

Set Point Station [Generator]



For manually adjusting a 4/20mA process variable or controller set point from within a hazardous or safe area using the instrument's push buttons. These loop powered instruments incorporate a display to show the operator the 4/20mA current in engineering units.

> **General purpose and certified hazardous area models**

International Ex ia intrinsic safety certification.

> **Rugged stainless steel Ex ia models**

May be installed in certified Ex e, Ex p or Ex t panel enclosure without invalidating the enclosure's certification.

> **IP66 front panels**

> **BA490 Quadrature rotary encoder**

Alternative to using the set point station's push buttons, current can be controlled by an external rotary encoder such as the BA490.

> **-40 to +70°C operating temperature range**

> **Accessories**

Display backlight may be loop or separately powered

Scale card - *can be supplied printed with units of measurement and tag information for no additional charge*

Rear IP66 sealing kit

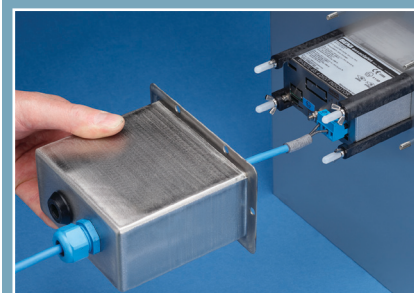
Intrinsically safe

General purpose



BA490

Quadrature Rotary Encoder - optional



BA495

Rear IP66 sealing kit



Set Point Stations [Generators] available

Model No.	Mounting	Display digits No. x height	Certification					
			Europe ATEX		International IECEx		USA & Canada	
			Gas	Dust	Gas	Dust	Gas	Dust

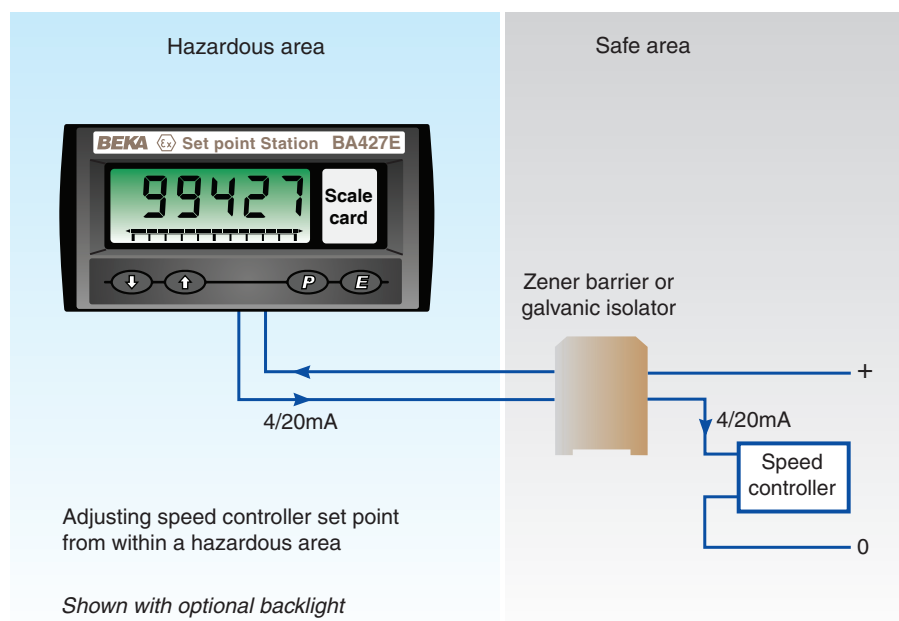
Ex ia intrinsically safe - for use in Zones 0, 1 & 2 and 20, 21 & 22 where certified

