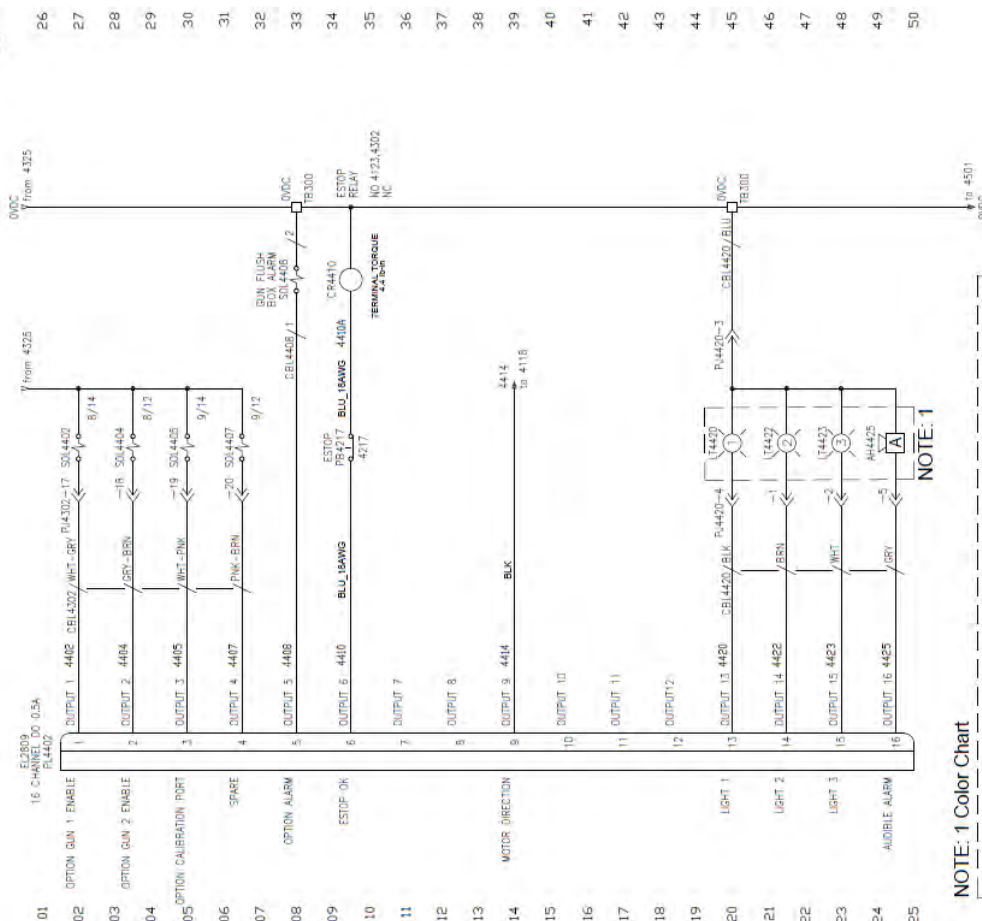
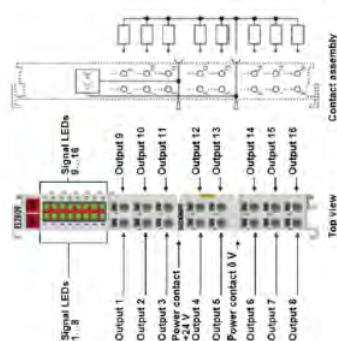
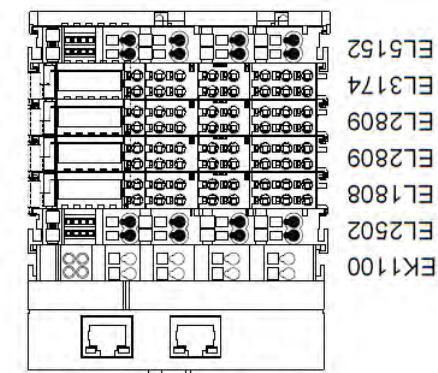
43



