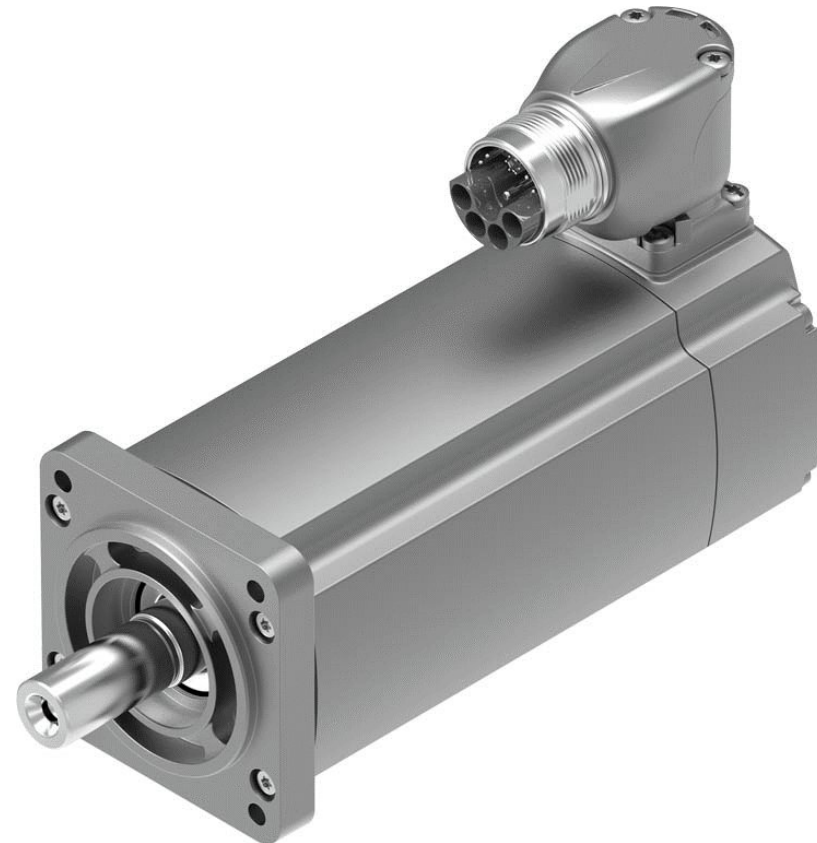


EMMT-AS – Servo Motor – Customer Presentation

1. **Product overview**
2. **Product features/Benefit**
3. **Arguments & Tools / Support**



1. Product overview EMMT-AS & EMMB-AS

Festo starts producing its own motors with servo motors series EMMT-AS.

We start with the EMMT-AS series in 3 sizes: (60/80/100 mm flange dimension) in the power range from 190 W ... 2,1 kW (M0: 0,6 Nm ... 10,8 Nm).

Size 60 is already released, followed with the planned release for the sizes 80 & 100 by the end of 2019.

Further EMMT-AS sizes and versions will follow up to 12 kW.

We position the EMMT-AS motors as our "Technology Line" for applications and customers with higher requirements and demands.

By this we mean:
Environmental conditions, connection technology (OCP - One Cable Plug), performance, overload capacity and variance in the versions.

In the demarcation / differentiation to this, we also have the servomotors of the EMMB-AS series, which we position as the "Basic Line".



1. Product overview EMMT-AS & EMMB-AS

EMMT-AS Synchrony Servo Motor:



- 6 flange sizes - within 50W ... 12kW
- EMMT-AS (-40)* / -60 / -80 / -100 / (-140 / -190)*
- Asian motor flange and shaft sizes
- Each size in up to 4 length
- Different winding characteristics
- OCP – Cables (One Cable Plug)
- Encoder - single and multi turn absolute – battery less
- With or w/o holding brake
- Higher temperature range / less derating
- Supports max. cable length up to 100m
- List prize index: 100%

)* in planning, no schedule yet

EMMB-AS Synchrony Servo Motor:

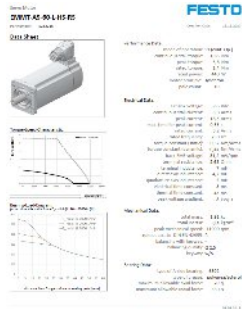


- 3 flange sizes - within 100W ... 750W
- EMMB-AS-40 / -60 / -80
- Aligned to Asian motor flange and shaft sizes
- Up to 2 length
- Standard winding
- Cable tail with plug
- Encoder - single and multi turn absolute – battery
- With and w/o holding brake
- Lower temperature range / more derating
- Supports max. cable length up to 25m
- List prize index: 70%

