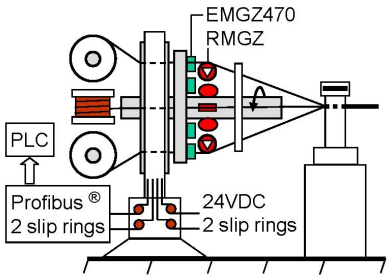
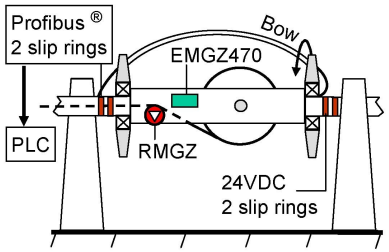
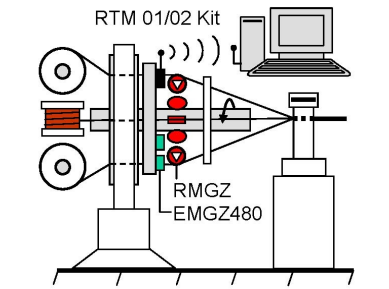
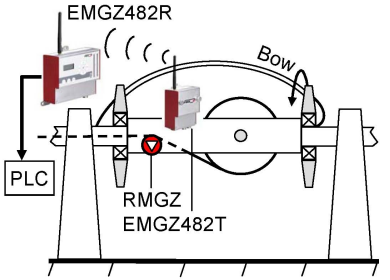
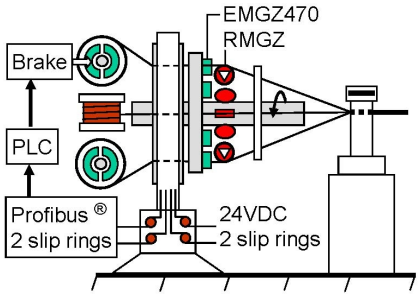
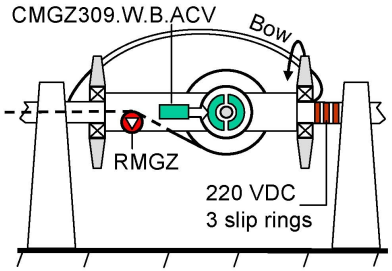
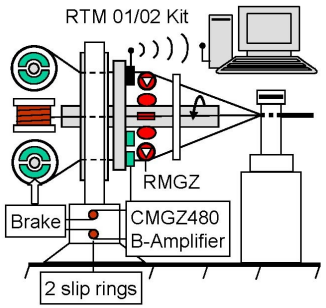
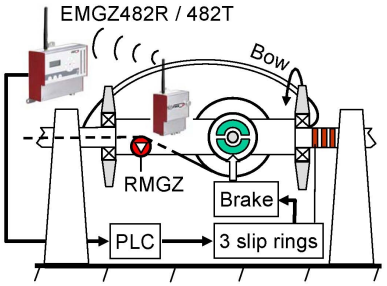
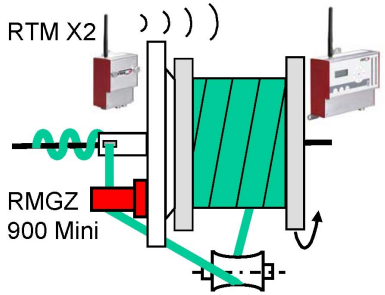
Wire & Cable Applications with FMS Products

Application	Applications	Schematics	FMS Products	Pro and Cons
Tension Monitoring without RTM	Cage Stranders Tube Stranders		Force Sensors: RMGZ100…800 Series Electronics: EMGZ470, 473 Profibus amplifiers	- minimum 4 slip rings required - high installation cost - wear of slip rings - critical signal quality (noise) - PLC with Profibus-I/F required - no quality or production protocol available
	Bunchers Twisters Bow-type Stranders		Force Sensors: RMGZ100…600 Series Profibus: EMGZ470/3 Analogue amps.: EMGZ306.581820 EMGZ307	- minimum 4 slip rings required - high installation cost - wear of slip rings - critical signal quality (noise) - PLC with Profibus-I/F required + also with analogue amp possible, but signal noise higher
Tension Monitoring with RTM	Cage Stranders Tube Stranders		Force Sensors: RMGZ100…800 Series Electronics: RTM01/02 System, CAN-Bus: EMGZ480	+ no slip rings + very good signal quality + up to 32 channels per RTM01/02 + no PLC required + excellent production reporting + always all production data under control - industrial PC based RTM system
	Bunchers Twisters Bow-type Stranders		Force Sensors: RMGZ100…600 Series Electronics: RTM X2 System	+ very economic solution + no slip rings + very good signal quality + no PLC required + always all production data under control - no production protocol capability - restricted to 2 channels

Application	Applications	Schematics	FMS Products	Pro and Cons
Close loop Tension Control without RTM	Cage Stranders Tube Stranders		Force Sensors: RMGZ100…800 Series Electronics: EMGZ470 Profibus amplifiers	- minimum 4 slip rings required - high installation cost - wear of slip rings - critical signal quality (noise) - PLC with Profibus-I/F required - no quality or production protocol capability - further 2 slips rings per cradle necessary for rewind control
	Bunchers Twisters Bow-type Stranders		Force Sensors: RMGZ100…600 Series Electronics: Close Loop Controller CMGZ309.W.B.ACV	+ relatively low system costs + high quality production - 3 slip rings required - demanding installation - wear of slip rings - no quality or production protocol capability
Close loop Tension Control with RTM	Cage Stranders Tube Stranders		Force Sensors: RMGZ100…800 Series Electronics: RTM01/02 System, Close Loop Controller: CMGZ480	+ very good signal quality + up to 32 channels per RTM01/02 + no PLC required + quality and production protocol + always all production data under control - industrial PC based RTM system - slip rings required (2 slips rings per cradle + 2 for supply)
	Bunchers Twisters Bow-type Stranders		Force Sensors: RMGZ100…800 Series Electronics: RTM X2 System	+ relatively low system costs + ideal solution for retrofits + high quality production - control via customer PLC - 3 slip rings per channel required - wear of slip rings - no quality or production protocol capability

Application	Applications	Schematics	FMS Products	Pro and Cons
Material Taping Twisting 2 cables	Cage Stranders Simple machines		Force Sensors: RMGZ900 Mini Electronics: RTM X2 System or Analogue amps: EMGZ306.581820 EMGZ307	+ very economic solution + simplicity of system + high quality production + also in combination with analogue amplifier possible - if not using RTM X2, tension reading over slip rings (noise) – restricted to 2 channels –