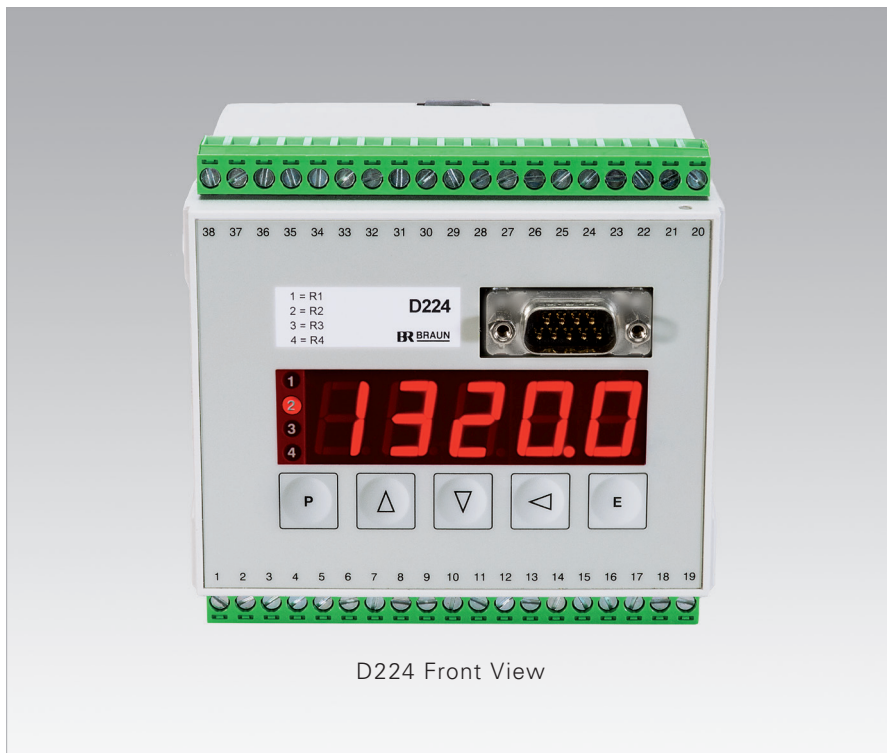


Monitor for Measurement of Speed and Ratio Series D224.xx



D224 Front View

Fast, precise and safe – from zero motion to highest speed

The BRAUN Speed and Ratio Monitor Series D224.xx receives input signals from speed sensors or flow rate transmitters. Two signal inputs are especially designed to fit to our proven Differential-Hall-Effect based A5S sensors. The other two signal inputs are universally designed to accept any type of sensor signal.

The monitor simultaneously measures one or two speed values (or other quantities transmitted as frequency), and computing their ratio or difference or sum, to read and monitor stretch / shrinkage or blend ratio, for instance.

Display, setpoints and analog output may be adjusted to any speed. During its lifetime cycle the monitor is completely maintenance-free.

KEY FEATURES

- Speed and Ratio Monitor with sensor monitoring and self-test function
- Frequency range 0 Hz...100 kHz
- 1 Analog Output 0/4...20 mA
- Bright red digital LED display
- 4 Alarm Outputs via relay contacts
- 2 Signal Inputs for connection with two A5S series sensors
- 2 Universal Signal Inputs, also for magnet inductive sensors (MPUs)
- RS232 Data Interface for version D224.11
- PROFIBUS Data Interface for version D224.12
- Universal supply range 20...265 V_{ac}