1. Product overview EMMT-AS & EMMB-AS

Technical Data (basic):

EMME-AS	U_zk	M_0	M_N	M_max	n_N	n_max	I_0	I_N	I_max	P_N
	V	Nm	Nm	Nm	1/min	1/min	A	A	A	W
EMMT-AS-60-S-LS-RS	325	0,7	0,64	1,6	3000	7100	1,7	1,6	5,4	200
EMMT-AS-60-S-LS-RSB	325	0,66	0,6	1,6	3000	7100	1,6	1,4	5,4	190
EMMT-AS-60-M-LS-RS	325	1,24	1,1	3,4	3000	6800	2,8	2,4	11	350
EMMT-AS-60-M-LS-RSB	325	1,15	1	3,4	3000	6800	2,5	2,2	11	310
EMMT-AS-60-L-LS-RS	325	1,66	1,4	5,6	3000	6800	3,8	3,2	18,3	440
EMMT-AS-60-L-LS-RSB	325	1,56	1,3	5,6	3000	6800	3,5	3	18,3	410
EMMT-AS-60-S-HS-RS	565	0,7	0,64	1,6	3000	12500	1,7	1,6	5,4	200
EMMT-AS-60-S-HS-RSB	565	0,66	0,6	1,6	3000	12500	1,6	1,4	5,4	190
EMMT-AS-60-M-HS-RS	565	1,24	1,1	3,4	3000	11800	2,7	2,4	11	350
EMMT-AS-60-M-HS-RSB	565	1,15	1	3,4	3000	11800	2,5	2,2	11	310
EMMT-AS-60-L-HS-RS	565	1,66	1,4	5,6	3000	11900	3,8	3,2	18,3	440
EMMT-AS-60-L-HS-RSB	565	1,56	1,3	5,6	3000	11900	3,5	3	18,3	410



Technical Data (basic):

EMMB-AS	U_zk	M_0	M_N	M_max	n_N	n_max	I_0	I_N	I_max	P_N
	V	Nm	Nm	Nm	1/min	1/min	A	A	A	W
EMMB-AS-60-02-S30S	300	0,7	0,64	1,92	3000	6000	1,5	1,4	4,2	200
EMMB-AS-60-02-S30SB	300	0,7	0,64	1,92	3000	6000	1,5	1,4	4,2	200
EMMB-AS-60-04-S30S	300	1,4	1,27	3,81	3000	6000	2,6	2,4	7,2	400
EMMB-AS-60-04-S30SB	300	1,4	1,27	3,81	3000	6000	2,6	2,4	7,2	400



1. Product overview EMMT-AS

EMMT-AS Synchronous Servo Motor:

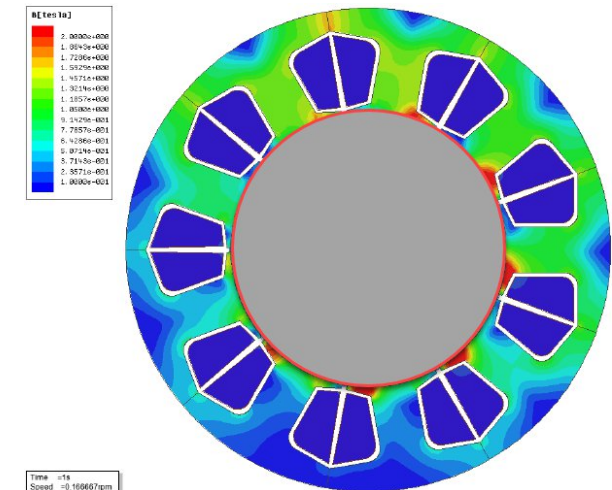


The electromagnetic motor design is optimized for use with Festo automation components and is characterized, for example, by an extremely low cogging torque, which allows good controllability and good tracking accuracy in positioning tasks.

The entire motor series uses high-energy, corrosion-resistant and high-temperature NdFeB magnets, which ensure high torques and efficiencies. Servo applications increasingly require good tracking accuracy during the movement. At the same time, a good linearity between current and torque should prevail for good controllability even in the small signal range.