EL5152  
EL3174  
EL2809  
EL2809  
EL1808  
EL2502  
EK1100



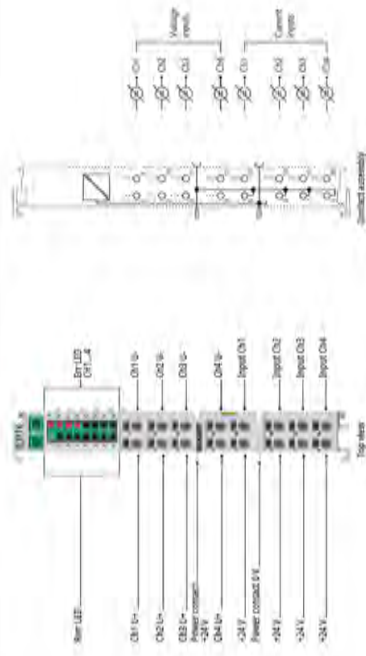
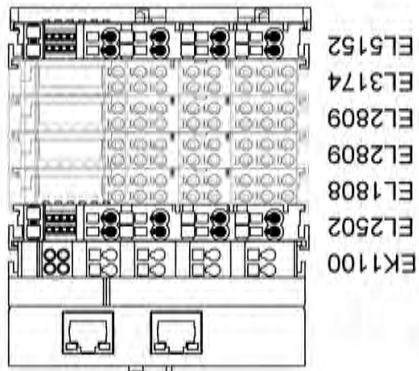
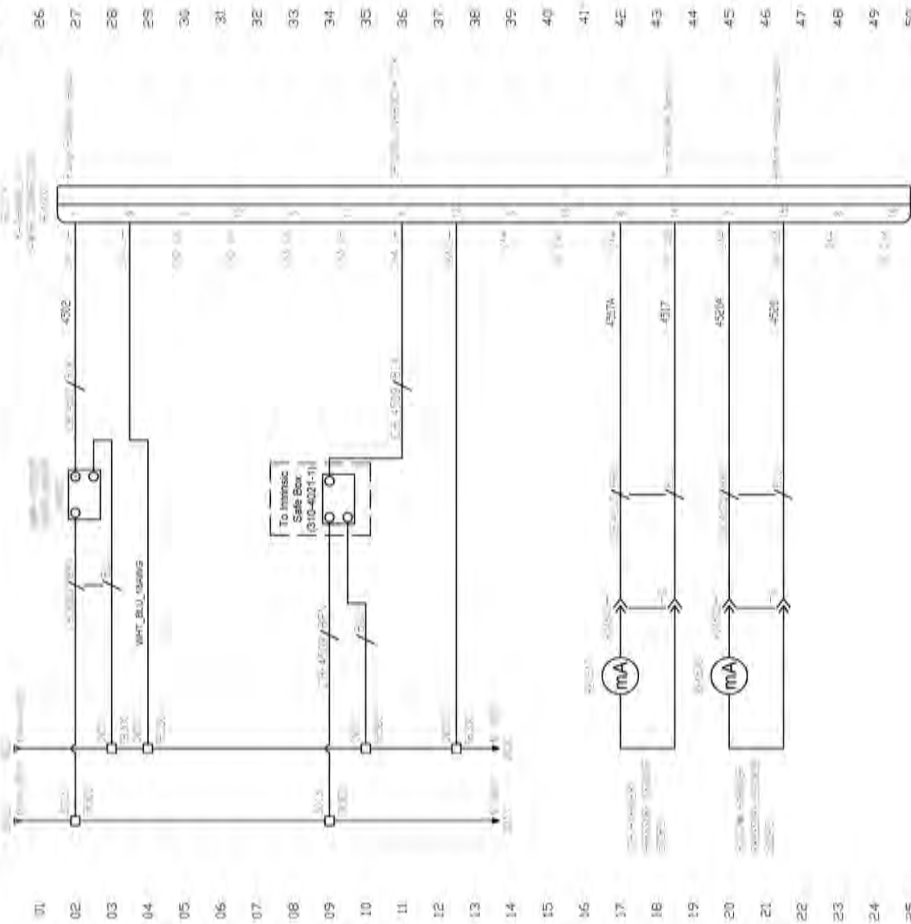
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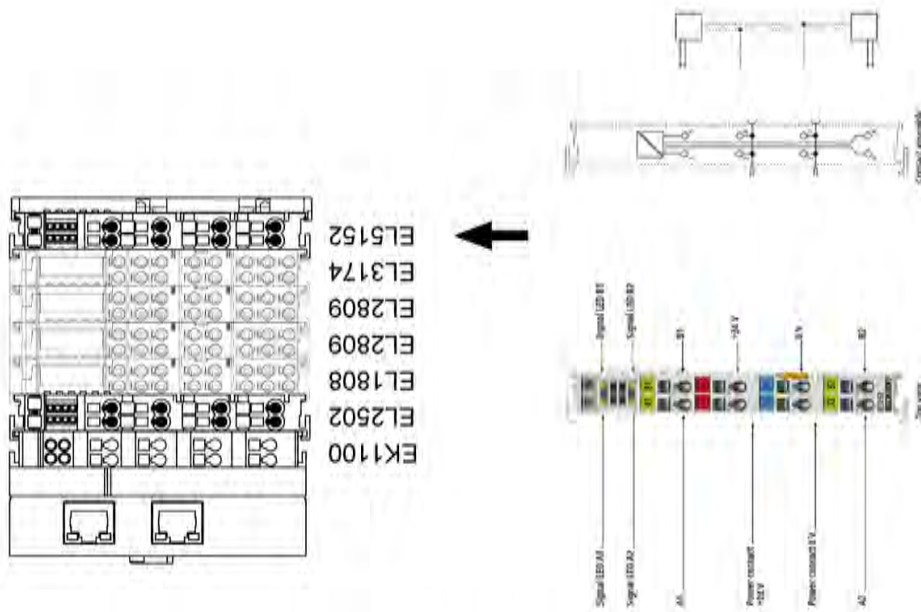
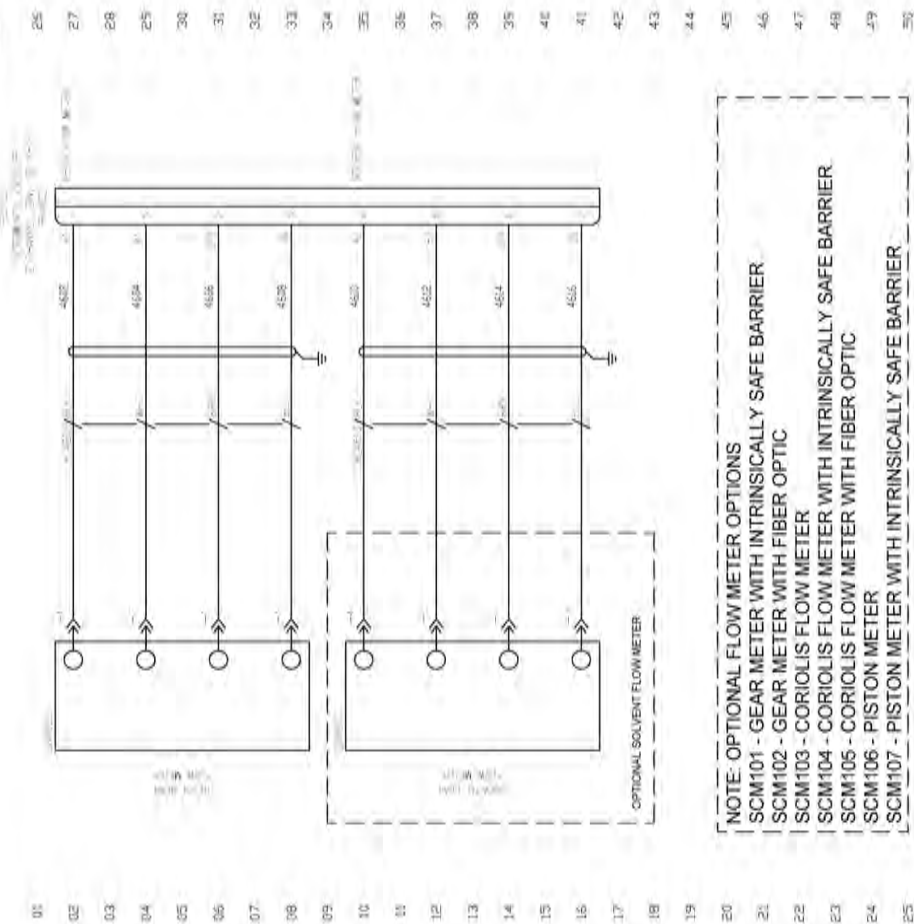
NOTE: 1 Color Chart

