

**RNA**  
*We handle it.*



## COMPONENTS

### ***Control Units for Vibratory Drives***

- *Compact Control Units*
- *Frequency Control Units*
- *Module Technology*
- *Control Units Applications*

## Rhein-Nadel Automation GmbH



Reichsweg 19-23  
52068 Aachen  
Tel. Sales: +49 (0)241 / 51 09-0  
Fax Sales: +49 (0)241 / 51 09-219  
Email: [vertrieb@rna.de](mailto:vertrieb@rna.de)

**[www.RNA.de](http://www.RNA.de)**

### Welcome to RNA Germany – your market leader in the field of feeding technology!

Rhein-Nadel Automation GmbH is a traditional family-owned enterprise that has its head office in Aachen, Germany. With seven production locations and an international network of partners, we are there for you worldwide. For many decades now, our name has stood for top-class performance regarding technology, quality and reliability.

Our two business segments are the development and manufacture of complete custom-made feeding systems and their corresponding components.

With many years experience in the automation and parts handling industry and nearly 2000 complete feeding systems supplied annually, RNA has earned a reputation for the most robust and reliable equipment on the market. Our commitment to research and development maintains our position at the leading edge of feeding technology. We provide an extensive range of the most efficient drive units, controllers and accessories for either standard or special requirements. All equipment is manufactured to the highest standards of quality upon which we have built our reputation. We offer first class service and standard equipment, immediate delivery from stock. Our product range is manufactured to meet the highest demands of the food and pharmaceutical industries and also includes equipment manufactured to UL and CSA standards. Quality has always been of central importance to RNA, with each employee committed to make their own personal contribution to the achievement of quality standards and customer satisfaction. We know that long term success in business can only be achieved by providing high quality equipment, which fulfils the customer's requirements.



## RNA Control Units

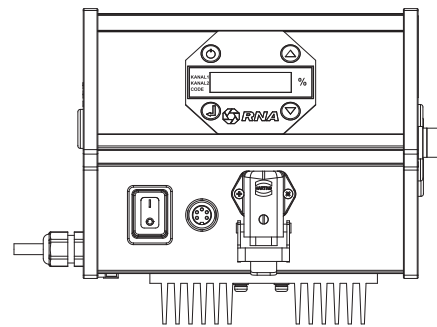
RNA delivers optimal control concepts to supply all vibratory drives from the mains. These range from low cost units to self-calibrating high-tech units with microprocessor control.

Our development is based on more than 45 years of experience in feeding technology. We have set the objective to always offer the user for his feeding application the optimal control unit regarding efficiency and handling. This allows control tasks for feeding systems without superordinated control systems being implemented.

RNA control units are optimally designed to match the magnetic performance of our bowl and linear drives.

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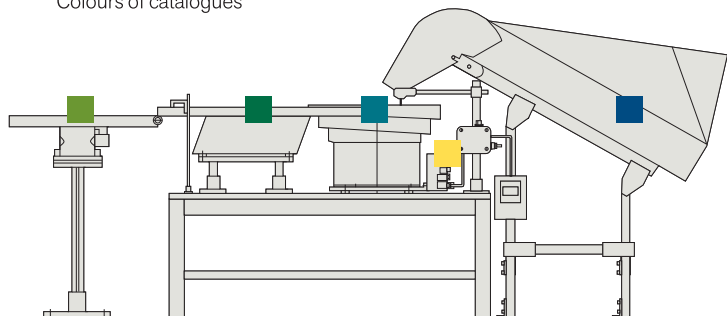


Technical Data is subject to change.  
All measurements are stated in mm.

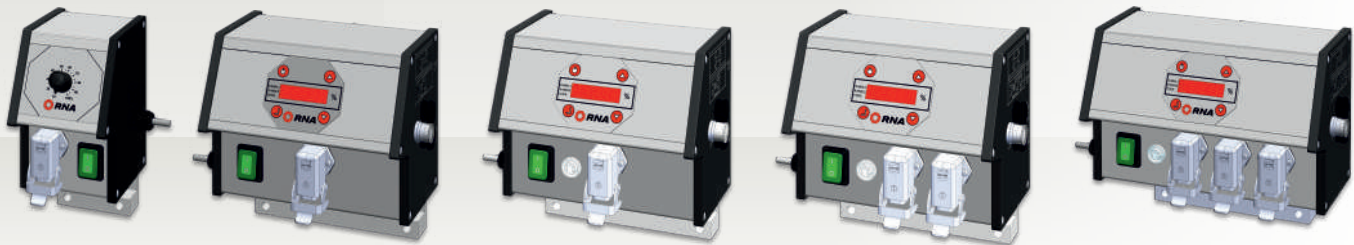
### More product catalogues from the RNA range of equipment

Conveyors	
Linear feeders	
Bowl feeders	
Control boxes	
Bulk hoppers	
Step feeders (not shown to the right)	

Colours of catalogues



## Compact Control Units Selection Matrix



ESG 1000

ESG 2000

ESK 2000

ESK 2001

ESK 2002

### Housing Technology

The ESG and ESK models of the RNA housing technology series for one to three drive units - for each application the optimal control technology.

