Introduction

The application needs for the use a IMP controller, AC synchronous servo-motors with 50 polar torques and integrated electronics of SM4A/SM5A series together with SW5A4085 drivers for the labelling dispensers management.

IMP controller can operate as isolated stand-alone unit or can interface itself with machine's PLC through the following bus:
- Profinet I/O
- EtherCAT
- Ethernet Modbus TCP/IP

The whole system can be configured in a fast and simple way thanks to specific configuration software for Windows operation systems (DCPM Configurator) supplied by Ever Elettronica and integrated in IDE T.R.I.P.O.S. G.W.
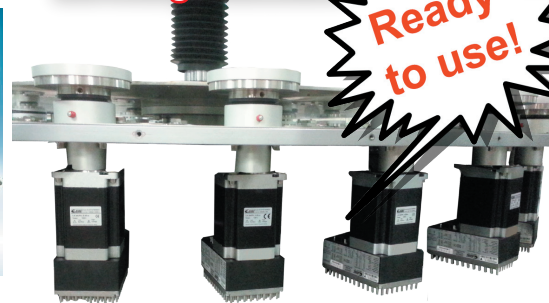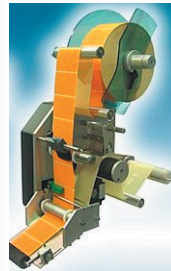
The "DCPM Configurator", beside allowing a simple and fast configuration of the system, provide the possibility of a remote support via Web.

Labelling dispensers features

- **Number of controllable labelling dispensers:**
  possibility to create and control systems from 1 up to 5 labelling dispensers.

- **Motor type for dispenser movement**:
  stepper motor with high number of poles or BLAC motor.

- **Labelling Max speed:**
  according to the type of motors and drives can be reached up to 150 mt./min.

- **Label eject error:**
  less than 1mm.

- **Carousel synchronization:**
  perfect synchronism between product speed and label eject speed, also during fast oscillations of the carousel speed.

- **Advanced features:**
  single or multilabel ejection, missing label recovery, product length detection, programmable filters for start/stop signals.

4.0 edition DCPM Solution for plates and labelling dispensers management of a rotary labelling machine

Ready to use!

Digital management of rotary labelling machines

- Main characteristics:

√ Up to 30 plates and 5 labelling dispensers supported

√ Plate's programmable electronic cam

√ Homing controls

√ Advanced modality of orientation

√ Orientation's controls

√ Product presence (no product no motion)

√ Fast and easy configuration

√ Compact size

√ Remote support on Web
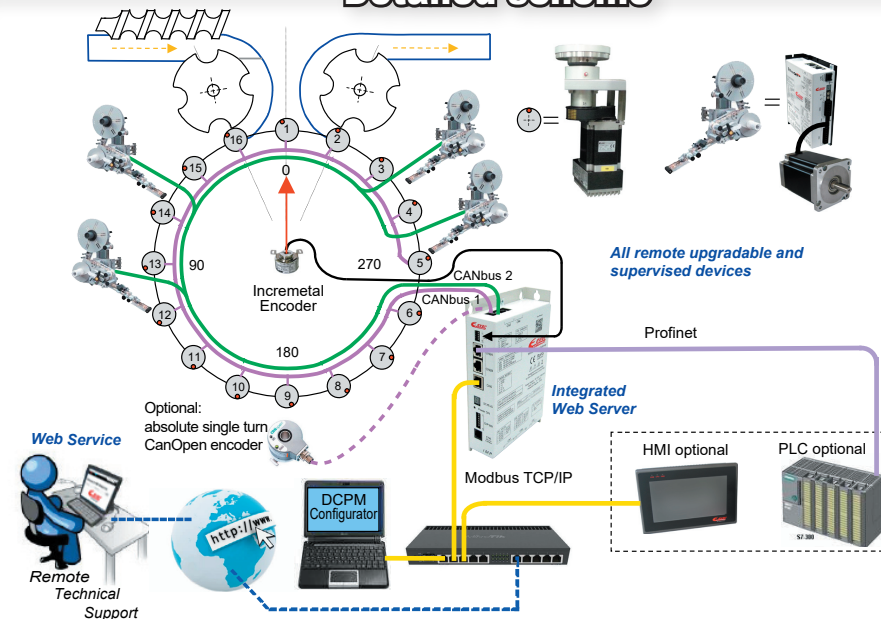
√ Easy integration with machine's PLC (if required).