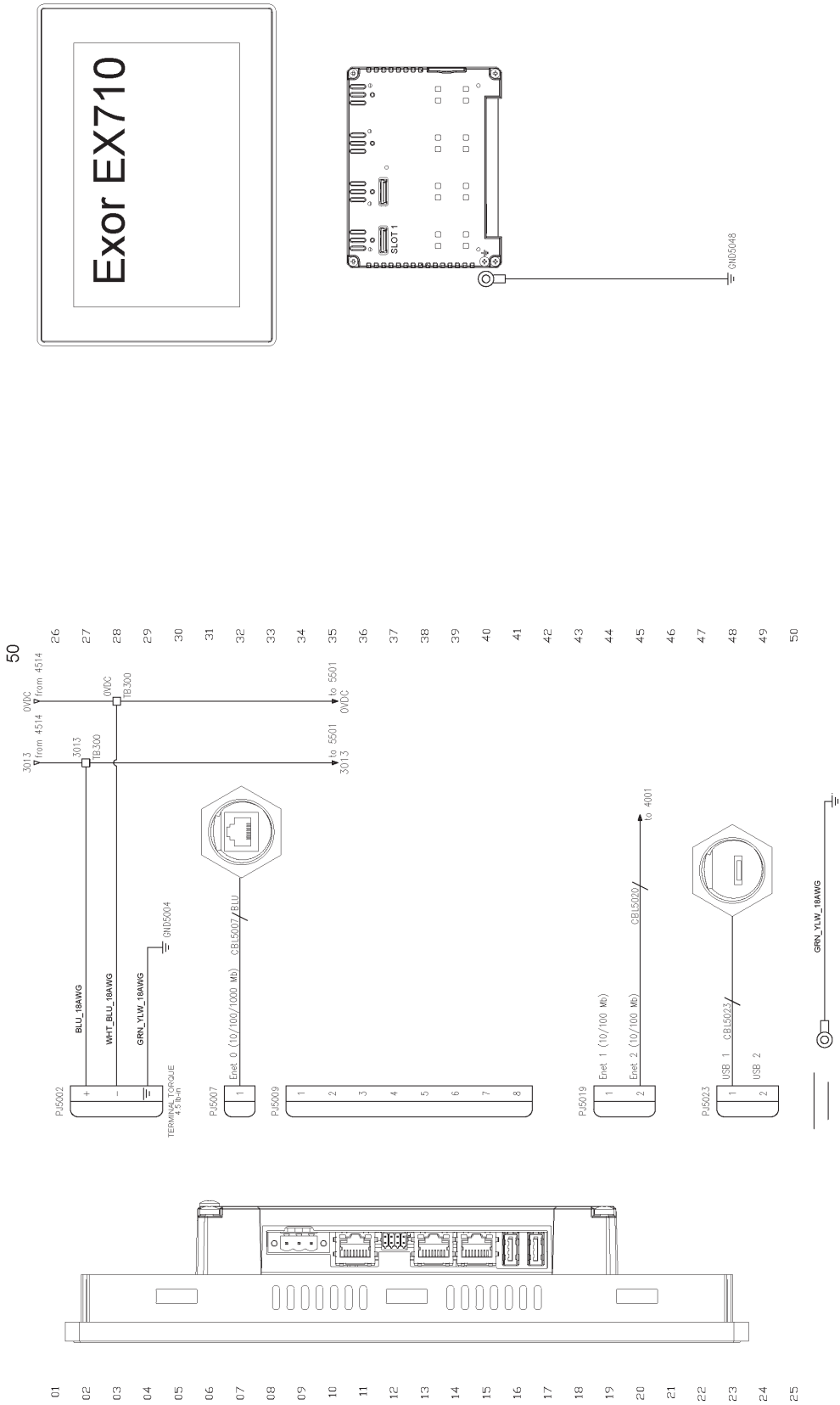
|         | Red | Yellow | Green | Cyan | Blue | Magenta | White |
|---------|-----|--------|-------|------|------|---------|-------|
| Input 1 | X   | X      | X     | X    | X    | X       | X     |
| Input 2 | X   | X      | X     | X    | X    | X       | X     |
| Input 3 | X   | X      | X     | X    | X    | X       | X     |

45



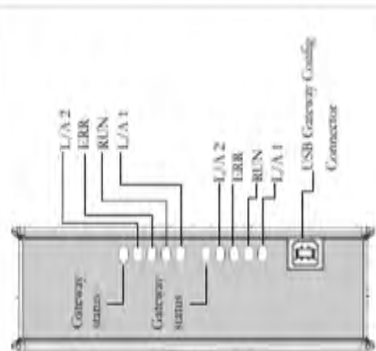
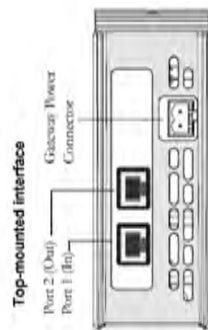
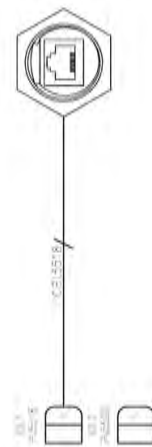
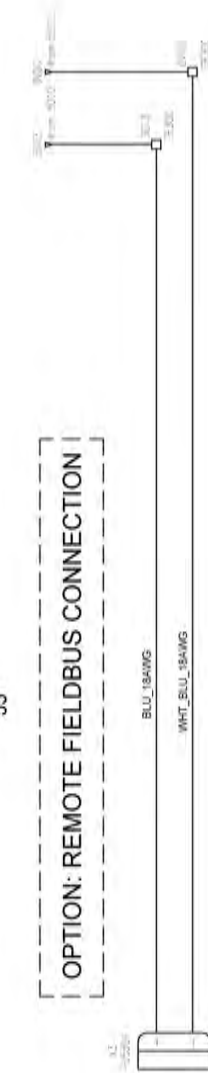
46