Compact Control Units Type	ESG 1000	ESG 2000	ESK 2000	ESK 2001	ESK 2002
BF or LF or VH	⊗	⊗			
BF or LF or VH/BH with sensor			⊗		
BF and LF with sensor				⊗	
BF and VH/BH with sensor				⊗	
BF and LF and VH/BH with sensor					⊗
Application Examples					
Vibrating hopper type BVL 25 + level controller			⊗		
* SRC-N 400 + SLL 800 + level controller EFP 24 + buffer control EGF 80				⊗	
SRC-N 250 + SLL 400 + buffer control EGF 50 + belt hopper type BUW 25 + level controller EFP 24					⊗

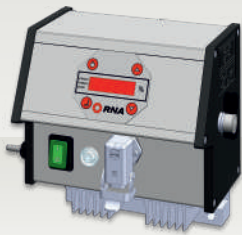
BF = Bowl Feeder / LF = Linear Feeder / VH = Vibrating Hopper / BH = Belt Hopper

All RNA compact control units are available in 110V and 230V power supply respectively.

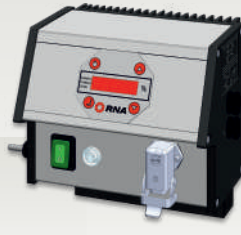
\*Remark:

Please note that the power consumption of the connected components, should never be above the power output of the control unit. This is especially true for application in a 110V power grid.

## Frequency Control Units Selection Matrix



ESR 2000



ESR 2500 / ESR 2800



ESR 3000-6



ESR 3000-12

### Frequency Technology

With the frequency control units of RNA the vibration frequency of drives can be regulated.

Frequency Control Units Type	ESR 2000	ESR 2500	ESR 2800	ESR 3000-6	ESR 3000-12
BF with alternating sorting bowls BF / LF / VH	⊗	⊗	⊗	⊗	⊗
BF or VH with different load weights		⊗	⊗		
BF or LF or VH/BH with sensor	⊗	⊗	⊗	⊗	⊗
Application Examples					
SRC-N 250 + 3 alternating sorting bowls	⊗	⊗			
SRC-N 800 + SLF 1000 (linear feeder SLF 1000 is operated separately with a compact control unit type ESG 1000 or ESG 2000)			⊗		
SRG-N 630 + sorting bowl with testing in Europe and operation in the USA		⊗	⊗		⊗

BF = Bowl Feeder / LF = Linear Feeder / VH = Vibrating Hopper / BH = Belt Hopper

For complex applications RNA also offers a SPS compact control unit Type ESS 2000 with 8 and 16 in- and outputs respectively (see page 13).

Remark:

We recommend the mechanical adjustment of the resonant frequency of the bowl and linear drives with the help of a frequency control unit.

## Module Technology Selection Matrix



ESM 906



ESM 910



ESM 3000-6



ESM 3000-16



EGM 32

## Control Units for Installation in Control Cabinets

Module Technology / Applications

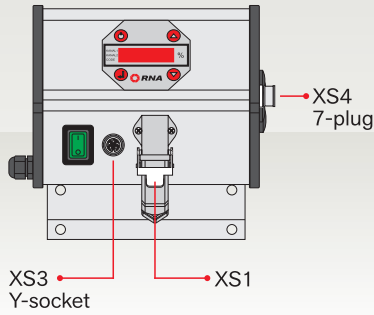
Module Technology Type	ESM 906	ESM 910	ESM 3000-6	ESM 3000-16	EGM 32
BF or LF or VH	✗	✗	✗	✗	
Applications					
Sensor amplifier for one bowl feeder or hopper with separate adjustable circuit time for material flow and filling level respectively.					✗

