Isolating Barrier
for our sensors A5S1… in hazardous areas
Series D461

D461 Front View

KEY FEATURES

- ATEX/IECEx certified, also approval for UL/CSA and EAC (Russia, Kazakhstan and Belarus Customs Union)
- Protection grade Ex ia IIC
- Establishes a highly efficient system to detect speed (and direction) in a hazardous area, in conjunction with one of our sensors series A5S1…
- Provides intrinsic safety for the sensor and its cabling
- Comprehends sensor supply and signal connection
- Sensor supply monitoring
- Free-floating, therefore maximum immunity versus EMI
- Push/pull signal output to subsequent monitors

BENEFITS

- Maintenance-free during Lifetime, therefore minimized TCO
- No EMI influence compared to zener barriers
- No signal degradation compared to zener barriers
- Powerful signal output to signal evaluation

Safety first – for intrinsically safe (Ex ia) implementations

The BRAUN Isolating Barrier units D461 are ATEX/IECEx certified, as well as being approved for other international standards such as UL/CSA and EAC (Russia, Kazakhstan and the Belarus Customs Union) to meet the particular requirements of explosion protection areas (zone 0 or 1).
The Isolating Barrier establishes a highly efficient system to detect speed and/or direction in a hazardous area, in conjunction with one of our sensors series A5S1…, to supply high-level output signals to the periphery.
The barrier provides an intrinsic safety circuit for the sensor and its cabling and does not require Ex d measures.

The signal input is isolated from the signal output. Both are isolated versus the power supply. The signal output of the unit repeats the input pulse signals with push/pull characteristics.
The signal input matches the specifications of the speed sensor series A5S1…, which are approved as intrinsic safety devices, to be installed in hazardous area zone 0 or 1.
The sensor supply circuit is monitored, and a fault is signalized.

The barrier unit D461 must be installed in a safe (non-hazardous) area or within an explosion-proof (Ex d) enclosure.

