Mark①

Cable manufacturing is a highly competitive environment: final customers expect punctual, fast and high-quality deliveries. In order to reach this goal, companies need to take care of multiple aspects, including cable marking: manufacturer name, symbols or logos, lot numbers, date of production, cable type are elements commonly available on the cable sheating. Making a mistake while marking a cable can lead to multiple undesired side effects: high cost to delete the wrong marking (when possible), waste of raw materials, delay in the delivery, product rejection from the final customer and more. All these have a common denominator: the cable manufacturer loses money thus reducing the profitability of the business.

Elav **MarkOne** gives you the opportunity to dramatically decrease the probability of making a mistake while marking a cable, helping you from the creation of the mark till its delivery to the printer.

Cable manufacturers commonly have multiple inkjet printers manufactured from different companies: every printer manufacturer offers his own software interface, thus making the integration of the printing station with the central management system that manages the production (e.g. MES, SAP, etc.) so complex, to become not-profitable. This is true….till now. Elav MarkOne is built to interface all the most common inkjet printers, independently from the manufacturer. This allows cable manufacturers to use a single software to interface their printers making the integration with the shop floor management software easy and profitable.

MarkOne allows unified marking templates controlled at enterprise level, distributed to plant and line, for a centralized control of the printers, thus making faster changeovers, reducing the rework due to marking errors and ensuring the "right" information on the "right" cable.

MarkOne is composed of three software modules:
• *MarkOne Editor*
• *MarkOne Server*
• *MarkOne Driver*

EDITOR

MarkOne Editor is the marking design software used to realize simple to complex marks, independently from the printer manufacturer, optimizing product coding activities and meeting regulatory compliance.

It allows to:

• Design text messages, including font options like Italic, Bold, Font Size

• Manage one or multiple counters to be printed on the cable (Increment value, start value, reset value, number of digits)

• Define variables: the value of a variable will be defined from the production management software (e.g. MES, SAP, etc.) by mean of MarkOne Server interface or from the line operator by mean of MarkOne Driver user interface.
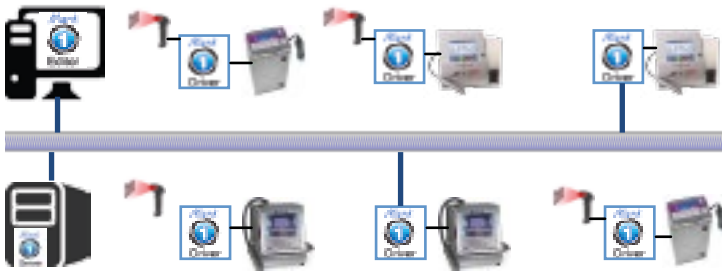
Example of variables are:

• type of cable (e.g. 3x1.5)

• Number of conductors

• Cable section

• Plant identifier

Variables can be added by mean of Mark Variable Archive functionality.

• Create logos and add logos to the mark

• Define the spaces between elements, both as number of spaces (related to a font) or as a distance in mm

• Define the mark repetition rate (e.g. 2 marks per meter)

• Transfer the mark layout and the logos to MarkOne Server and/or to each MarkOne Driver unit

SYSTEM ARCHITECTURE

OPTIONS

WIFI INTERFACE
Includes Wireless Access Point/Bridge/Client, IEEE 802.11 a/b/g Industrial Grade

DRIVER

MarkOne Driver is the interface with the inkjet printers (*) and with the line operators.

It allows to:

• Acquire a new mark (e.g. for the new production order) from a .XML file available on a shared folder or directly from a QR code read by mean of QR Code scanner connected to the MarkOne Driver Station

• Change the variable elements of the mark (previously defined from MarkOne Editor)

• Display a preview of the mark that will be transferred to the printer

• Edit and display the setup of the printer

• Transfer to the printer all the information related to the marking, using a different interface according to the selected printer (e.g. Ethernet, RS232, RS485)

By mean of MarkOne editor, line operators can easily associate a marking to a production order (e.g. by printing a QR code on the production order itself) obtaining the correct mark without having to manually edit it, thus reducing to the bottom any possible mistake.

SERVER

MarkOne Server is the interface between the shop floor management system (e.g. MES, SAP, etc.) and MarkOne Driver stations; it a software service typically running on a server 24/7.

The mark layout created by mean of MarkOne Editor is shared with MarkOne Server.

Every time a new production order is generated from the shop floor management software, MarkOne Server performs the following actions:

• Parsing of the production order (e.g. from a known .XML file format)

• Selection of the mark layout as stated in the order

• Assignation of a value to variable fields

• Generation of the marking information

The marking information (i.e. the marking that need to be used for the relevant production order) can be transferred to MarkOne Driver by mean of:

• QR Code saved as image (.png)

• XML file ready to be acquired from the MarkOne Driver

Using variable fields let operators dramatically reduce the number of different mark layouts.

(*) Actually MarkOne supports the following printers: Markem-Imaje 9040, Leibinger Jet3 and Jet3Up, Zanasi 4500

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