BF = Bowl Feeder / LF = Linear Feeder / VH = Vibrating Hopper / BH = Belt Hopper

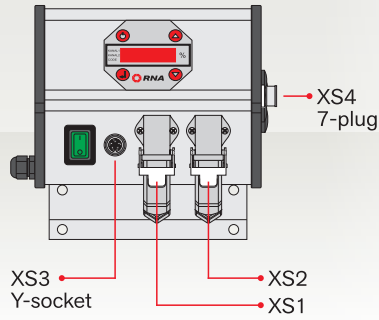
# Plug Connections



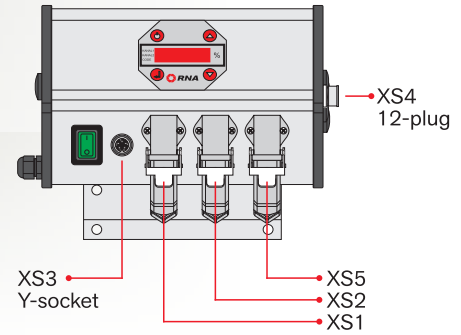
ESR / ESK 2000











ESK 2001



ESK 2002



Type	Control Units   Housing Technology				Control Units   Frequency Technology				Control Units   Module Technology			
	ESG 1000	ESG 2000	ESK 2000	ESK 2001	ESK 2002/10A ESK 2002/16A	ESR 2000	ESR 2500 ESR 2800	ESR 3000-6 ESR 3000-12	ESM 3000-6 ESM 3000-16	ESM 906	ESM 910	EGM 32
<b>Mains connection</b> Harting plug 4-pin 								⊗ XS1				
<b>Connection vibratory bowl and/or linear feeder</b> Harting plug 5-pin 	⊗ XS1	⊗ XS1	⊗ XS1	⊗ XS1 ⊗ XS2	⊗ XS1 ⊗ XS2 ⊗ XS5	⊗ XS1	⊗ XS1					
<b>Communication with general control</b> 7-pin plug 		⊗ XS4	⊗ XS4	⊗ XS4		⊗ XS4	⊗ XS4					
<b>Sensor connection 1 Sensor</b> 5-pin plug 			⊗ XS3 Y-socket	⊗ XS3 Y-socket	⊗ XS3 Y-socket	⊗ XS3 Y-socket	⊗ XS3 Y-socket					
<b>Sensor connection 2 Sensors</b> Sensor adapter + 4-pin plug 			⊗ Y-socket	⊗ Y-socket	⊗ Y-socket	⊗ Y-socket						
<b>Communication with general control system</b> 12-pin plug 					⊗ XS4							
<b>Communication with general control system</b> 4-pin plug 								⊗ XS3-7 according to configuration				
<b>Communication Vibratory Bowl and Linear Feeders</b> 9-pin plug 								⊗ XS2 with ESR 3000-12				

## Compact Control Units

The compact control units type **ESG 1000** and **ESG 2000** are for the operation of a vibratory bowl or linear feeder.

The compact control units type **ESK 2000** are for the operation of one vibratory bowl or linear feeder, or for the connection of one AC motor with constant speed, plus connection of two sensors to monitor and control the material flow.

The compact control units type **ESK 2001** and **ESK 2002** are for the operation of vibratory bowl and linear feeders with level controller or sensor (see also page 04).

RNA Compact Control Units / Tabularisation of Equipment Features

Features	ESG 1000	ESG 2000	ESK 2000	ESK 2001	ESK 2002
Power output for vibratory bowl or linear feeder	1	1	1	2	3
Switchable AC motor			⊗	⊗	⊗
Internal switching to 230V or 110V mains voltage	⊗				
Automatic switching to 230V or 110V mains voltage		⊗	⊗	⊗	⊗
Output power with potentiometer, adjustable on front panel	⊗				
Simple menu navigation to change the setting parameters		⊗	⊗	⊗	⊗
Membrane keypad for setting and varying the working values in the setting menus		⊗	⊗	⊗	⊗
Manual adjustment of the transient and decay responses by changing the time constants; internal potentiometer	⊗				
Manual adjustment of the transient and decay responses by changing the time constants		⊗	⊗	⊗	⊗
External activation 24V DC/potential-free contact	⊗				
External activation 24V DC per channel		⊗	⊗	⊗	⊗
Two relay outputs and two optocouplers for status messages and further links		⊗	⊗	⊗	
Two relay outputs and four optocouplers for each power output for status messages and further links					⊗
Messages from the control unit: · Operational = controller switched on · Active = controller running		⊗	⊗	⊗	
Messages from the control unit: · Operational = controller switched on - per channel · Active = controller running - per channel					⊗
Possibility of connecting external devices, e.g. solenoid valve			⊗	⊗	⊗
Connection of maximum two sensors, which function and switching behaviour being programmable. (Supply voltage 24V DC 10mA)			⊗	⊗	⊗
Plug-in connections for RNA vibratory bowl and linear feeders	⊗	⊗			
Plug-in connections for RNA vibratory bowl and linear feeders, motors, sensors and communication			⊗	⊗	⊗
Double-pole main switch	⊗	⊗	⊗	⊗	⊗
CE, EMV and CSA / UL	⊗	⊗	⊗	⊗	
CE, EMV					⊗



RNA Compact Control Units / Tabularisation of setting parameters:

Setting parameters	ESG 1000	ESG 2000	ESK 2000	ESK 2001	ESK 2002
Actuation of vibratory bowl or linear feeder					
· Vibration amplitude		⊗	⊗	⊗	⊗
· External release		⊗	⊗	⊗	⊗
· Signal direction of external release		⊗	⊗	⊗	⊗
· Soft start and time and soft stop time		⊗	⊗	⊗	⊗
Storing the programmed settings		⊗	⊗	⊗	⊗
Locking the settings against changes		⊗	⊗	⊗	⊗
Status display (control of the vibration amplitude)		⊗	⊗	⊗	⊗
Resetting to RNA factory setting		⊗	⊗	⊗	⊗
Output voltage min. revs / max. revs	⊗	⊗	⊗	⊗	⊗
Soft start of drive is adjustable	⊗	⊗	⊗	⊗	⊗
Setting sensor input 1 and sensor input 2					
· Inverting input of signal direction			⊗	⊗	⊗
· Time until switching on and switching off moment			⊗	⊗	⊗
Selecting the sensor links (up to 7 possibilities)			⊗	⊗	⊗
Setting the cycle monitors (monitoring of sensors 1 and/or 2)			⊗	⊗	⊗
Permanently programmed application examples			⊗	⊗	
Performance target with external voltage			⊗	⊗	
Channel 1/2/3 transposable from bowl/linear feeder to conveyor function			⊗	⊗	⊗

## Frequency Control Units

### The frequency control units type ESR 2000 and ESR 3000

are for the operation of one vibratory bowl or linear feeder and connection of two sensors for monitoring and controlling the material flow. At the same time the vibration frequency is manually adjustable (for example when using alternating sorting bowls with different load weights).