The EMMT series motors have been specially de-signed to do so by choosing a magnetic circuit de-sign that has a semi-closed stator and rotor groove design with embedded magnets in the rotor iron.

As a result, the Festo motor of the EMMT series has an extremely low cogging torque.



1. Product overview EMMT-AS

EMMT-AS Synchronous Servo Motor:



Technical key data EMMT-AS:

Smooth, 2-layer painted surface in Festo silver

Degree of protection IP 67: entire housing with connection technology (connected state)

Degree of protection IP 40: on the shaft, optionally with PTFE sealing ring IP 67 (also suitable for dry running)

Motor integrated temperature measurement, which is transmitted via the encoder protocol, interference-proof, digital.

Digital type plate, all important motor data are stored in the motor and can be read out by the servo drive during

Digital single turn absolute Encoder EnDat 2.2® with digital type plate; Better control characteristics, better synchronization (especially at low speeds - constant speed), via the digital type plate the servo-drive recognizes the motor - faster, easier and safe commissioning.

Optional digital multi turn absolute encoder EnDat 2.2 ®, absolute within 4096 motor revolutions (even when powered off). If motor rotations are detected and resolved, no reference travel is required after "Power On".

Approvals:

- CE mark according to EU Low Voltage Directive, EU EMC Directive, EU-RoHS-RL
- c UL us - Recognized (OL), File-Nr: E342973; RCM (Regulatory Compliance Mark)

2. Product features/Benefit EMMT-AS

- **Coordinated motor program for our mechanical drive components.**

--> Safety and convenience: The customer gets the power he needs, easy to build in/on, fit, easy to put into operation and everything from a single source.

- **Smooth, 2-layer painted surface in protection class IP 67, shaft optional up to IP 67 (dry running suitable – short time)**

--> Safety: easy to clean and safe to use

- **Award-winning design: iF D**

--> Image: good looks and feel



ard 2



- **Very low cogging torque / cogging**

--> Performance and reliability: good controllability and true tracking in positioning tasks

- **High power density**

--> Performance and efficiency: more power from smaller space -

less space required, better for cultivation and mechanical integration, thereby z. B. possible in-crease of the payload within a portal system.

- **Motor integrated temperature measurement**

--> Safety and reliability: digitally transmitted and interference-proof, additional monitoring of the motor temperature to I²t monitoring in the motor controller

2. Product features/Benefit EMMT-AS

- **Digital type plate**

--> Convenience: all important motor data are stored in the motor and can be read out by the servo drive controller during commissioning. Thereby simple and fast commissioning.

- **Optimized connection technology OCP (One Cable Plug)**

--> Convenience and cost-effectiveness: only one motor cable for power, signal and holding brake (optional) - less space required, only one cable for easier and better routing, cost reduction.

- **Maintenance-free operation - bearings with life-time lubrication (~> 20,000 h); This applies to the engine as well as the optionally available gear boxes.**

- **Dimensioning and selection of the suitable motor for the application with the axis by using PositioningDrive.**

--> Convenience and economy: Safe and fast drive design.