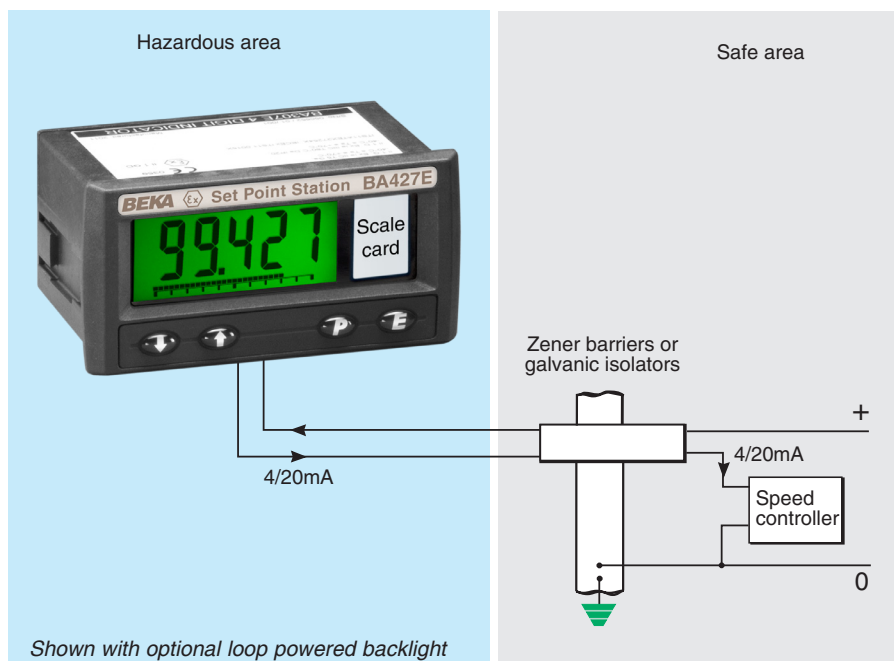
BA427E	Panel 96 x 48	5 x 11mm bargraph	✓	✓	✓	✓	✓	–
BA427E-SS	Panel Rugged 105 x 60	5 x 11mm bargraph	✓	✓	✓	✓	–	–

General Purpose - for use in safe areas

BA627E	Panel 96 x 48	5 x 11mm bargraph						
BA627E-SS	Panel Rugged 105 x 60	5 x 11mm bargraph						

A **Set Point Station** for every **application**.....
delivered ready for **installation**





The BA427E is an intrinsically safe panel mounting set point station that enables the current flowing in a 4/20mA loop to be manually adjusted via the front panel push buttons from within the hazardous area. It is a second generation instrument that is mechanically and electrically compatible with the earlier BA405C, but has more display digits plus additional functions.

Main application of the BA427E is the adjustment of a 4/20mA plant parameter from within a hazardous area. For example, used as the remote set point generator for a speed controller the BA427E enables speed adjustments from within the hazardous process area. The BA427E may also be used to position an actuator or valve with a 4/20mA input. The BA427E incorporates a five digit display plus a bargraph that may be calibrated to show the engineering units represented by the 4/20mA current, allowing an operator to easily set the process variable to the required value.

International intrinsic safety certification permits the BA427E to be installed throughout the world. All input safety parameters are the same or greater than those for the preceding BA405C, thus allowing the BA427E to safely replace the earlier model.

Five pre-set output values may be rapidly selected using the instrument's front panel push buttons for applications where the same output values are repeatedly required. To minimise plant disturbance when the output is adjusted or switched between pre-sets, the maximum rate of output current change may be defined. The 4/20mA output range may also be restricted so that operators can only adjust the plant variable within safe limits.

The bold 11mm high liquid crystal display provides maximum contrast and has a very wide viewing angle, allowing the BA427E set point station display to be read easily in most lighting conditions over a wide temperature range. The five digits, with four decimal points and a negative sign, may be configured to display any variable

represented by the 4/20mA output current between -9999 and 9999.

Engineering units represented by the 4/20mA output current are shown on the scale card viewed through a window on the right hand side of the display. If the units are specified when the BA427E is ordered a printed scale card will be fitted. If units are not specified, a blank card will be supplied which can easily be marked and installed on-site without dismantling the set point station enclosure or removing it from the panel.

Display backlighting which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop no additional intrinsically safe interface or wiring is required. Powering from a separate supply produces a brighter backlight but requires an additional intrinsically safe interface and field wiring. Two backlights may be separately powered from one intrinsically safe interface.

IP66 front panel protection and a neoprene gasket to seal the joint between the set point station and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the set point station has a removable terminal block allowing panel wiring to be completed before the BA427E is installed.

A BA490 panel mounting external rotary encoder may be directly connected to the BA427E set point station to provide analogue control of the output current. The encoder complies with the requirements for Simple Aparatus and can be installed in the same hazardous area as the set point station.

Reliability is ensured by component conformal coating, protection from incorrect connection and radio frequency interference. The set point station has been subjected to vibration testing and is supported by a three year guarantee.