### With the frequency control units type ESR 2500 and ESR 2800

the exciter frequency (vibration frequency) of the vibratory drive is automatically adjusted for equalisation of the load-independent vibration behaviour.

#### RNA Frequency Control Units / Tabularisation of Equipment Features

Features	ESR 2000	ESR 2500 ESR 2800	ESR 3000
Power output for vibratory bowl or linear feeder	⊗	⊗	⊗
Automatic adjustment of the vibration frequency after calibration, i.e. fine mechanical tunings (fitting springs) are not necessary		⊗	⊗
Automatic switching to 230V or 110V mains voltage	⊗		⊗
Membrane keypad for setting and changing the working values in the setting menus	⊗	⊗	⊗
Simple menu navigation to change setting parameters	⊗	⊗	⊗
Manual adjustment of the transient and decay responses by changing the time constants	⊗	⊗	⊗
External activation 24V DC	⊗	⊗	⊗
One relay output and one optocoupler for status messages and further links			⊗
Two relay outputs and two optocouplers for status messages and further links	⊗	⊗	
Three optocouplers for status messages and further links	⊗	⊗	
Messages from the controller: active = controller running	⊗	⊗	⊗
Messages from the controller: operational = controller switched on, active = controller running	⊗	⊗	
Messages from the controller: operational = controller switched on, active = controller running, alarm = controller stopped	⊗	⊗	
Possibility of connecting external devices, e.g. solenoid valve (preferred supply voltage 230V AC)	⊗	⊗	
Connection of one sensor (supply voltage 24V DC 10 mA)			⊗
Connection of maximum two sensors, their function and switching behaviour being programmable (supply voltage 24V DC 10mA)	⊗	⊗	
Plug-in connections for RNA vibratory bowl and linear feeders, sensors and communication	⊗	⊗	⊗
Self-protecting (max. current monitoring)	⊗	⊗	⊗
Double-pole main switch	⊗	⊗	⊗
CE and EMV tested	⊗	⊗	⊗
CE, EMV, and UL tested		⊗	⊗

## RNA Frequency Control Units / Tabularisation of Setting Parameters

Setting Parameters	ESR 2000	ESR 2500 ESR 2800	ESR 3000
Automated calibration (control unit learns the typical characteristic of the vibratory feeder)		⊗	
Activation of vibratory bowl or linear feeder			
· Vibration amplitude	⊗	⊗	⊗
· External release	⊗	⊗	⊗
· Signal direction of external release	⊗	⊗	⊗
· Soft start and time and soft stop time	⊗	⊗	⊗
· Frequency manually adjustable	⊗		⊗
Storing the programmed settings (number of storage locations)	5	11	1
Setting sensor input 1 and sensor input 2			
· Inverting input of signal direction	⊗		
· Time until switching on and switching off moment	⊗	⊗	
Setting sensor input 1:			
· Inverting input of signal direction			⊗
· Time until switching on and switching off moment		⊗	⊗
Selecting the sensor links (up to 7 possibilities)	⊗	⊗	
Setting the cycle monitors (monitoring of sensors 1 and/or 2)	⊗		
Locking the settings against changes	⊗	⊗	⊗
Status display		⊗	⊗
Status display (control of the vibration amplitude)	⊗		
Status display (calibration and operation values)		⊗	
Permanently programmed application examples	⊗		
Performance target with external voltage 0-10V	⊗	⊗	⊗
Resetting to RNA factory settings	⊗	⊗	⊗

## Module Technology

The modules of the series **ESM 906** and **ESM 910** are for the operation of one vibratory bowl or linear feeder.

The modules of the series **ESM 3000** are for the operation of one vibratory bowl or linear feeder and connection of one sensor for monitoring and controlling the material flow, plus manually adjustable vibration frequency.