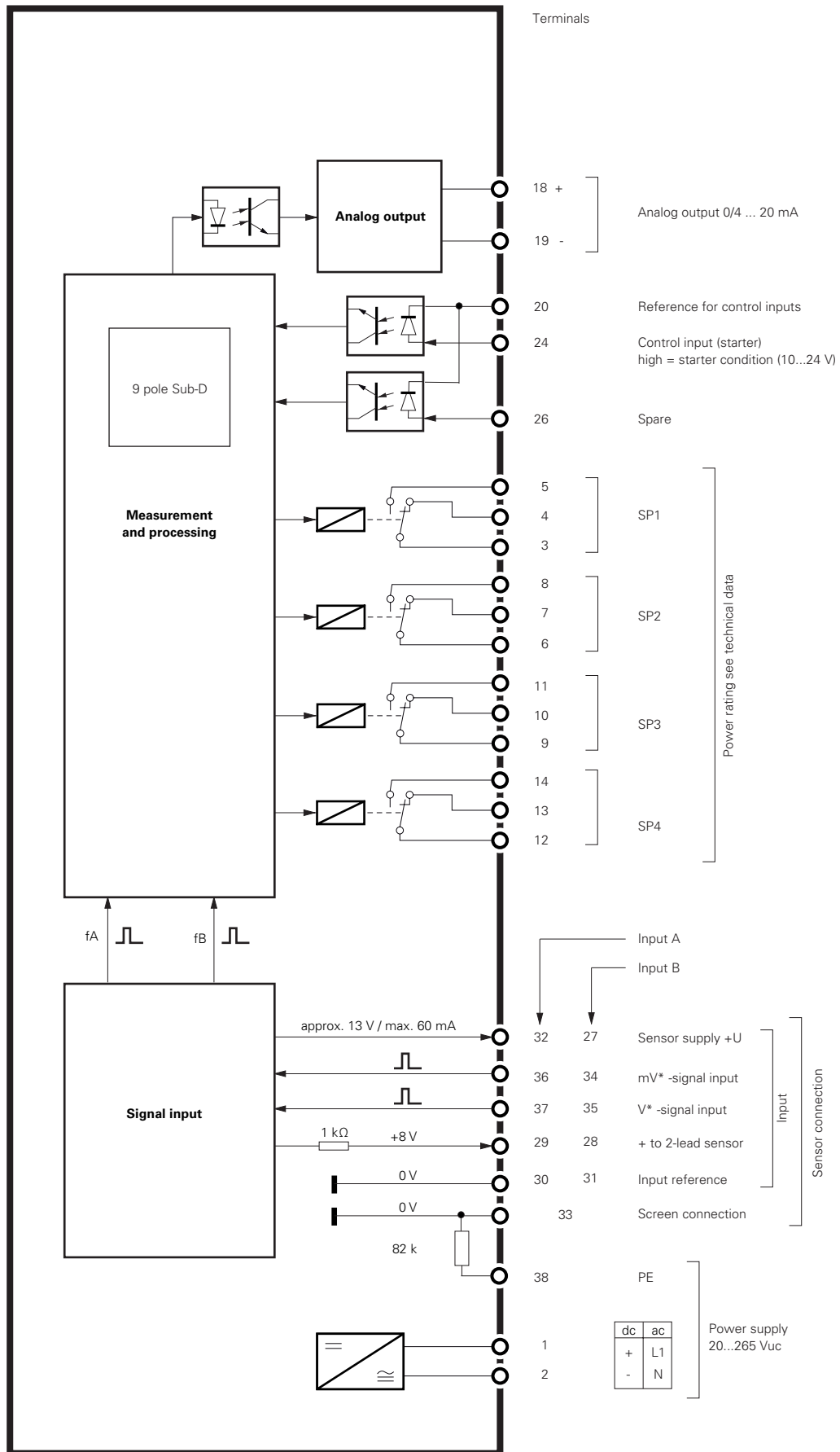
BENEFITS

- Fast, precise and safe
- Maintenance-free during Lifetime, therefore minimized TCO
- Rapid and accurate response through period measurement

