RSF Elektronik is one of the world’s leading companies in the field of electronic linear measuring devices and it offers an extensive portfolio which includes almost all designs which are required by the market. The typical resolutions or measuring steps range from a few micrometres down to the nanometre range.

Another core element of the product range are high-precision and resistant graduations which are manufactured in thin-layer technology on glass or other carrier substrates. RSF Elektronik also develops customized cable devices for the widest range of sectors and areas of application, and these are manufactured by the Stříbro subsidiary. In order to safeguard the company’s high quality standard, a comprehensive quality assurance and environmental management system – certified according to DIN EN ISO 9001 and DIN EN ISO 14001 – has been put in place. Thanks to the company’s extensive distribution network, optimum customer service is guaranteed in practically all regions.
# TABLE OF CONTENTS

| Exposed Linear Encoders                        | MS 15, MS 25, MS 45, MC 15 .................................................. 04 |
| Sealed Linear Encoders   | MSA 170, MSA 7xx, MSA 8xx, MSA 37x ........................................ 06 |
| Modular Angle Measurement Encoders | MSR 25, MSR 45, IFC 430, UFC 430 ........................................ 08 |
| Interface Electronics     |                                                                           |
| Retrofitting Linear Encoders   | MSA 650, MSA 651, MSA 350 .................................................. 09 |
| Cable Systems              | Cable Drag, System Solutions, Data Lines, Hybrid Cables, Power Cables. .... 10 |
| Precision Graduations      | Linear Graduations, Circular Graduations, Customized Graduations .......... 11 |
| Distribution Contacts      | Distribution Contacts ................................................................... 12 |
EXPOSED LINEAR ENCODERS

FIELDS OF APPLICATION
Escalating market demand in terms of processing speed, operating cycles and mechanical backlash, together with the requirement that there should be no mechanical influences necessitates the provision of high-precision exposed linear measurement systems. The scale and scanning head must be protected against soiling in this contraction style. Exposed linear encoders are optimized for use in a „clean environment“ (e. g. measuring machines, machines in electronic manufacture).

Due to increasing demand for absolute position valuation RSF Elektronik offers the MC 15, an absolute exposed linear encoder.

PERFORMANCE CHARACTERISTICS
- Non-contact optical scanning, no mechanical influence on the measurement slide
- High measuring speed
- High precision, small measuring increments
- Reproducible thermal performance
- Minimal space requirement

MC 15
- Absolute position valuation
- Large mounting tolerances
- Several serial interfaces

TYPICAL APPLICATIONS
- Metrology:
  Coordinate measuring machines, measuring microscopes, presetting devices, video inspection
- Electronic manufacturing:
  Circuit board assembly/inspection/testing, screen-printing systems, LCD production
- Semi-conductor production: Bonders
- Linear drives
- 2D, 3D printers
- Medical technology
- Solar technology
- Mounting machines
- Automation
VERSIONS INCREMENTAL

**MS 15**
- Grating pitch: 40 µm
- Gratuation carrier: Steel tape

**MS 25**
- Grating pitch: 40 µm
- Gratuation carrier: Steel tape, glass, glass ceramic

**MS 45**
- Grating pitch: 200 µm
- Gratuation carrier: Steel tape

VERSION ABSOLUTE

**MC 15**
- System resolution: 50 nm, 100 nm
- Gratuation carrier: Steel tape
- Interfaces: EnDat 2.2, Mitsubishi (M), Panasonic (P)

ACCESSORIES FOR STEEL TAPE SCALE (OPTIONAL):
**TAPE MOUNTING TOOL TMT 14 MK, TMT 20 MK, TMT 40 MK**
For secure and precise application of a steel tape scale at linear encoder systems:
MS 15 MK, MS 25 MK, MS 45 MK, MC 15 MK
SEALED LINEAR ENCODERS

FIELDS OF APPLICATION
Linear encoders from RSF Eletronik are all-purpose. They are suited for manual applications; yet they are also particularly suitable for closed loop drive devices. Owing to their sealed design, the MSA 7 and MSA 8 linear encoders are predestined for applications in automation and production technology. They are ideally suited for metrology, printing and robotics, especially in applications where protection for the scale and the reading head is required.