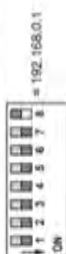


55

OPTION: REMOTE FIELDBUS CONNECTION

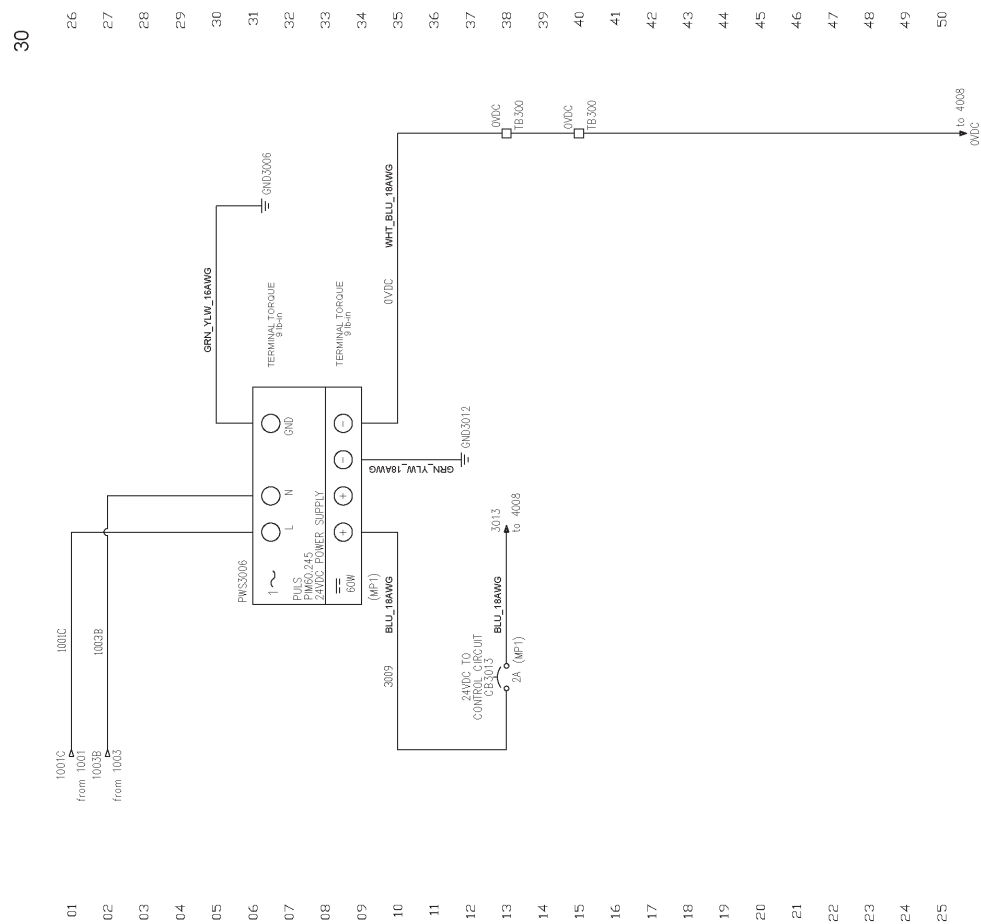


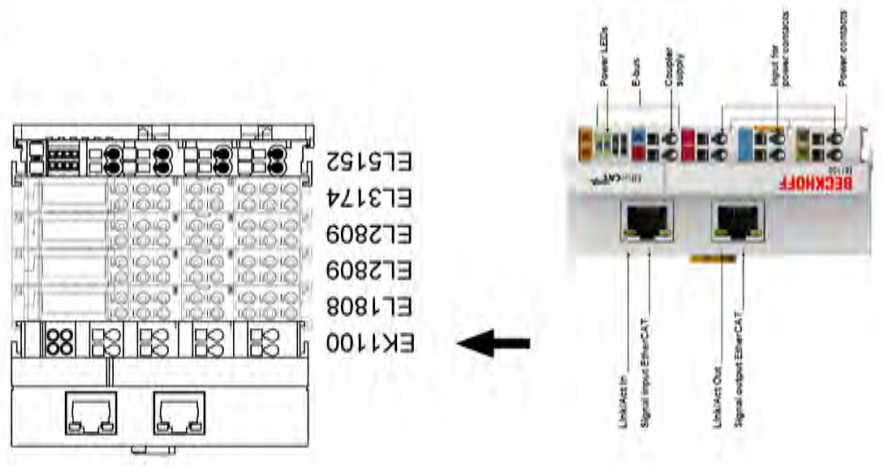
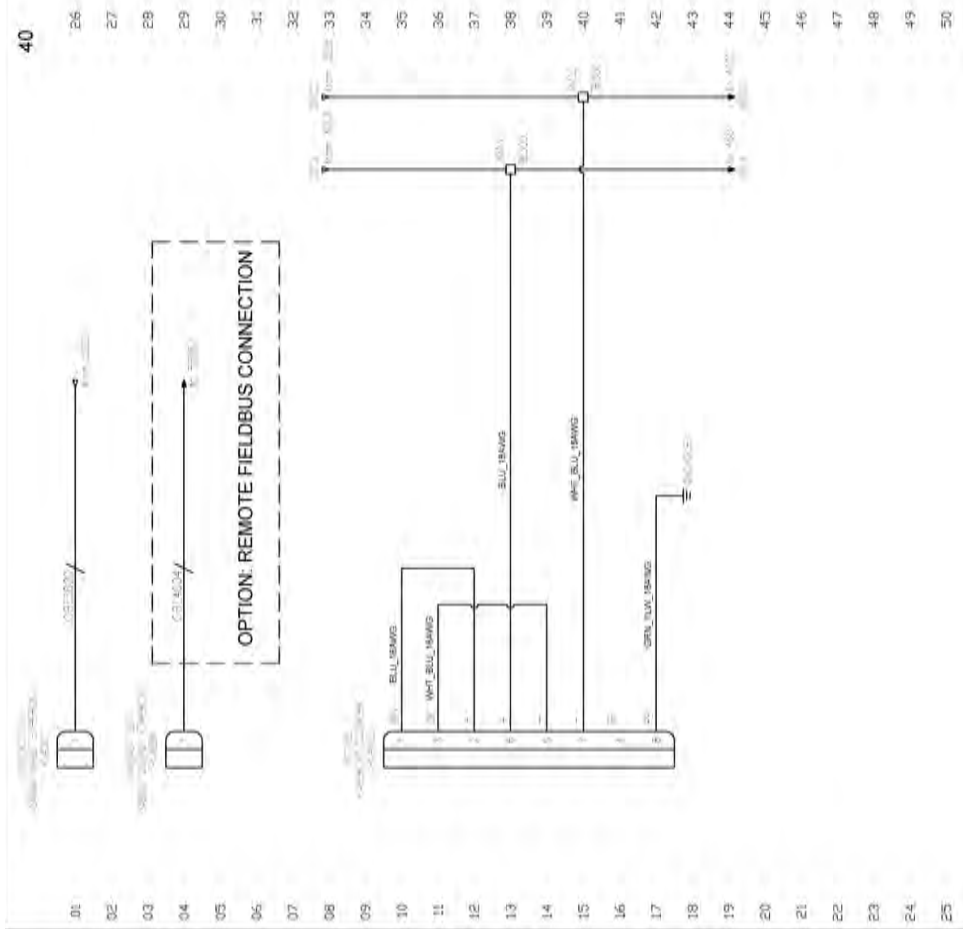
| 128 | 64  | 32  | 16  | 8   | 4   | 2   | 1   | Binary value                 |
|-----|-----|-----|-----|-----|-----|-----|-----|------------------------------|
| OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | IP address set with Priority |
| OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON  | 192.168.0.1                  |
| OFF | OFF | OFF | OFF | OFF | OFF | ON  | OFF | 192.168.0.2                  |
| ON  | ON  | ON  | ON  | ON  | ON  | ON  | OFF | 192.168.0.254                |
| ON  | ON  | ON  | ON  | ON  | ON  | ON  | ON  | (Not valid)                  |
| 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | Switch number                |