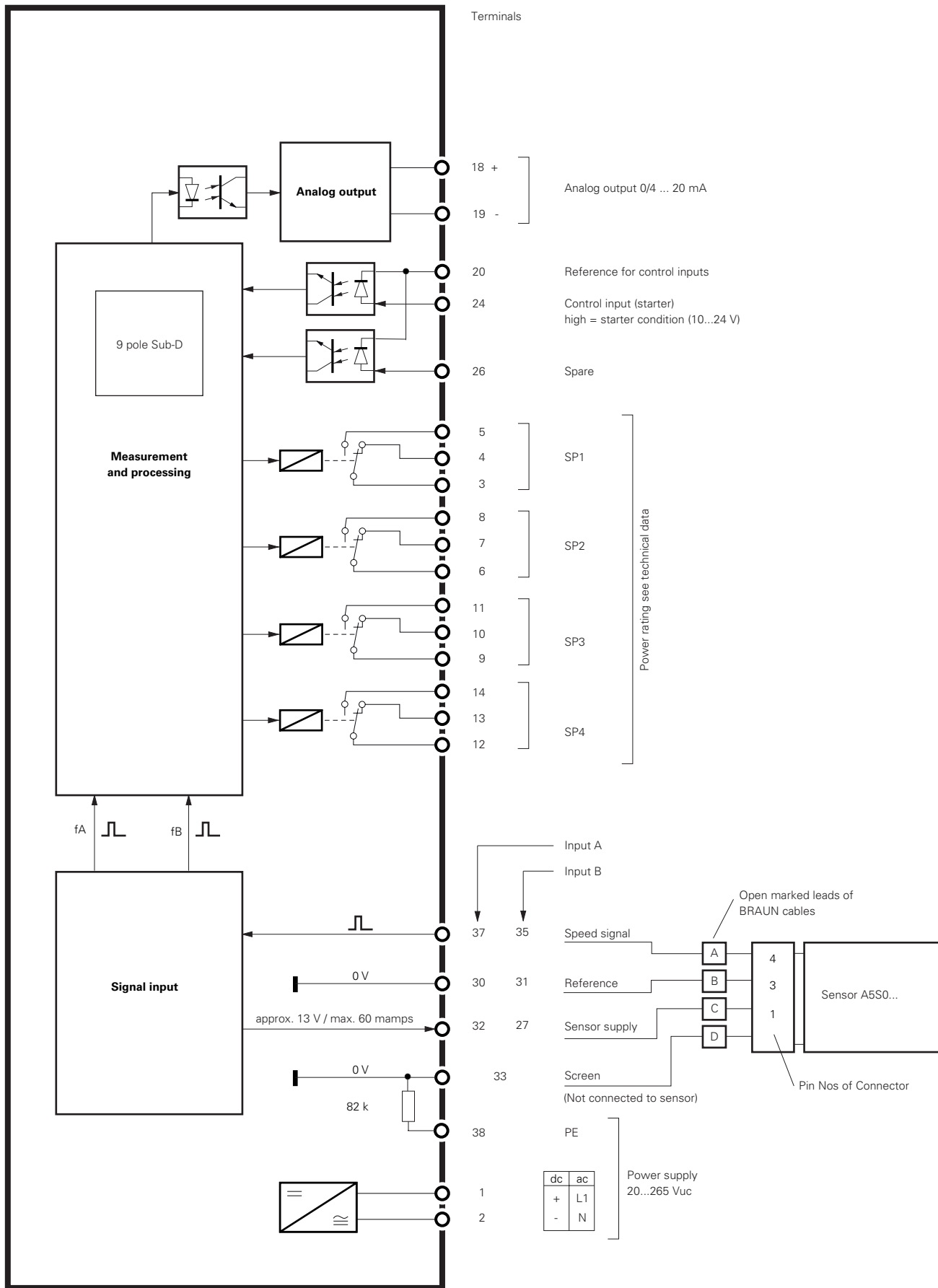
Specifications of D224.xx

Compatibility to Standards	2014/30/EU, EN IEC 61000-6-4, EN IEC 61326-3-1 2014/35/EU, EN IEC 61010-1
Measuring Principle	Frequency measurement, based on the input pulse distance, extended over a minimum period of time, programmable 5 milliseconds...9.999 seconds.
Accuracy	±0.005% of value ±1 in last digit
Response	1 input pulse interval + programmed minimum time + 5 milliseconds
Analog Output	Isolated and protected against external short circuit. Current 0/4...20 mA with max. load of 500 ohms
Range	High and low end of span programmable
Resolution	12 bit (1 : 4096)
Drift by temperature	<0.01% within 0...40 °C (32...104 °F)
Long term stability	<0.25% during 5000 hours of operation
Setpoint Alarms	Four individual setpoints, each with SPDT contacts, control an own relay output.
Setpoints adjustment	Individually programmable from zero speed up to any high speed
Response characteristics	Hysteresis individually programmable in its position and width
Handling capacity	Relay contacts 250 V, 2 A, 100 W AC
Alarm state position	Individually programmable for excess, no power and input failure condition, starter period
Starter function	Released by external control signal (12...24 V) to isolated input. Extension programmable up to 999 sec.
Display	5 digits with red LED figures, 15 mm high Indicating the variable during operation, parameters during the programming phase
Data Interface	RS232 at front socket (Baud rate programmable, up to 38400 baud) for version D224.11 PROFIBUS at front socket (Baud rate automatic) for version D224.12
Data output	Measurements and signals state, upon request
Data input	Programming the parameters (equipment required see below)
Programming	Manually by front keys, alternatively via RS232 (equipment required see below)
Data protection	Parameters safe-guarded against power failure and code protected against unauthorized access
Signal Input	Isolated circuit, responding to pulse signals of any waveform and to AC-signals
Frequency range	0 Hz...100 kHz
Signal level range	Minimum signal 50 mV RMS, maximum 100 V
Input impedance	100 kohms
Scaling factor	Programmable by 5 digits, considering any relation to the variable
Suitable sensor types	All BRAUN sensors or equivalent, NAMUR type sensors, tachogenerators, incremental encoders, MPUs
Sensor failure monitoring	Short-circuit or interrupt of supply (NAMUR types also), signal lead break sensors (with push-pull output only). A detected failure sets any of the alarms into a pre-programmable state.