Specifications of D461

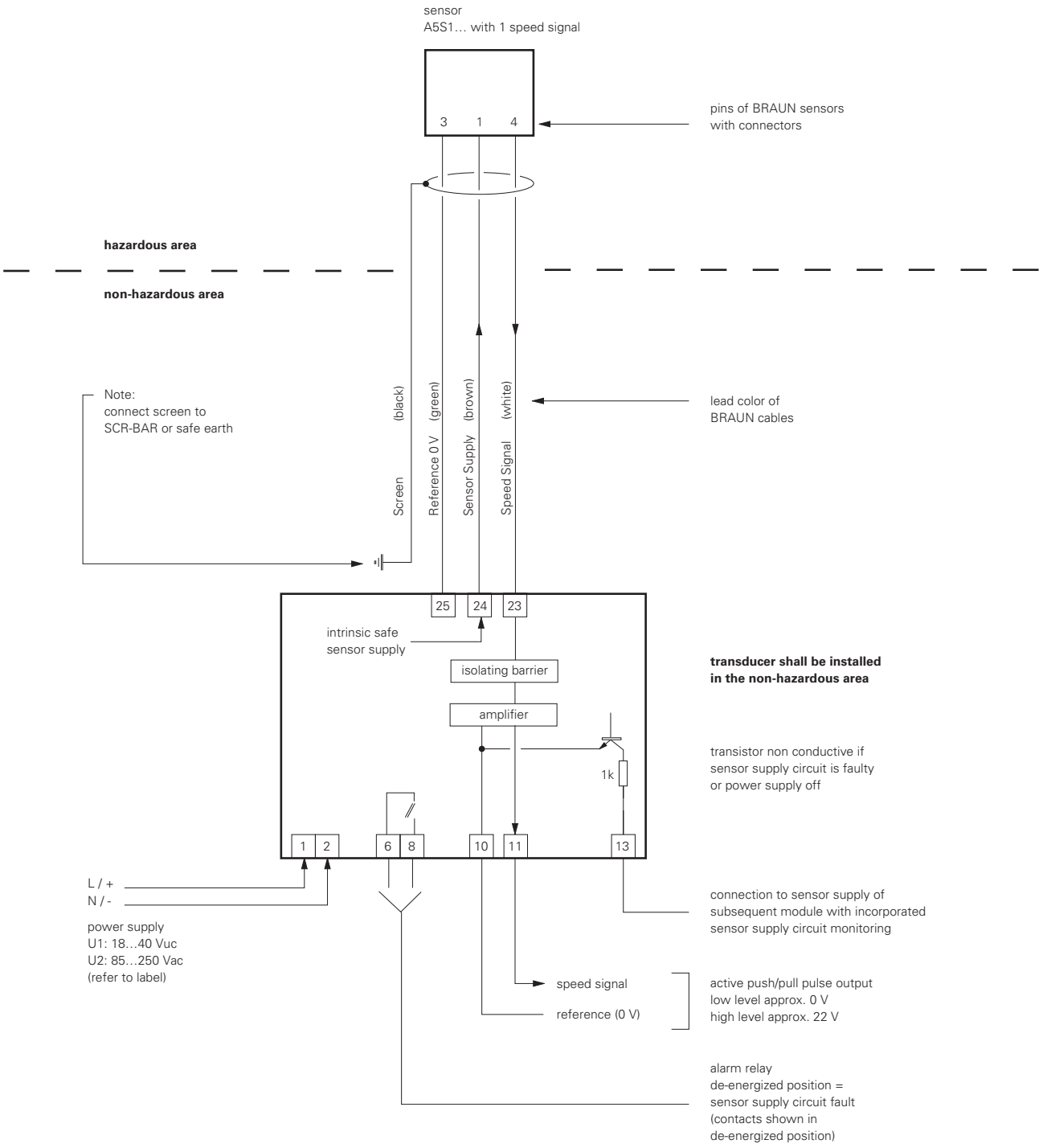
Conformity to Standards	Directive	Standard
	2014/34/EU (ATEX Product Directive)	EN IEC 60079-0, EN IEC 60079-11
	2014/30/EU (Electromagnetic Compatibility Directive)	EN IEC 61000-6-2, EN IEC 61000-6-4
	2014/35/EU (Low Voltage Directive)	EN IEC 61010-1
	2011/65/EU (RoHS Directive)	EN 50581:2012
System Configuration	The barrier D461 must be installed in the safe (non-hazardous) area, whereas the sensor A5S1 may be placed wherever it is required within the hazardous area, connected via a standard (screened) cable. The D461 output may be transmitted without restriction to any signal evaluating unit.	
Sensor Input	Response level (low < 1.8 V, high > 3.5 V Input impedance 47k Input capacitance Ci and inductivity Li are negligible Sensor supply: 8 V (nominal value) Approved and certified maximum values Uo = 8,7 V Co = 300 µF Io = 62 mA Lo/Ro = 883 µH / Ω Po = 130 mW Lo = 2 mH	
Signal Output	Active pulses by push/pull amplifier output. Min. high level: 18 V Max. low level: 2 V Sensor supply failure signal indicated by relay output (NO).	
Protection grade provided to the Ex-area	Ex ia IIC Division 1, Class I, Group A–D	
Installation	The barrier must be installed in a safe (non-hazardeous) area or within an explosion-proof (Ex d) enclosure.	
Enclosure	Plastic snap-on-track enclosure for 35 mm rail Protection grade IP20 (NEMA 1) Dimensions 70 x 75 x 110 mm Weight approx. 0.4 kg	
Power Supply	D461.xxU1: 18…40 Vuc, power requirements approx. 5 W D461.xxU2: 85…250 Vac, power requirements approx. 5 W	
Connectors (Wiring)	Screw mounting, terminal blocks, accepting 0.2…2.5 mm² cross section	
Operating Conditions	Ambient temperature: 0…50 °C (32…122 °F) Relative humidity max. 95%, non-condensing	