PERFORMANCE CHARACTERISTICS
- Compact measuring unit with optical scanning
- Scale and reading head are protected by aluminum housing and sealing lips from soiling
- Simple assembly
- Patented coupling system between scanning carriage and reading head allows greater assembly tolerances - without compromising precision
- Reproducible thermal performance
- Detachable connecting cable (optional)

TYPICAL APPLICATIONS
- Automation and production technology
- 2D, 3D printers
- Robotics
- Electronics manufacturing: Circuit board drilling and milling, screen-printing systems
- Metrology: Microscopes, measuring stages
- Presetting devices
- Linear units and drives
VERSIONS

MSA 170
- Miniaturized system
- Measuring length: Up to 520 mm

MSA 7XX
MSA 8XX
- Small cross-sectional profile
- Measuring length: Up to 3040 mm
- Various mechanical versions
- Detachable connecting cable (MSA 8xx)

MSA 37X
(MSA 373, MSA 374, MSA 375 VERSIONS)
- With integrated guide rail system
- Measuring length: Up to 1240 mm
MODULAR ANGLE MEASUREMENT ENCODERS

FIELDS OF APPLICATION
Position and rotator control for electrical drives, metrology

VERSIONS
MSR 25 / MSR 45

PERFORMANCE CHARACTERISTICS
- For small and very large diameters as well
- Full-circle solution
- Segment solution
- External tape scale

TYPICAL APPLICATIONS
- Large rotary tables
- Telescopes
- Computer tomography
- Drive technology

INTERFACE ELECTRONICS

FIELDS OF APPLICATION
Counter board for the measurement acquisition of incremental linear measurement

VERSIONS
UFC 430 USB-INTERFACE MODULE
IFC 430 PC PLUG-IN CARD

PERFORMANCE CHARACTERISTICS
- PC plug-in card for three axes
- USB-interface module for three axes

TYPICAL APPLICATIONS
- Measuring microscopes
- Measuring machines
- Presetting devices
LINEAR ENCODERS FOR RETROFITTING MANUALLY OPERATED MACHINE TOOLS

FIELDS OF APPLICATION
Equipment for manual machine tools

VERSIONS SMALL CROSS-SECTIONAL PROFILE

MSA 650

![MSA 650 Image]

MSA 651

![MSA 651 Image]

VERSION LARGE CROSS-SECTIONAL PROFILE

MSA 350

![MSA 350 Image]

PERFORMANCE CHARACTERISTICS
- Very simple assembly
- Robust housing
- Various mechanical versions

TYPICAL APPLICATIONS
- Milling machines
- Turning machines
- Grinding machines
CABLE SYSTEMS

FIELDS OF APPLICATION
In its cable systems division, RSF Elektronik develops and produces customized products and optimized solutions for the widest range of sectors and areas of application.

- Electronics
- Energy technology
- Medical technology
- Semi-conductor manufacture
- Regenerative energy

PRODUCTION TECHNOLOGY
All cables and cable systems are produced using the latest production techniques, fully automatic cutting machines, automatic crimp force monitoring and comprehensive final inspection all ensure maximum flexibility and quality.

Crimp technology
- Automatic crimp force monitoring
- Preparation of crimp micrographs for every order
  (at the beginning and at the end of every process, failures)
- Trigger controls for every order and contact
- Reliable crimping processing for cable cross-section from 0.032 mm² to 35 mm²

Extrusion coating
- For plugs, cables, circuit boards and cable ducts
- For the protection and sealing of sensitive components

Quality assurance
- Incoming goods inspection
- In-process inspections
- Inspection modules for all contacts and plugs
- 100% performance testing and electrical inspection
- Regular audits

System development
- Cable systems with electrical and mechanical components
- Use of devices to simulate actual applications

COMPETENCES
- Fully automatic cutting machines
- The latest crimping machines and fine-soldering work stations
- Tools and devices for all contacts and plugs
- Extrusion coating of components and cables
- Small- and large-scale production
- Manufacture of prototypes and initial samples
- 100% performance testing

TYPICAL APPLICATIONS
- Data lines
- Hybrid cables
- Cable drag
- Power cables
- System solutions

SERVICES
- Advanced development and technology selection
- Production development
- Project planning and project management
- Prototyping
PRECISION GRADUATIONS

FIELDS OF APPLICATION
The use of measuring standards, principally in the form of linear grids, is an essential component of RSF Elektronik precision graduations. These precision graduations satisfy the highest quality requirements and define both the function and the precision of the measuring device.

VERSIONS
A further focus is on the production of customer-specific RSF Elektronik graduations for particular requirements.

PERFORMANCE CHARACTERISTICS
- Longitudinal graduations in chrome on glass
- Longitudinal graduations on a steel tape
- Reflective medium gold or polished steel surface
- Circular graduations in chrome on glass
- Graticules
- Antireflection coating
- Other coatings

TYPICAL APPLICATIONS
- Linear measurement devices
- Angle measurement devices
- Optical measuring and monitoring devices
- Aiming devices