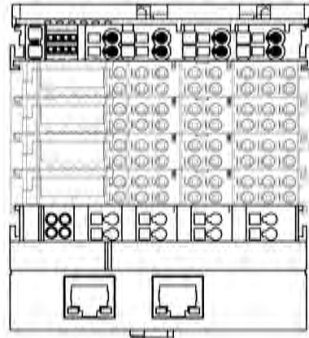
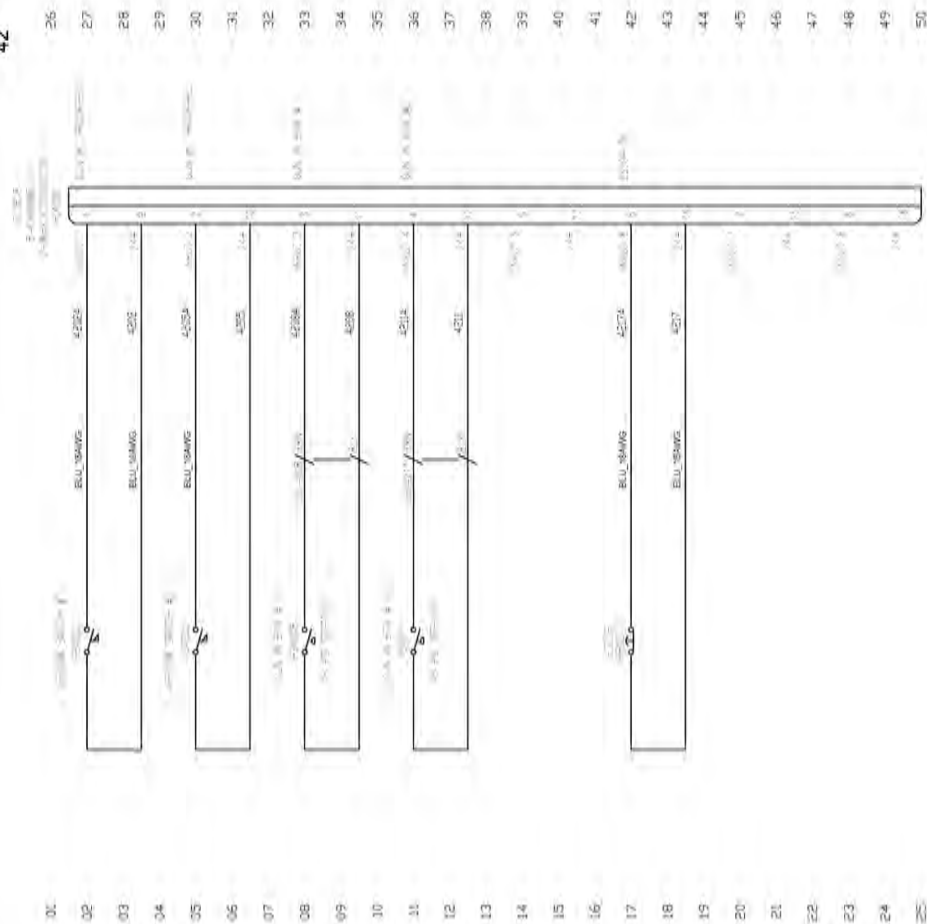
## 77-3153-1 R2.0 (05/2025)







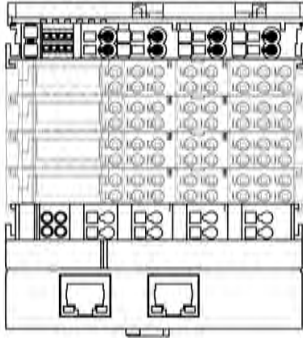
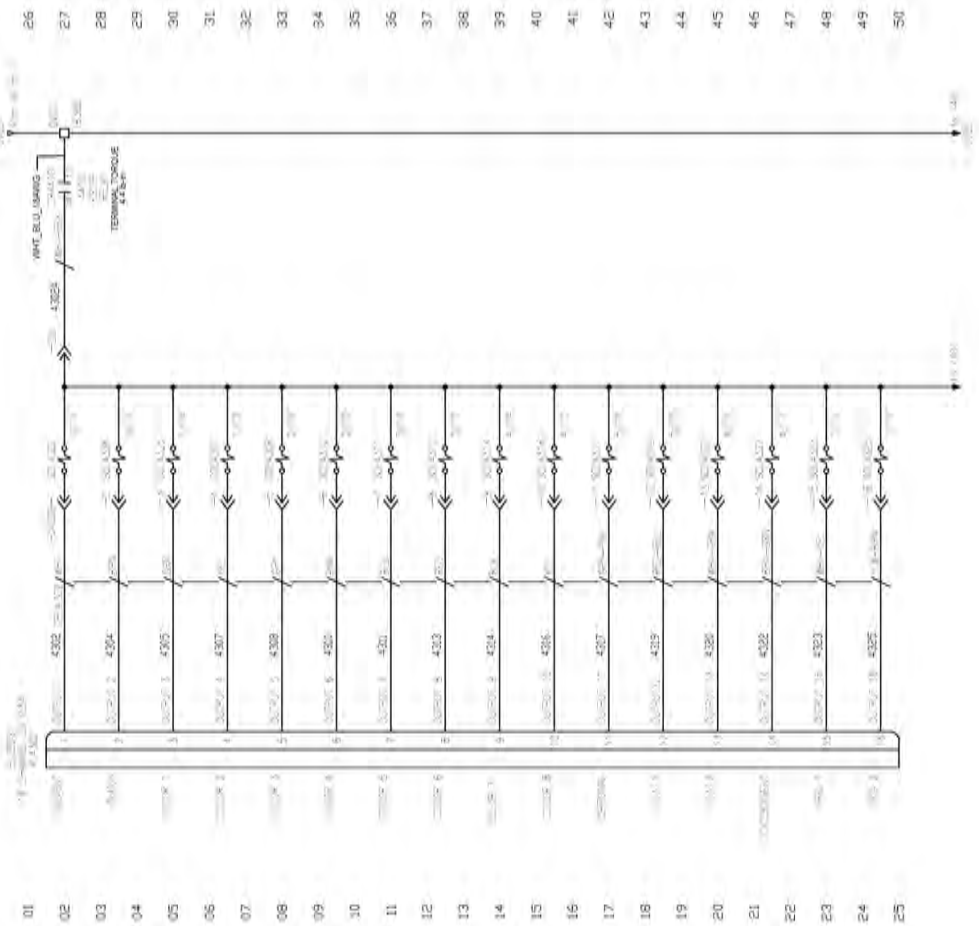
42



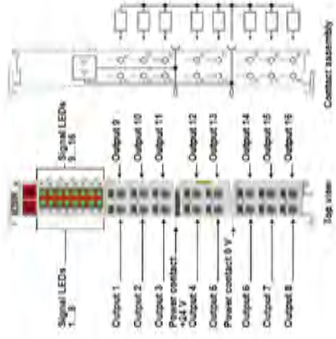
EL1100  
EL1808  
EL2809  
EL2809  
EL3174  
EL5152