Available Models

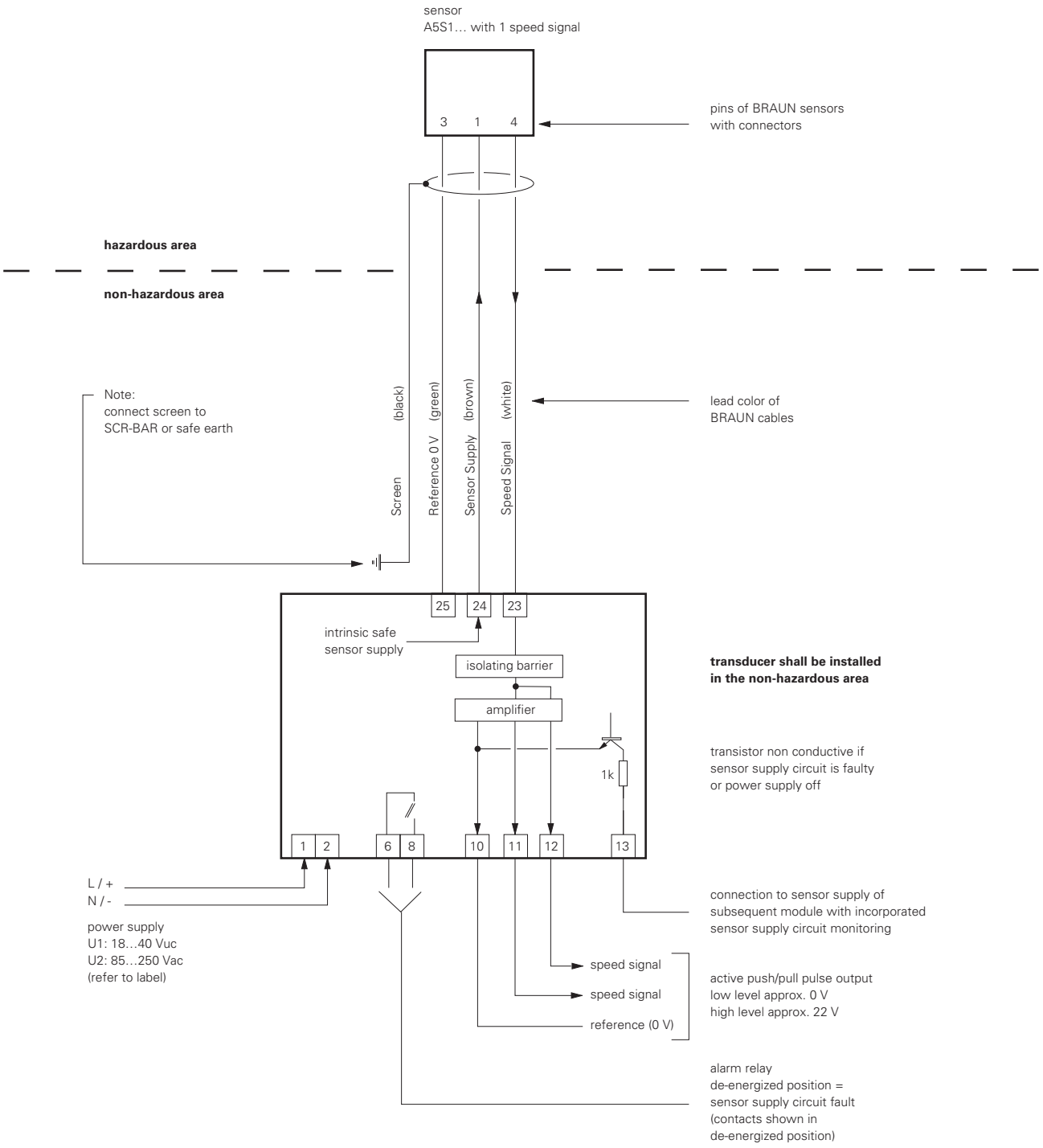
with identical dimensions and input / output specifications

	Power Supply	In	Out	Application
D461.11U1 D461.11U2	18...40 Vuc 85...250 Vac	1	1	one speed signal
D461.12U1 D461.12U2	18...40 Vuc 85...250 Vac	1	2	one speed signal with two outputs
D461.21U1 D461.21U2	18...40 Vuc 85...250 Vac	2	2	one speed and one direction signal or two speed signals