Available

CMMT & Motors -
integration in
PositioningDrives



Available

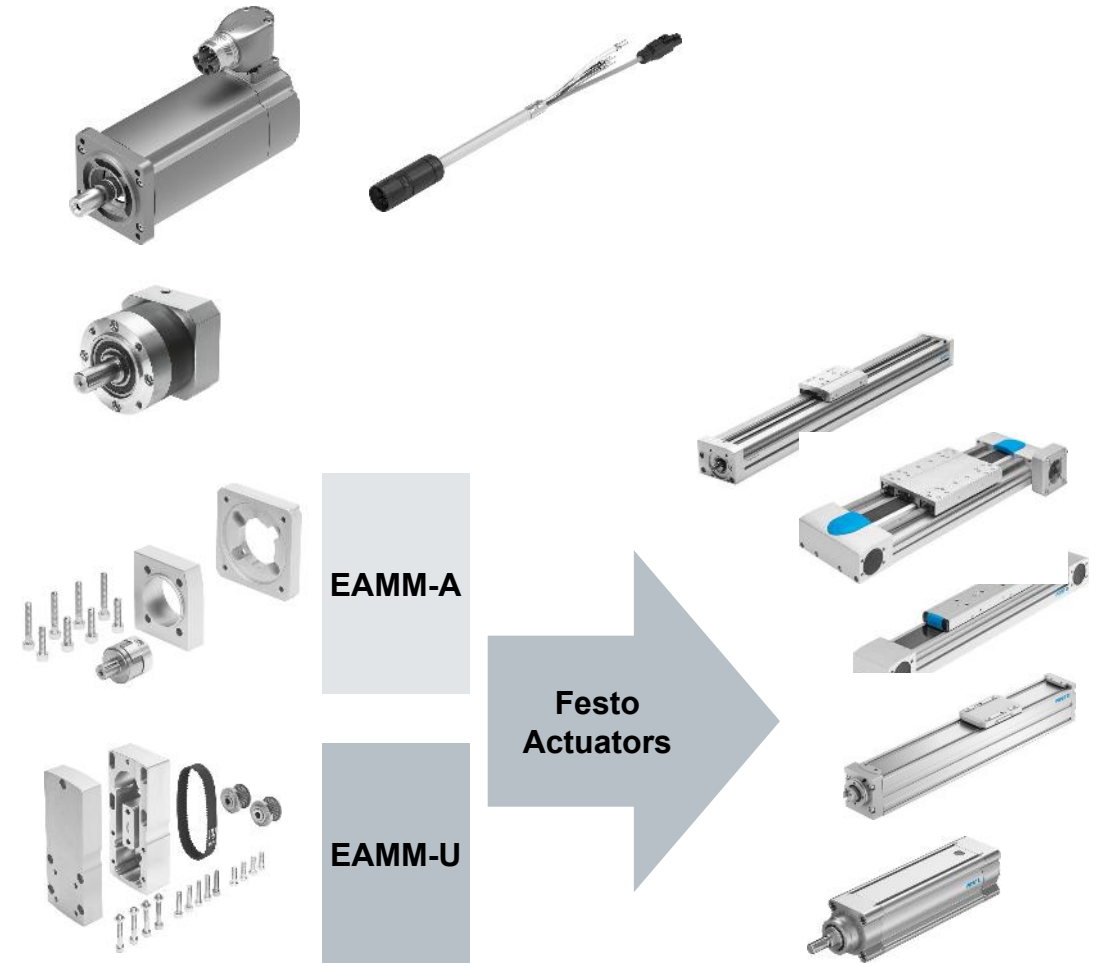
CMMT & Motors -
integration in
Automation Suite

2. Product features/Benefit EMMT-AS

- **Stocked accessory program with:**

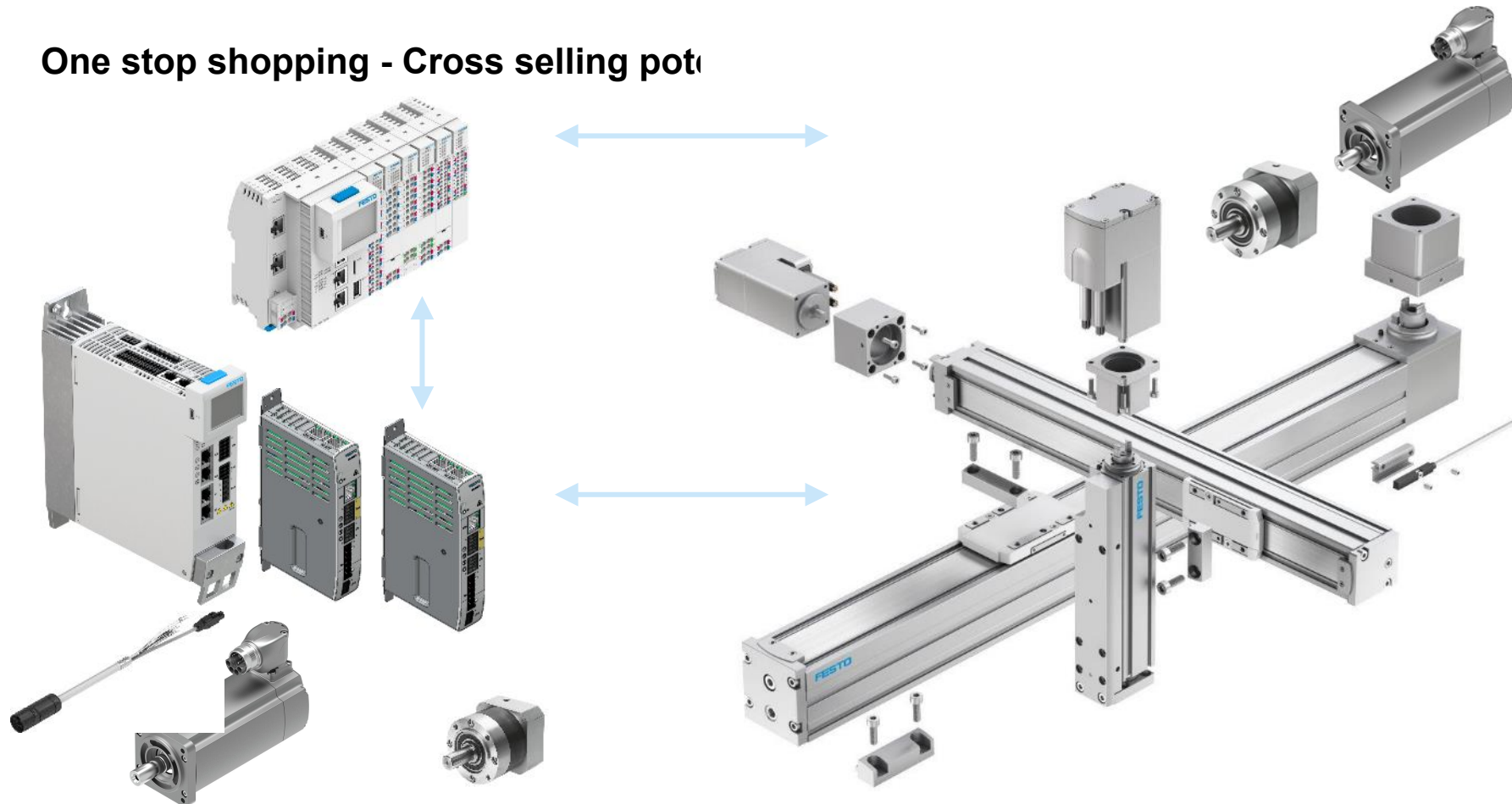
--> Convenience and service:

- NEBM, Cost-optimized OCP (One Cable Plug) motor cable program, suitable for drag chains
- EMGA, Standard Eco gearbox in $i = 3$ & 5 - Other gear types, versions and gear ratios on request.
- EAMM-A, Axial kits for extended combination options for mounting Mechanics to motor, also in IP65 (-S1 version) - depending on the mechanics
- EAMM-U, new parallel kits for extended combination options for mounting mechanics to motor, now also in IP65 (-S1 version) - depending on the mechanics



2. Product features/Benefit EMMT-AS

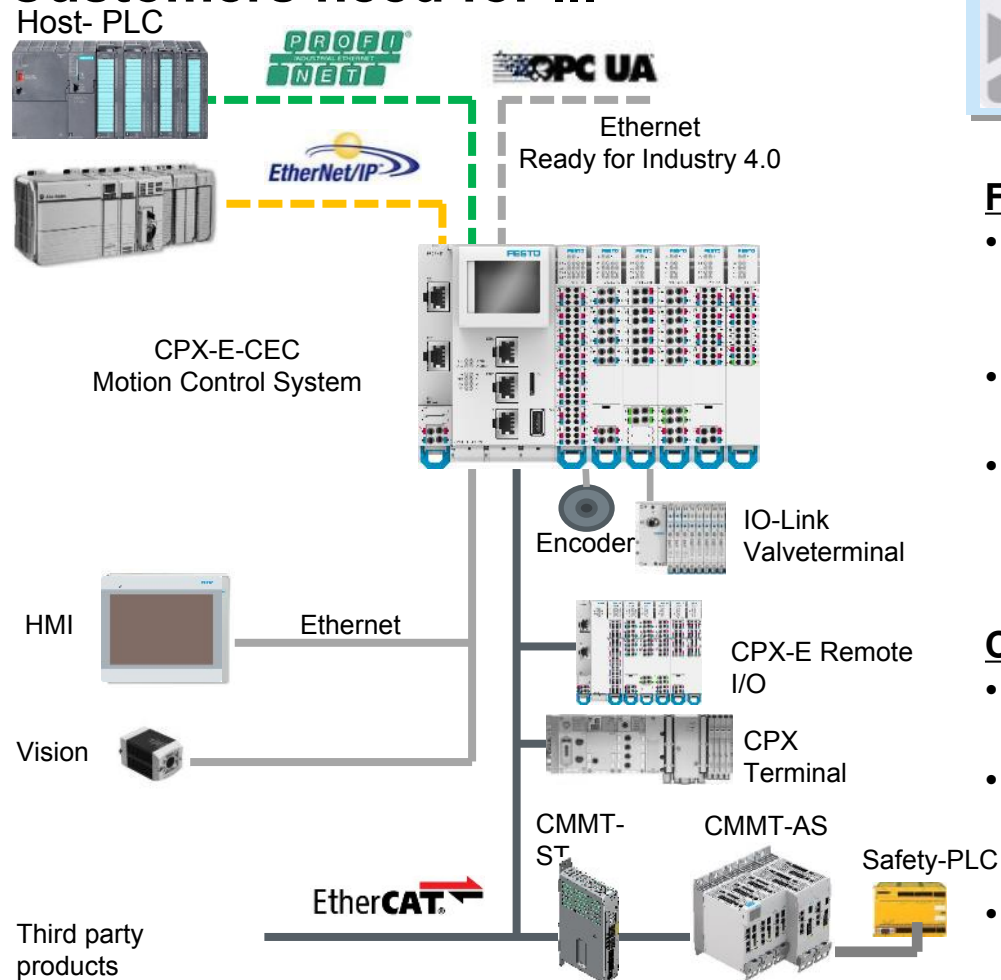
One stop shopping - Cross selling potential