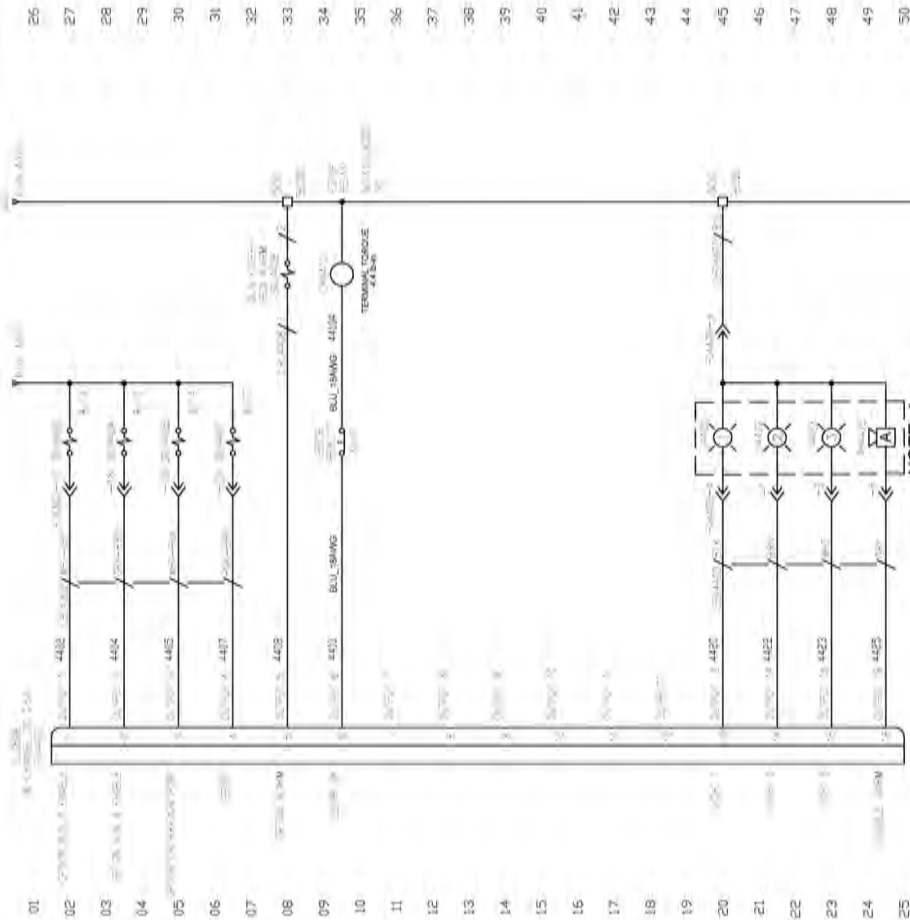
43



- EL5152
- EL3174
- EL2809
- EL2809
- EL1808
- EK1100

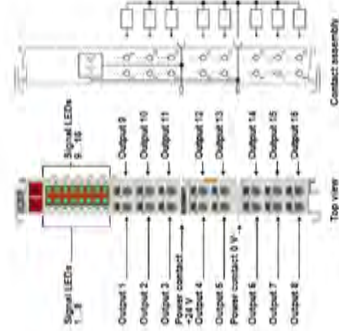
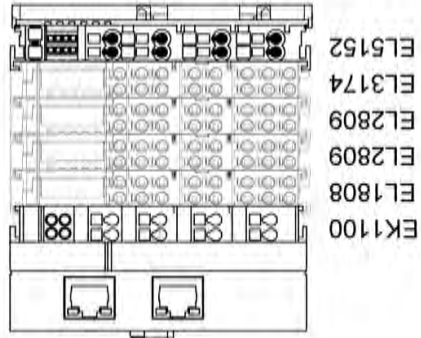


44

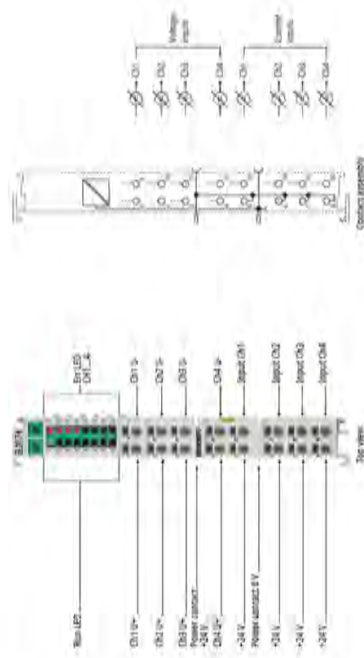
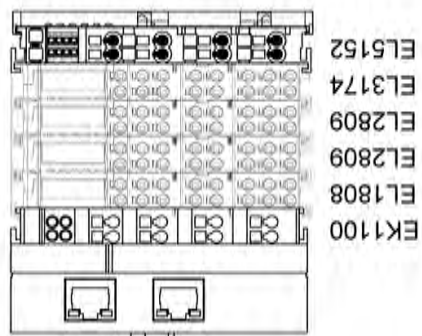
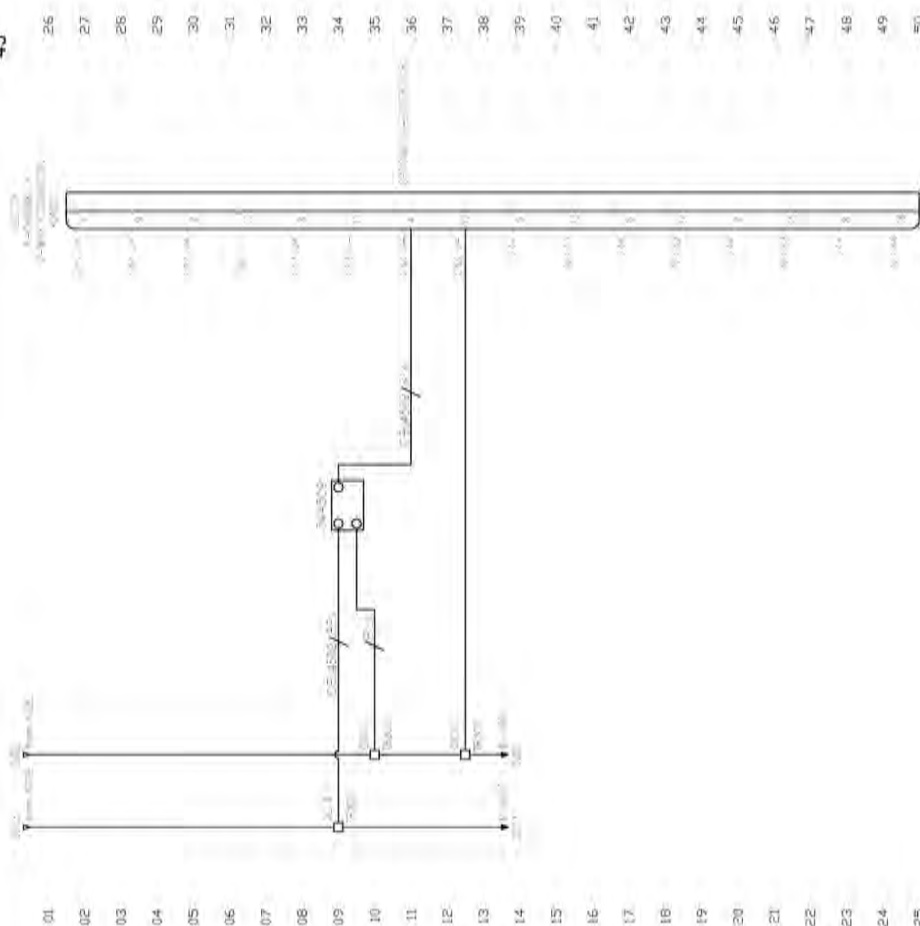