RNA Modular Units / Tabularisation of Equipment Features

Features	ESM 906	ESM 910	ESM 3000-16
One power output for vibratory bowl or linear feeder	⊗	⊗	⊗
Oscillation frequency is adjustable, i.e. fine mechanical tunings (fitting springs) are not necessary			⊗
Automatic switching to 230V or 110V mains voltage			⊗
Membrane keypad for setting and changing the working values in the setting menus			⊗
Simple menu navigation to change the setting parameters			⊗
Manual adjustment of the transient and decay responses by changing the time constants			⊗
External activation 24V DC	⊗	⊗	⊗
One relay output and one optocoupler for status messages and further links			⊗
Two relay outputs and two optocouplers for status messages and further links			
Three optocouplers for status messages and further links			
Output power with potentiometer or analogue voltage 0 to 10V DC, adjustable	⊗	⊗	
Messages from the controller: active = controller running			⊗
Messages from the controller: operational = controller switched on, active = controller running	⊗		
Messages from the controller: operational = controller switched on, active = controller running, alarm = controller stopped			
Possibility of connecting external devices, e.g. solenoid valve			⊗
Possibility of connecting external devices, e.g. solenoid valve (preferably 230V AC)			
Connection of maximum one sensor (supply voltage 24V DC 10mA)			⊗
Connection of maximum two sensors, their function and switching behaviour being programmable (supply voltage 24V DC 10mA)			
Plug-in connections for RNA vibratory bowl and linear feeders, sensors and communication			⊗
Self-protective (max. current monitoring)			
CE and EMV tested	⊗	⊗	
CE, EMV and UL tested			⊗
UL in preparation			

## Compact Control Unit ESS 2000

The programmable compact control unit type ESS 2000 is an SPC that is used in combination with RNA control units in extensive control tasks.

The ESS 2000 enables the user to put feeding systems into operation without additional integration into overriding client-based controls. The feeding systems run independently. Only a signal exchange (e.g. start/ stop) has to be produced via a communication interface.



### Programmable Compact Control Unit

- Autonomous feeding system, no programming efforts to customer's SPS
- Ready programs for standard processes / simple programming (e.g. circuit times)

Compact Control Unit Type	ESS 2000-8	ESS 2000-16
Housing with integrated SPS control unit and display	✗	✗
Distribution terminal wired ready for connection of actuators and sensors	8-fold	16-fold
Compact Flash Card for program back up	✗	✗
Functional program saved to Flash Card	✗	✗

Technical data	
Power supply	110/230V AC, 50/60 Hz, +10 -15%
Power output	24V DC max 1.2 Amp
External activation 24V DC	reverse polarity protector input, level 16...30V DC signal current at 24 volts approx. 8 mA
Interference suppression and immunity	in accordance with EMC guidelines
Type of protection	IP54
Ambient temperature	ca. 40°
Dimensions	270 x 213 x 153 (W x H x D)

The heart of the ESS 2000 compact control is a MINI SPC with which one can activate the 8 or 16 in and outputs. This way multi-track accumulation lines for example, can be monitored individually or camera sensors can be integrated in the control sequence of a feeding system.

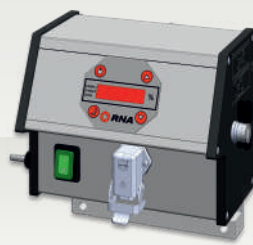
Programming can be carried out by the user according to Siemens S7 Standard or based on RNA predefined memory cards. The user can then also adapt parameters (e.g. reaction time of sensors) via the display.

The design of the ESS 2000 is based on RNA's already well-tried and tested ESG, ESK and ESR controls. An ergonomically positioned display makes reading and adjusting the desired parameters easy.

## Technical Data



ESG 1000



ESG 2000

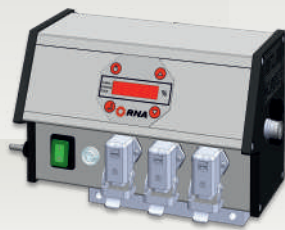


ESK 2000



ESK 2001

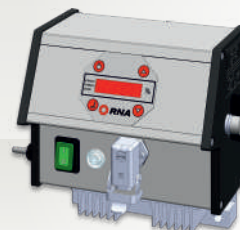
Type	ESG 1000	ESG 2000	ESK 2000	ESK 2001
Mains voltage	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz
	10% / -15%	20% / -15%	20% / -15%	20% / -15%
		automatic switching	automatic switching	automatic switching
	110V AC, 50/60 Hz	110V AC, 50/60 Hz	110V AC, 50/60 Hz	110V AC, 50/60 Hz
	15% / - 10%	10% / - 10%	10% / - 10%	10% / - 10%
Output voltage / 230V AC	40...208V <sub>eff</sub>	0...208V <sub>eff</sub>	0...208V <sub>eff</sub>	0...208V <sub>eff</sub>
Output voltage / 110V AC	20...105V <sub>eff</sub>	0...98V <sub>eff</sub>	0...98V <sub>eff</sub>	0...98V <sub>eff</sub>
Operation mode	Phase control	Phase control	Phase control	Phase control
Load current max. channel 1-3	6 A	10 A	10 A	10 A <sub>eff</sub> / 4 A <sub>eff</sub>
Load current max.	6 A <sub>eff</sub>	10 A <sub>eff</sub>	10 A <sub>eff</sub>	10 A <sub>eff</sub>
Load current min.	80 mA	80 mA	80 mA	80 mA
Internal fuse	Fine-wire fuse 5x20, 6,3 A Delay action	F1 = 10 A	F1 = 10 A	F1 = 10 A / F2 = 4 A
Soft start / stop time	soft start adjustable + disconnectible	0...5 sec may be selected separately	0...5 sec may be selected separately	0...5 sec may be selected separately
Set value external			0...10V DC o. Poti	0...10V DC o. Poti
Sensor inputs			2	2
Release input	Contact or 24V DC	24V DC	24V DC	24V DC
Sensor supply			24V DC, max 60 mA	24V DC, max. 60 mA
Sensor delay AN			0...60 sec	0...60 sec
Sensor delay AB			0...60 sec	0...60 sec
Outputs		2 optocoupler	2 relais / 2 optocoupler	2 relais / 2 optocoupler
Status output (optocoupler)		max. 30V DC 10 mA	max. 30V DC 10 mA	max. 30V DC 10 mA
Relay contacts			max. 6 A 250V AC	max. 6 A 250V AC
Operation temperature	0...50 °C	0...50 °C	0...50 °C	0...50 °C
Protective system	IP 54	IP 54	IP 54	IP 54
Dimensions W x H x D	102 x 210 x 137	210 x 214 x 139	210 x 214 x 139	210 x 214 x 139