Sensor supply	2x 13 V / max. 60 mA. Extra output 8 V via 1 kohm load resistor to passive 2 leads sensor types
Power Supply	D224.xxU3: Universal supply range 20...265 Vuc. Power consumption approx. 8 W Insulation category Class 1
Connectors (Wiring)	Screw mounting, 2 plug-in terminal blocks, accepting 0.2...2.5 mm ² cross section
Operating Conditions	Ambient temperature: 0...50 °C (32...122 °F) Relative humidity max. 95%, non-condensing
Design	Snap-on-track enclosure for 35 mm rail, field mounting enclosure (Option -G) on request
Dimensions	Length 100 mm, width (including terminal blocks) 104 mm, height 110 mm
Protection Grade	IP 40 for enclosure (also available in field mounting version, with transparent cover IP 65/NEMA 4) IP 20 for terminals
Weight	approx. 0.4 kg
Optional Accessories	IS-RS232-S: CD-ROM with Interface Software to program parameters L3D03: Plug-in adapter cable, with 9-pole Sub-D (female) plug to PC

Function Diagram and Connections



Function Diagram and Connections for A5S0... Sensors



Ordering Key D224.xx

D224. 1 a U3 b

Data Interface

a = 1 : RS232
a = 2 : PROFIBUS

Supply Voltage

U3 : 20...265 Vuc

Enclosure

b = suffix „-G“ : field mounting enclosure with transparent cover
(omit if not required)

Examples:

D224.11U3 : RS232 Data Interface, 20...265 Vuc

D224.12U3 : PROFIBUS Data Interface, 20...265 Vuc

D224.11U3-G : RS232 Data Interface, 20...265 Vuc,
field mounting enclosure with transparent cover

D224.12U3-G : PROFIBUS Data Interface, 20...265 Vuc,
field mounting enclosure with transparent cover

BRAUN – Speed Monitoring and Protection Systems for Rotating Equipment

BRAUN is a worldwide leading supplier of protection systems for rotating equipment in industrial applications that require the highest standards of safety and availability.

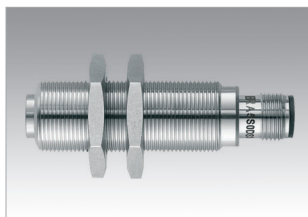
For more than 50 years BRAUN systems have been protecting the facilities of the world's leading companies within the power generation, oil, gas and chemical industries. BRAUN Protection Systems have been installed in over 100 countries worldwide, especially in those areas where rotational equipment safety is of the highest priority.

Our solutions comprise a variety of products for the detection, reporting and monitoring of speed and related parameters.

Always matching the requirement. Always the perfect solution for safety and availability.



PROTECTION SYSTEMS



SPEED SENSORS



TACHOMETERS



PORTABLE TACHOMETERS

BR BRAUN
Speed and Frequency

BRAUN GMBH

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