

Technical Manual Consumables Control Module (CCM10404715)

Revision 1.3

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1. Introduction

This document is the user manual for the Koenig & Bauer Coding GmbH Consumables Control Module (short: CCM 10404715).

This module is only used in the alphaJET 5 continuous inkjet printer (short AJ5; host product).

This module reads the RFID Tags on the consumables to ensure the correct types are used. Read data is provided to the AJ5 printer.



Figure 1 grouted CCM10404715 with cable and connector

2. System Overview

The CCM10404715 reads data from the RFID Tags on the consumable bottles of the AJ5 printer. The consumable bottles are filled with ink or solvent.

Not each solvent can be used with each ink. So the read data prevents the printer from using incorrect ink / solvent combinations.

In addition the data read by CCM10404715 provide the operation parameters of the consumables to AJ5 printer.

The module is designed for use in the AJ5 printer only. It's electronic is grouted. The module with cable is resistant against dust and fluids (especially solvents like MEK (Methyl Ethyl Ketone); ethanol and acetone).

The CMM10404715 is connected to the printer via a connector (WR- MPC3) with a special pinning. This prevents the module from use in other devices than AJ5 printers.

Data read from the Tag is shown in Printer's GUI.

3. Installation

The CCM10404715 is installed following these steps:

- Insert CCM10404715 in the bottle cage on the front door.
- Use two screws to fix CCM10404715 in the bottle cage
- Connect the CCM10404715's cable to the AJ5 printer



Figure 2 CCM10404715 installed in bottle cage.

After installation you can power up the AJ5 printer See AJ5 user manual for more information.

The 5V power source from the printer to the CCM10404715 is limited to 1A under all operating conditions. All safety standards according to IEC/EN 62368-1 are met.

4. Operation

The CCM10404715 reads the data from the tags on the consumables cyclic. It also recognizes when a tag is missing.

With each add of a consumable, the AJ5 printer increments a counter on the RFID tag. So the printer recognizes when a consumable is empty and generates a message for the user to change the consumable. The level of the consumables is shown in GUI (in percent)

Changing a consumable bottle requires the following steps:

- Open the front door
- Screw up the cap from the empty consumable bottle and remove it (with tube)
- Remove the bottle from bottle cage (After a while the printer should recognize the bottle is removed)
- Take a new, full consumable bottle (be careful to take a compatible ink or solvent type) and insert it in the bottle cage. Insure that the RFID tag is on the correct side near to the CCM10404715 (After a while the AJ5 printer should recognize the new bottle).
- Screw up the cap from the new bottle and insert the cap with tube from the Printer.
- Close the cap
- Close the front door
- Confirm in the Printer's GUI that the consumable has been changed

5. Compliance Statements

USA

The CCM10404715 has been tested to FCC 15.209 radiated limits for a class A digital device. The CCM10404715 will be installed within the printer which is tested as a Class A digital device.

This device complies with Part 15 of the FCC Rules. Operating is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by the party responsible for compliance could void the user`s authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

In accordance with FCC CFR47 §15.212, the printer (host product) label shall contain the following statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contains FCC ID: 2AWS3CCM10404715

Below is an example of the AJ5 (host product) label containing the statement above.



1. Technical Specification

Mechanical Dimensions	
RFID modul typical dimensions	L 110mm, W 75mm, H 12mm
Cable length	520mm
Material	
Antenna and PCB	Plated copper on FR4 PCB
Electrical	
Cable	Screened cable with 10 wires
Connector	16 pin WR-MPC3 Connector
Voltage	5V DC
Current	120mA typ.
RFID	
Operating Frequency	13,56 MHz +/- 7kHz
Tag Type	RFID ISO 14443A
Temperature Rating	
Operating Temperature Range	0°C - 85°C
Power Supply to CCM	
Maximum power	5W

2. Glossary

Term	Definition
CCM10404715	CunsumablesControlModule
AJ5	Alphajet Five Highend continuous inkjet printer
FCC	Federal Communications Commission
ISO	International Organisation for Standardisation
GUI	Graphical User Interface
MEK	Methyl Ethyl Ketone
PCB	Printed Circuit Board
RF	Radio Frequency
RFID	Radio Frequency Identification
SAR	Specific Absorption Rate