Cross selling

- Today: Axes
- Today: Axes ↔ motor
- Today: Axes ↔ motor ↔ drive ↔ PLC
- Today: Axes ↔ motor ↔ drive ↔ PLC
- Tomorrow: PLC ↔ drive ↔ motor ↔ axes ↔ sensors
- Tomorrow: Drive ↔ motor ↔ axes
- Tomorrow: PLC ↔ drive ↔ motor ↔ axes

2. Customers need for ...



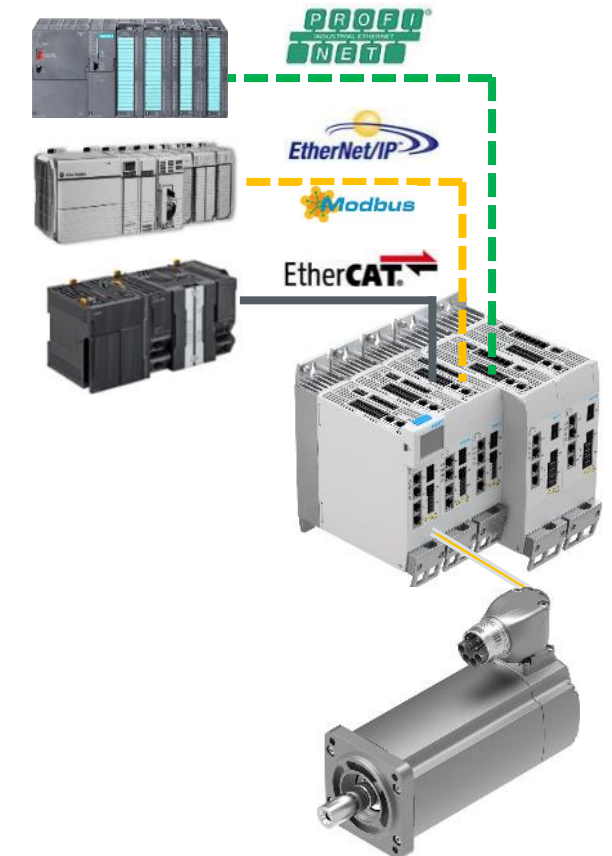
Festo Automation Suite:

- Functionality of FCT, FFT, FMT & CODESYS now combined in **one software**
- **Intuitive**, consistent user interface design
- Considerable **reduction of time and efforts** for commissioning of Festo components

CPX-E Automation system:

- **Compact** control and Remote IO-System
- PLC/ Motion functionality **Integrated host communication** (PROFINET, EtherNet/IP)
- **Fast** EtherCAT master interface

CMMT-AS:



Festo AG & Co. KG

A photograph of two men in business suits standing in a modern industrial facility, likely a factory or warehouse. They are facing each other and smiling, appearing to be in a friendly conversation. The background shows complex industrial machinery, conveyor belts, and structural elements of the building. A semi-transparent grey banner is overlaid across the middle of the image, containing the text "Thank you for your attention".

Thank you for your attention