ESK 2002



ESR 2500 | ESR 2800



ESR 2000



ESR 3000-6



ESR 3000-12

Type	ESK 2002/10A ESK 2002/16A	ESR 2000	ESR 2500   ESR 2800	ESR 3000-6   ESR 3000-12
Mains voltage	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz
	20% / -15%	15% / -15%	± 10%	15% / -6%
	automatic switching	automatic switching		automatic switching
	110V AC, 50/60 Hz	110V AC, 50/60 Hz	110V AC, 50/60 Hz	110V AC, 50/60 Hz
	10% / - 10%	15% / -15%	± 10%	± 10%
Output voltage / 230V AC	0...208V <sub>eff</sub>	0...208V <sub>eff</sub>	0...208V <sub>eff</sub>	0...205V <sub>eff</sub>
Output voltage / 110V AC	0...98V <sub>eff</sub>	0...98V <sub>eff</sub>	0...104V <sub>eff</sub>	0...95V <sub>eff</sub>
Operation mode	Phase control	Frequency reversal PWM	Frequency reversal PWM	Frequency reversal PWM
Load current max. channel 1-3	10 A <sub>eff</sub>   4 A <sub>eff</sub>	6 A <sub>eff</sub>	5,5 A <sub>eff</sub>   8,5 A <sub>eff</sub>	6 A <sub>eff</sub>   12 A <sub>eff</sub>
Load current max.	10 A <sub>eff</sub>   16 A <sub>eff</sub>	6 A <sub>eff</sub>	5,5 A <sub>eff</sub>   8,5 A <sub>eff</sub>	6 A <sub>eff</sub>   12 A <sub>eff</sub>
Load current min.	80 mA	80 mA	60 mA	100 mA   400 mA
Internal fuse	F1=10A / F2=4A / F3=4A	F1 = 10 A (6A)	Mains fuse 5x20mm, 4 A delay	F1=6 A / F2=10 A
Soft start / stop time	0...5 sec may be selected separately	0...5 sec may be selected separately	Start / Stop: 0,1 - 10 sec	0...5 sec may be selected separately
Set value external		0...10V DC o. Poti	0...10V-Option	0...10V DC o. Poti
Sensor inputs	2	2	2	1
Release input	24V DC	24V DC	24V DC	24V DC
Sensor supply	24V DC, max. 60 mA	24V DC, max. 60 mA	24V DC, max. 60 mA	24V DC, max. 100 mA
Sensor delay AN	0...60 sec	0...60 sec	01 - 60 sec	0...60 sec
Sensor delay AB	0...60 sec	0...60 sec	01 - 60 sec	0...60 sec
Outputs	2 relais / 6 optocouplers	2 relais / 2 optocouplers	2 optocouplers	1 relais / 1 optocoupler
Status output (optocoupler)	max. 30V DC 10 mA	max. 30V DC 10 mA	max. 30V DC 20 mA	max. 30V DC 10 mA
Relay contacts	max. 6 A 250V AC	max. 6 A 250V AC	max. 6 A 250V AC	max. 6 A 250V AC
Operation temperature	0...45°C	0...50 °C	0...40°C	0...45°C
Protective system	IP 54	IP 54	IP 54	IP 54
Dimensions W x H x D	260 x 210 x 139	210 x 214 x 139	195 x 190 x 170	90x 200 x 205   160 x 225 x 205

