

The BA517E-SS is a rugged third generation general purpose tachometer housed in a 316 stainless steel enclosure with a 10mm thick toughened glass window. The instrument has IP66 front of panel protection and is suitable for use in hostile and marine environments or where the front of the instrument is likely to be impacted. The tachometer is easy to use and can be configured on-site to operate with a magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse sensor. A slide-in scale card can be supplied printed with units of measurement, or can easily be marked on-site.

**Main application** of the BA517E-SS is to measure and display rotational speed within a hostile process area. To assist with routine maintenance the BA517E-SS tachometer also includes a run-time clock that records the number of hours that the monitored machinery has been operating.

**The display** has high contrast and a wide viewing angle, allowing the tachometer to be read in most lighting conditions over a wide temperature range. Speed may be displayed in almost any units of measurement per second, minute or hour. Run-time is shown on the lower display in hours with a tenth of an hour resolution. If not required, the run-time display may be disabled.

**IP66 front panel protection** with a silicone gasket to seal the joint between the tachometer and the instrument panel allows the BA517E-SS to be installed in areas that will be washed down. To simplify installation and maintenance, the tachometer has removable terminal blocks enabling panel wiring to be completed before the instrument is installed.

**Display backlighting** which is internally powered from the tachometer is available as a factory fitted option. It provides green background illumination enhancing daylight viewing and allowing the display to be easily read at night or when installed in a poorly illuminated area.

**One of the following three optional outputs** may be factory fitted to the BA517E-SS tachometer. All are isolated and factory fitted options

**Optional open collector pulse output** synchronously retransmits the tachometer input pulse to other instruments. The output pulse frequency may be divided and the pulse width may be defined.

**Optional 4/20mA current sink** may be configured to produce an analogue output proportional to any part of the speed display.

**Optional dual alarms** which can switch loads such as a sounder or solenoid valve. The two galvanically isolated, solid state voltage free outputs may be independently configured as speed or run-time alarms with normally open or closed outputs. Annunciators on the BA517E-SS display show the status of both alarm outputs.

**For less hostile environments** the BA517E is identical to the BA517E-SS except that it is housed in a Noryl enclosure also providing IP66 front of panel protection.

**For applications in flammable atmospheres** the BA317E-SS, which is identical to the BA517E-SS, has international intrinsic safety certification. For lower risk installations in Zone 2 and Zone 22, the rugged BA317NE has Ex nA and Ex tc approval allowing use without Zener barriers or galvanic isolators.

# BA517E-SS

## Rugged one input tachometer

### General purpose

- ◆ 105 x 60mm rugged 316 stainless steel enclosure with IP66 front protection.
- ◆ Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.
- ◆ Separate speed and run-time displays.
- ◆ Simple on-site scale card installation.
- ◆ Optional: Backlight dual alarms or 4/20mA output or pulse output
- ◆ 3 year guarantee

**BEKA**  
associates

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## SPECIFICATION

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#### Power supply

Voltage	10 to 30V dc	
Current	16mA max plus 22.5mA for optional backlight	

#### Input

	Lower	Upper	switching thresholds
Switch contact	100Ω	1kΩ	
Proximity detector (NAMUR)	1.2mA	2.1mA	
Open collector	2kΩ	10kΩ	
Magnetic pick-off	0	+40mV	
Voltage pulse (low)	1V	3V	30V max
Voltage pulse (high)	3V	10V	30V max

#### Frequency

Switch contact	150Hz typical	} Depends upon pulse width and debounce setting.
Other inputs	100kHz max	
All inputs	0.01Hz min	

#### Display

Type	Liquid crystal
Zero blanking	Blanked apart from 0 in front of decimal point

#### Speed

Decimal point	8 digits 9mm high 1 of 7 positions or absent
Run-time	6 digits 6mm high 99999.9hours max

#### Grand total run-time

5 x 10<sup>6</sup> hours max

#### Remote reset

Contact closure with resistance less than 10kΩ

#### Configurable functions

Speed scale factor  
Adjustable between 0.0001 and 99999 input pulses / revolution.

#### Speed timebase

Speed may be displayed per second, minute or hour.