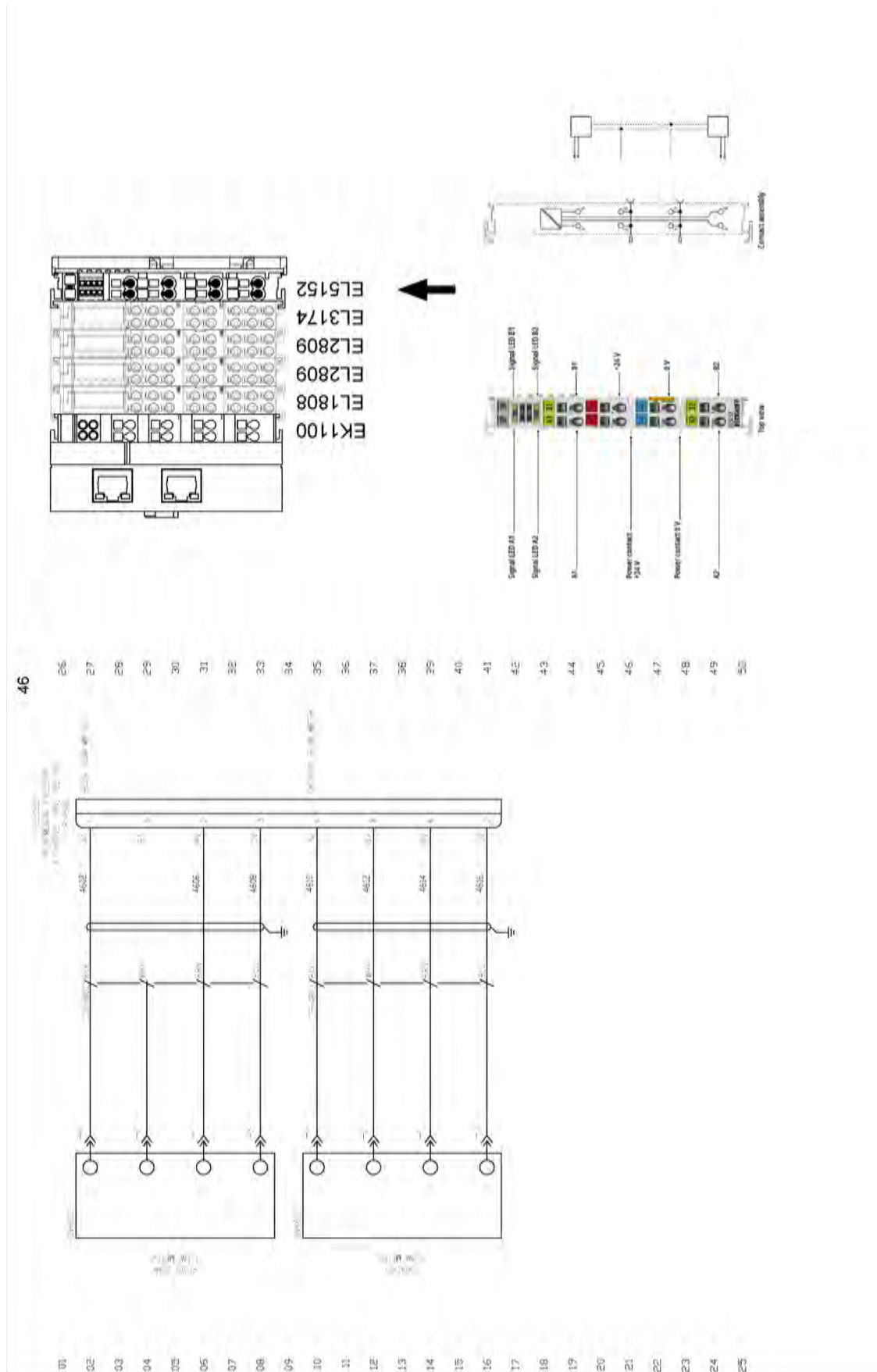
NOTE: 1 Color Chart

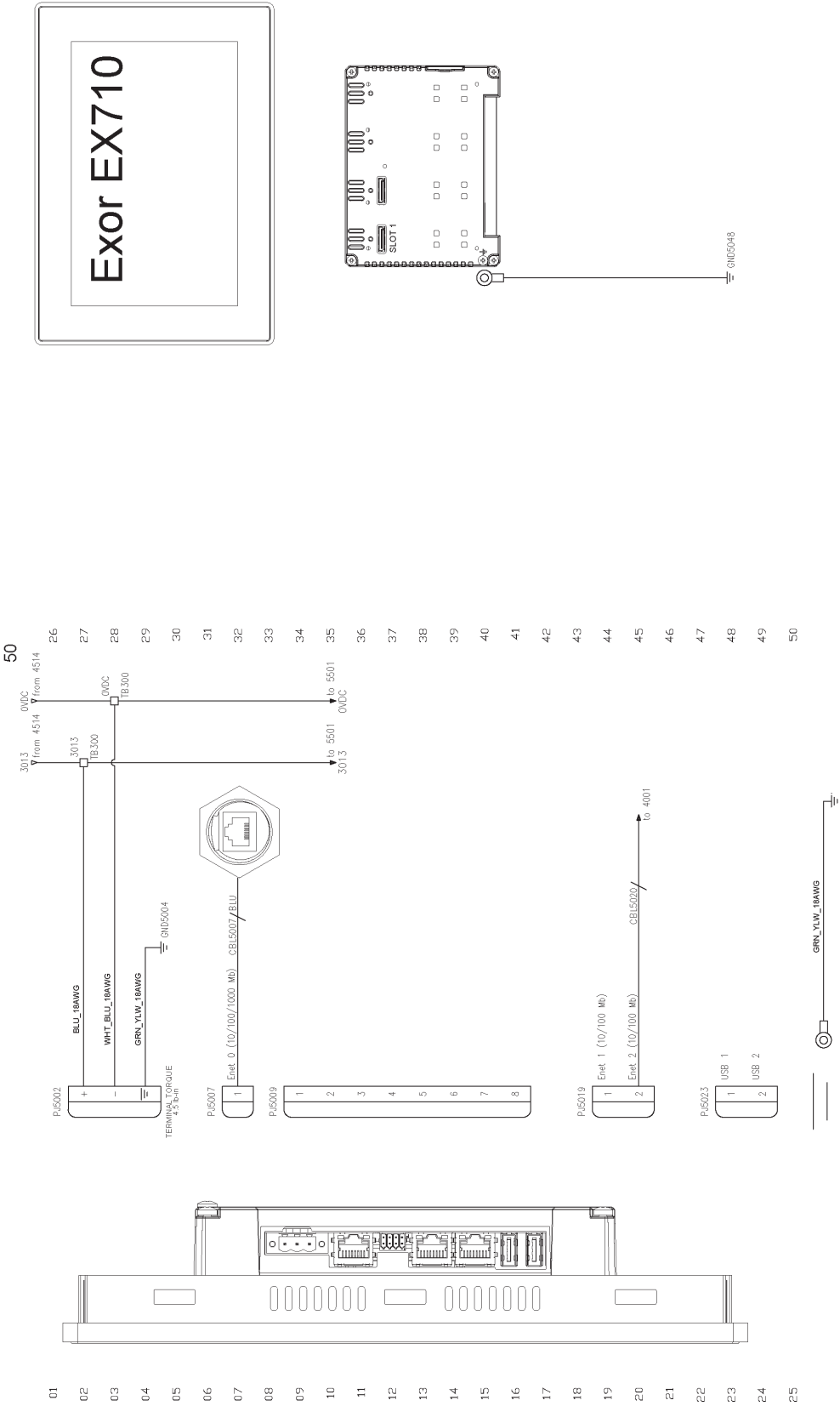
|         | Red | Yellow | Green | Cyan | Blue | Magenta | White |
|---------|-----|--------|-------|------|------|---------|-------|
| Input 1 | X   | X      |       |      |      | X       | X     |
| Input 2 |     | X      | X     | X    |      |         | X     |
| Input 3 |     |        |       | X    | X    | X       | X     |