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the clever drive

Plates functionalities

- **Number of controllable plates:**
  can be created and controlled systems from 1 to 30 plates.

- **Type of motor for plate's movement:**
  servo-motor with high number of poles and integrated electronics.

- **Plate's motor max speed:**
  each plate can reach a 1500 rpm speed.

- **Cam profile of the plate:**
  very easy calibration: the angular position of the plate has to be settled for every carousel grade. The controller will automatically execute the interpolation between points.

- **Homing function of the plate:**
  it can be activated at a specific angle of the caruosel. As homing signal can be used the signal of zero integrated in SM4A/SM5A drive or an external sensor that detects the plate's position. A different offset can be set for each plate.

- **Centering function:**
  it can be activated at a specific angle of the caruosel and there are two modalities:
  a) nick research on the product.
  b) label research on the product and positioning to the center of the label.

- **Orientation function:**
  it can be activated at a specific angle of the programmable carousel. It is possible to program up to 3 orientations managed by as many input connected to IMP controller.

- **Product presence function:**
  it can be activated at a specific angle of the programmable carousel. If the product hasn't been detected (IMP input), the plate stops until the following carousel orientation.

- **Absolute Encoder Option:**
  an absolute encoder with CANopen interface can be used to detect the position of the carousel during the starting.

HMI project for DCPM

Detailed scheme

All remote upgradable and supervised devices

Web Service

Remote Technical Support

Optional: absolute single turn CanOpen encoder

Incremetal Encoder

CANbus 2
CANbus 1

Integrated Web Server

DCPM Configurator

Modbus TCP/IP

Profinet

HMI optional   PLC optional

Required devices for the plate's control

Type of device	Motion controller		Integrated drive	Driver with HE stepper motor	IDE Software for Windows PC	HMI Touch Screen	Incremental encoder	Absolute encoder (optional)
Code	IMPW1100C1001H IMPW1100C1001L	Ethernet Modbus TCT/IP CANbus	SM5A485PC023z10 SM4A342PC24z50	SW5A4085C2N1-00-c0390 + Motore MT34HExx	LC/TRIPOS_4	HMIVT8071iEc1000	SE1000AA10030	Kuebler 8.58.78.5622.2113
	IMPW11T0C1001H IMPW11T0C1001L	Ethernet Modbus TCT/IP Profinet CANbus						
	IMPW21H0C1001H IMPW21H0C1001L	Ethernet Modbus TCT/IP EtherCAT CANbus						
Image								
Description	Controller with complete pre-installed software Digital Carousel Plate Management. The controller manages up to 30 plates (H version) or up to 10 plates (L version).		Servo-motor and drive integrated in only one device for the movement of each plate. The system can be built in direct drive or with a return pulley with relation 1:2 or 1:3.	Driver and High Efficiency stepper motor (4,5-12,5 Nm) or brushless AC motor for the labelling dispensers management. The system can be mounted in direct drive or with a pulley ratio 1:2-1:3.	USB key with Tripos environment license + DCPM extension to be bought just one time. The USB key allows the client to use the configuration environment DCPM, the IDE e3PLC programming environment and to benefit of Web remote support. (*) For the source code, contact Ever Elettronica.	HMI with complete pre-installed software for the configuration and for the supervision of the application both in italian and english languages.	Incremental encoder 1000 lpt to be built on the carousel.	Absolute encoder with CAN bus interface to be built on the carousel. CANopen protocol DS 406 v3.1.

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