#### Environmental

Operating temp	-40 to +70°C display -20 to +70°C
Storage temp	-40 to +85°C
Humidity	To 95% at 40°C non condensing
Vibration	Report available
Enclosure	
Material	BS 3146-2:1977 ANC4B (316)
Protection	Front IP66, rear IP20
EMC	Complies with 2014/30/EU

#### Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm <sup>2</sup> cable, removable
Weight	0.85kg

#### Accessories

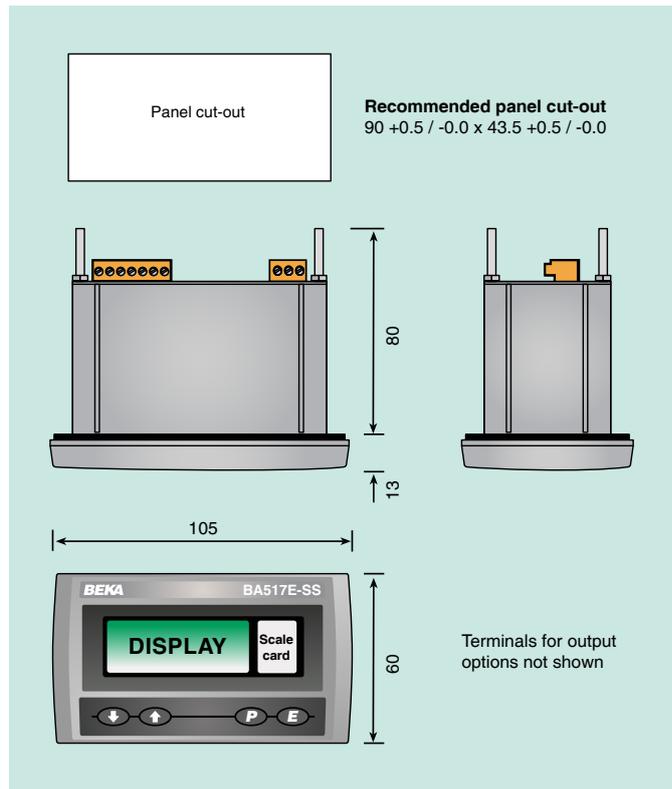
Backlight	Green LED internally powered
Scale card	Blank card fitted to all instruments. Can be supplied typeset with specified units of measurement for no additional charge at time of tachometer purchase. #
Tag legend	Specified tag number or application printed onto rear of instrument. #
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #

One of the following three output accessories may be factory fitted to each tachometer. All have isolated outputs.

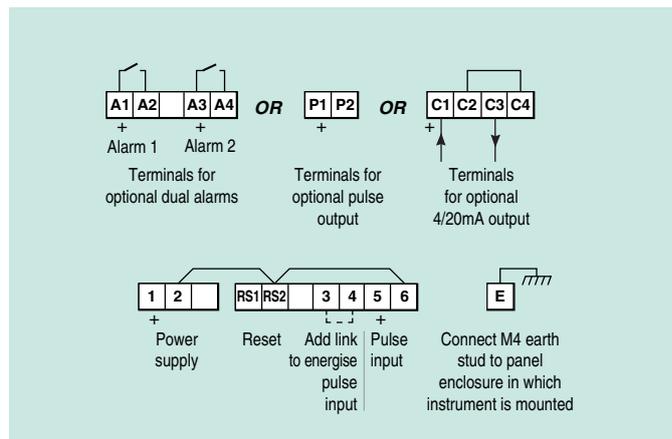
Pulse output	Isolated open collector
Frequency	5kHz max, synchronous with input pulse or divisible.
Divisible by	1, 10, 100, 1000 or 10000
Pulse width	0.1, 0.5, 1, 2.5, 5, 10, 25, 50, 100, 250 or 500ms
Ron	51Ω + 3V max
Roff	1MΩ min
I max	10mA
4/20mA output	Isolated current sink.
Voltage drop	5 to 30V
Alarms	Two alarms each of which may be independently configured as a speed or run-time, high or low alarm with a NO or NC output.
Outputs	Isolated single pole, voltage free solid state switch.
Ron	5Ω + 0.7V max
Roff	1MΩ min
V max	30V dc
I max	200mA

# See accessory datasheet for details

## DIMENSIONS (mm)



## TERMINAL CONNECTIONS



## HOW TO ORDER

Model number	Please specify BA517E-SS
Input	Type *
Speed scale factor	XXXXX *
Speed timebase	Seconds, minutes or hours*
<b>Accessories</b>	<b>Please specify if required</b>
Display backlight	Backlight
Scale card	Legend required
	No charge if ordered with tachometer
Tag	Legend required
Rear cover and sealing kit	BA495
One of following three output options:	
Pulse output	Direct retransmission or scaled*
or 4/20mA output	4/20mA output
or Dual alarms	Alarms

\* Tachometer can be supplied configured as required for no additional charge. If configuration information is not supplied, instrument will be configured for open collector input with speed scaling factor of 1.0 and a timebase of minutes. Can easily be reconfigured on-site.