## Technical Data



ESM 906



ESM 910



ESM 3000-6 / ESM 3000-16



EGM 32

Type	ESM 906	ESM 910	ESM 3000-6 ESM 3000-16	EGM 32
Mains voltage	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz	230V AC, 50/60 Hz
	6% /- 10%	6% /- 10%	15% /- 6%	10% /- 10%
			automatic switching	
	110V AC, 50/60 Hz	110V AC, 50/60 Hz	110V AC, 50/60 Hz	on request
	6% /- 10%	6% /- 10%		
Output voltage / 230V AC	0...220V <sub>eff</sub>	0...220V <sub>eff</sub>	0...205V <sub>eff</sub>	
Output voltage / 110V AC	0...105V <sub>eff</sub>	0...105V <sub>eff</sub>	0...95V <sub>eff</sub>	
Operation mode	Phase control	Phase control	Frequency reversal PWM	Sensor amplifier
Load current max. channel 1-3				
Load current max.	6 A <sub>eff</sub>	10 A <sub>eff</sub>	6 A <sub>eff</sub>   16 A <sub>eff</sub>	
Load current min.			100 mA   400 mA	
Internal fuse	F1=6 A		F1=6 A / F2=10 A	
Soft start / stop time	permanently established	permanently established	0...5 sec may be selected separately	
Set value external	0...10V o. Poti 10 / k Ohm	0...10V o. Poti 10 / k Ohm	0...10V o. Poti	
Sensor inputs				1
Release input	potential-free contact / 12...24V DC, Ri 10 / k Ohm	potential-free contact / 12...24V DC, Ri 10 / k Ohm	24V DC	
Sensor supply			24V DC, max. 60 mA	24V DC, max 100 mA
Sensor delay AN			0...60 sec	0...60 sec
Sensor delay AB			0...60 sec	0...60 sec
Outputs	2 relais / 0 optocoupler		1 relais / 1 optocoupler	Relay contact 1x pot.-free replaceable contact
Status output (optocoupler)	30V 0,1 A DC	30V 0,1 A DC	max. 30V DC 10 mA	
Relay contacts			max. 6 A 250V AC	max. 6 A 250V AC
Operation temperature	0...45°C	0...45°C	0...45°C	0...50 °C
Protective system	IP 20	IP 20	IP 54	IP 20
Dimensions W x H x D	108x 77 x 115	150 x 74 x 115	70 x 220 x 190 110 x 325 x 245	50 x 75 x 130

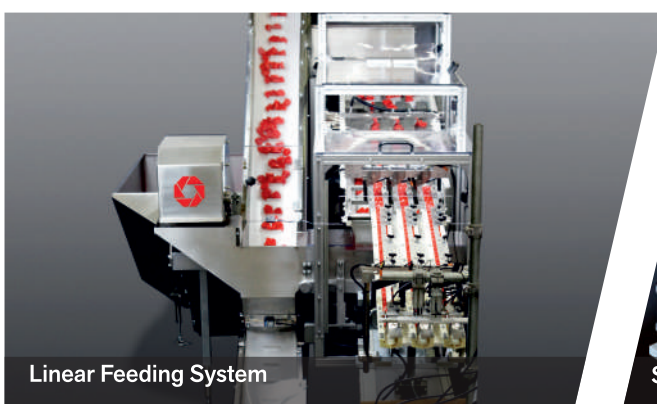
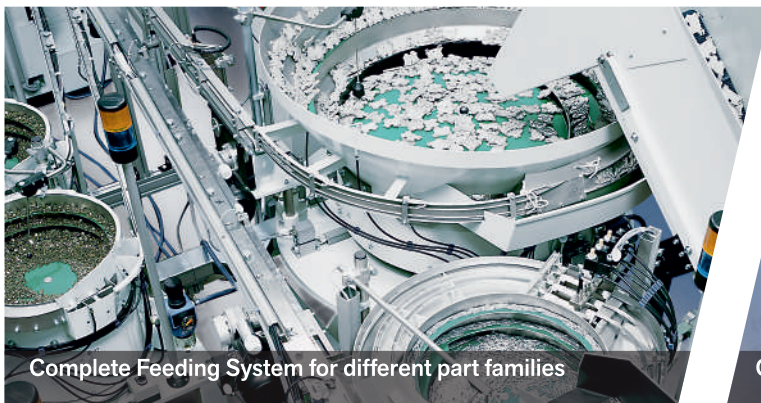


## RNA Control Units for Feeding Systems



Feeding systems made by RNA fulfil the specific requirements of the customer, no matter which components need to be fed to the assembly process. High feeding rate, operating safety, and high quality are the characteristics of RNA feeding systems.

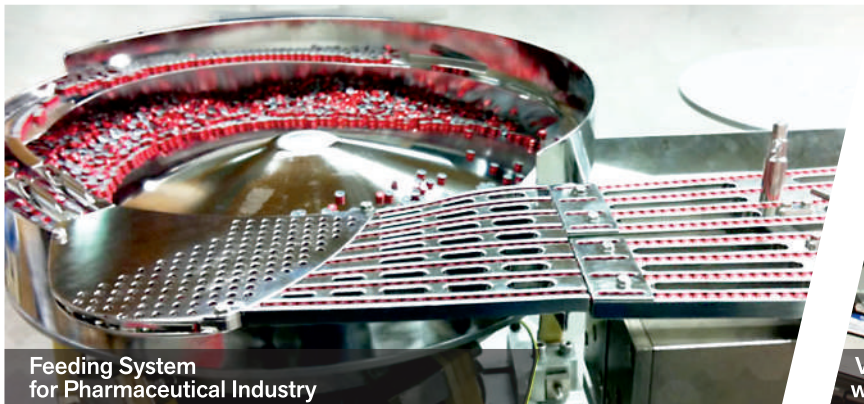
RNA feeding systems are controlled via exactly adjusted control units, which are designed to warrant a trouble-free and optimal operation.