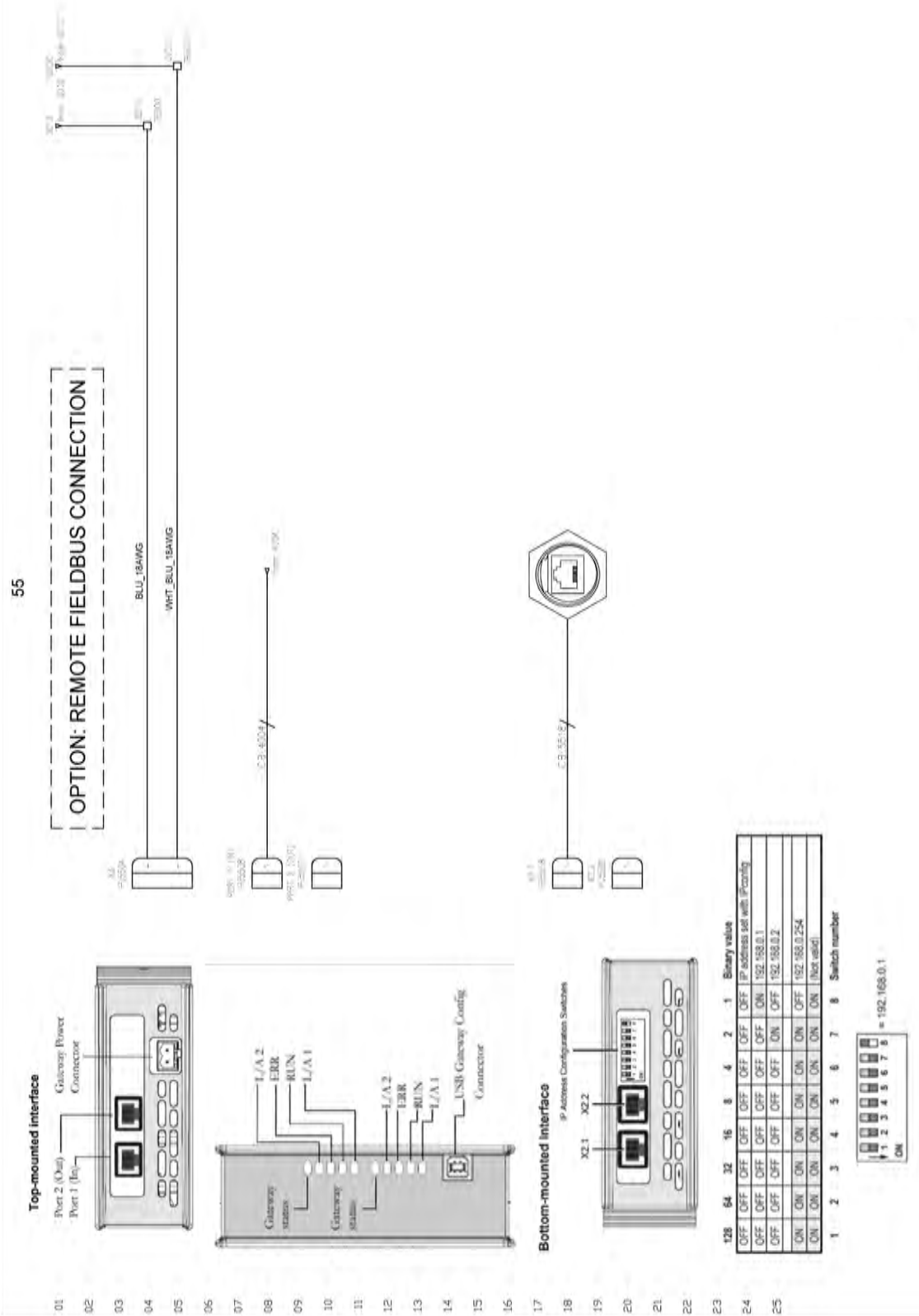


EL5152  
EL3174  
EL2809  
EL2809  
EL1808  
EK1100









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**MANUAL CHANGE SUMMARY**

| Date    | Description                                                                      | Version |
|---------|----------------------------------------------------------------------------------|---------|
| 08/2024 | 1st Draft. Split manual into four, put into new format, and restarted at Rev 1.0 | R1.0    |
| 05/2025 | Updated to Binks template                                                        | R2.0    |

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## WARRANTY POLICY

This product is covered by Binks' materials and workmanship limited warranty.

The use of parts or accessories from sources other than Binks will void all warranties. Failure to follow reasonable maintenance guidance provided can invalidate the warranty.

For specific warranty information, please contact Binks.

---

For technical assistance or to locate an authorized distributor, contact one of our international sales and customer support locations listed below.

| REGION                      | BINKS CONTACT          |
|-----------------------------|------------------------|
| Americas                    | Tel: 1-800-992-4657    |
| Europe, Africa, Middle East | Tel: +4401202571111    |
| India                       | marketingroa@binks.com |
| China                       | Tel: +862133730108     |
| Korea                       | Tel: +82313663303      |
| Japan                       | Tel: +81457856421      |
| Australia                   | Tel: +61085257555      |

## WARRANTY PAGE





# Binks

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