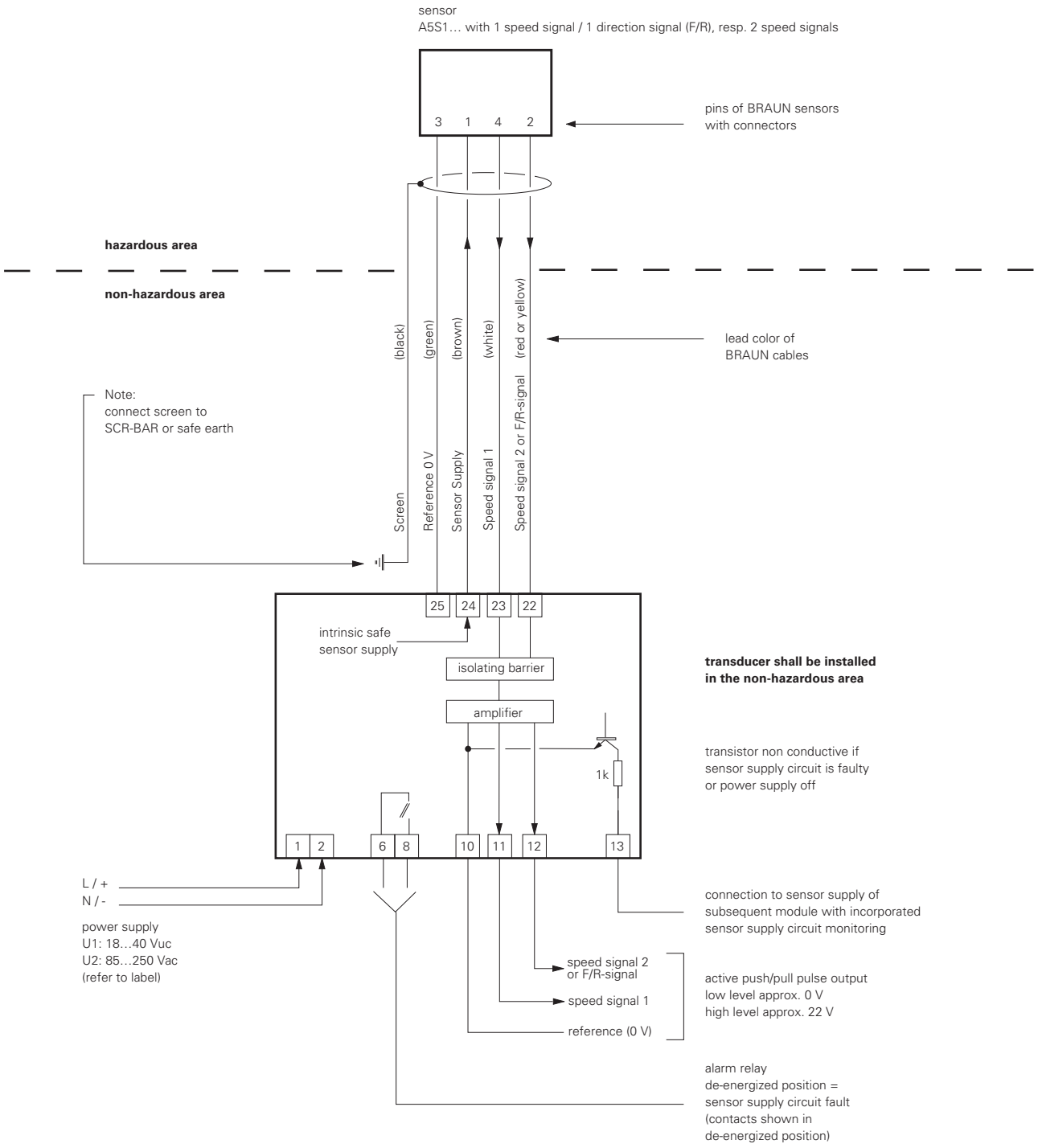
Function Diagram and Terminal Nos of D461.11



Function Diagram and Terminal Nos of D461.12



Function Diagram and Terminal Nos of D461.21



Ordering Key D461

D461. a b

Channels incorporated
a = 11 : 1x signal input into 1x isolated signal output
a = 12 : 1x signal input into 2x isolated signal output
a = 21 : 2x signal input into 2x isolated signal output

Supply voltage
b = U1 : 18…40 Vuc
b = U2 : 85…250 Vac

Examples:

D461.11U2:
with 1 input signal into 1 isolated signal output signal for 85...250 Vac

D461.11U1:
with 1 input signal into 1 isolated signal output signal for 18...40 Vuc

D461.12U1:
with 1 input signal into 2 isolated signal output signals for 18...40 Vuc

D461.21U2:
with 2 input signals into 1 each isolated signal output signal for 85...250 Vac

BRAUN – Speed Monitoring and Protection Systems for Rotating Equipment

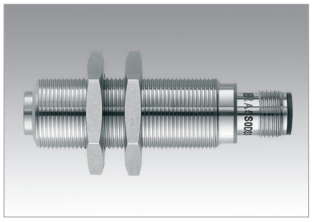
BRAUN is a worldwide leading supplier of protection systems for rotating equipment in industrial applications that require the highest standards of safety and availability.

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

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BRAUN Speed and Frequency

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