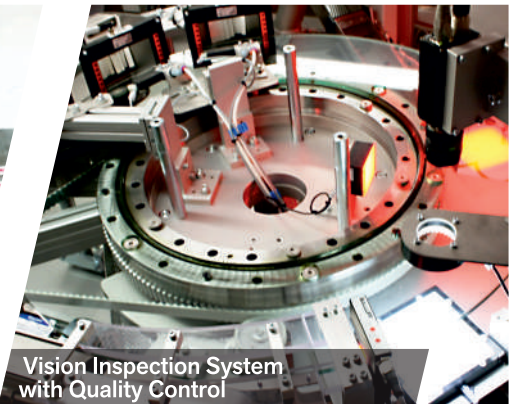
## Industry Range

RNA manufactures feeding systems for all industries

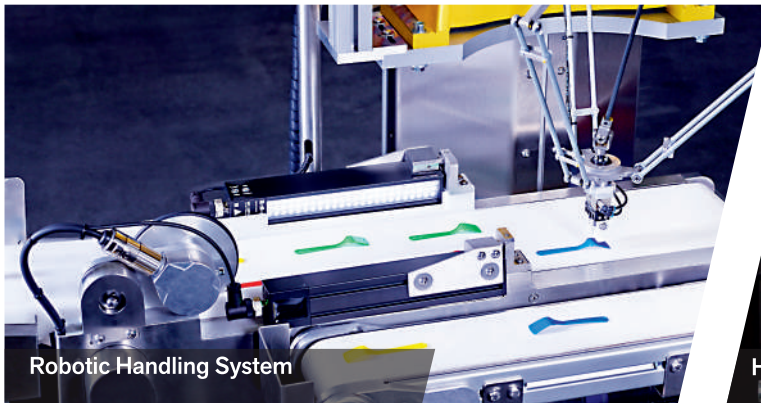
- Packaging
- Automotive
- Electronic and Electrical
- Pharmaceutical and Cosmetics
- Food
- and other industries



Feeding System for Pharmaceutical Industry



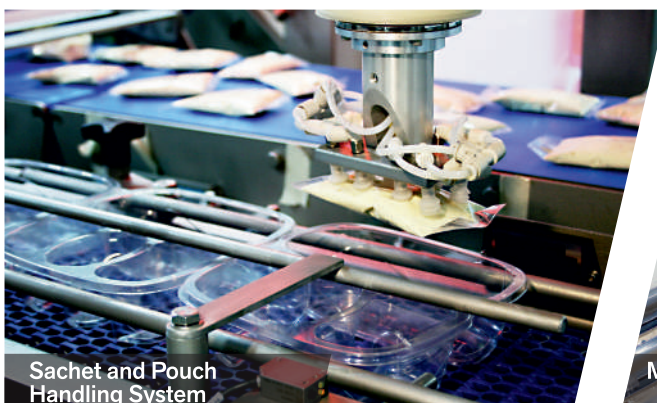
Vision Inspection System with Quality Control



Robotic Handling System



High-speed Pick & Place System



Sachet and Pouch Handling System



Multi-lane, High-speed ZE System





**RNA Group**

*Headquarter*

*Production and Sales*

**Rhein-Nadel Automation GmbH  
Reichsweg 19-23  
D-52068 Aachen**

*Tel. Vertrieb:*

**+49 (0) 241-5109-0**

*Fax Vertrieb:*

**+49 (0) 241-5109-219**

*Email:*

**vertrieb@rna.de**

**www.RNA.de**



*Production and Sales*

*Focus: pharmaceutical industry*

**PSA Zuführtechnik GmbH  
Dr.-Jakob-Berlinger-Weg 1  
D-74523 Schwäbisch Hall**

Tel.: +49 (0) 791 9460098-0

Fax: +49 (0) 791 9460098-29

Email: info@psa-zt.de

www.psa-zt.de



*Production and Sales*

**RNA Automation Ltd.  
Hayward Industrial Park Tameside Drive,  
Castle Bromwich, Birmingham, B35 7AG  
Großbritannien**

Tel.: +44 (0) 121 749-2566

Fax: +44 (0) 121 749-6217

Email: RNA@RNA-uk.com

www.rnaautomation.com



*Production and Sales*

**HSH Handling Systems AG  
Wangenstr. 96  
CH-3360 Herzogenbuchsee  
Schweiz**

Tel.: +41 (0) 62 956 10-00

Fax: +41 (0) 62 956 10-10

Email: info@handling-systems.ch

www.handling-systems.ch



*Production and Sales*

**Pol. Ind. Famades C./Energia 23  
E-08940 Cornellà de Llobregat (Barcelona)  
Spanien**

Tel.: +34 (0)93 377-7300

Fax: +34 (0)93 377-6752

Email: info@vibrant-RNA.com

www.vibrant-RNA.com

www.vibrant.es

**www.RNA.de**