BA427E

4/20mA manual set point station [set point generator]

Intrinsically safe for use in all gas and dust hazardous areas

- ◆ Loop powered
- ◆ Intrinsically safe ATEX, IECEx ETL & cETL.
- ◆ 5 digit 11mm high display & 31 segment bargraph.
- ◆ Optional backlight & BA490 external rotary encoder.
- ◆ IP66 front
- ◆ Easy on-site scale card installation.
- ◆ 96 x 48mm DIN enclosure.
- ◆ 3 year guarantee

www.beka.co.uk/ba427e



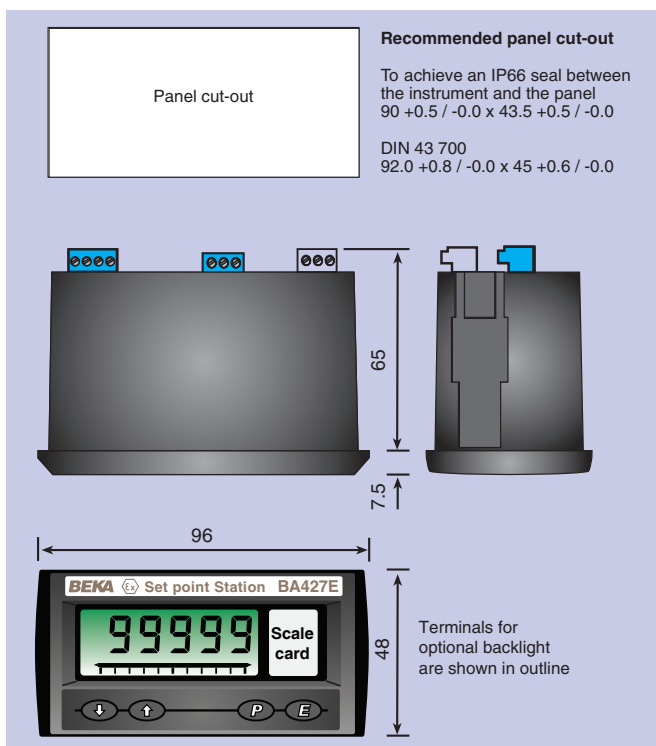
BEKA associates

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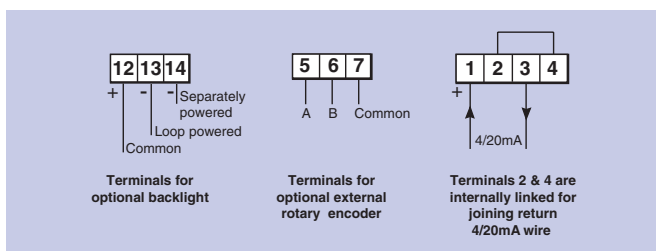
SPECIFICATION

Output	
Current	3.0 to 22.0mA
Resistance	Greater than 1MΩ
Power supply	
Voltage	6.1 to 30V 10 to 30V when optional backlight is loop powered.
Accuracy	
Control resolution	1 least significant digit of the display, or 0.3μA whichever is greater.
Temperature effect	Less than 2μA/°C
Display	
Type	Liquid crystal, non-multiplexed 5 digit 11mm high with 31 segment bargraph.
Zero	Adjustable between 0 & ±99999 with 4mA output.
Span	Adjustable between 0 & ±99999 with 20mA output.
Decimal point	1 of 4 positions or absent
Zero blanking	Blanked apart from 0 in front of decimal point.
Direction	Display may increase or decrease with increasing 4/20mA output.
Push buttons 'E' and ▼ or ▲	(Function in operating mode) Scrolls output current down or up. Pressing 'E' prevents output current being accidentally adjusted if ▼ or ▲ buttons or optional rotary encoder are inadvertently operated. This function can be disabled in the configuration menu. Shows display calibration with 4mA output. Shows display calibration with 20mA output. Displays output current in mA, as a % of span or provides access to pre-set outputs.
▼ ▲ 'P'	
Intrinsic safety Europe ATEX Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Cert. No.	ITS12ATEX27718X (Special conditions only apply for use in Group IIIC conductive dusts)
International IECEx Code	Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 70°C IECEx ITS12.0084X (Special conditions only apply for use in Group IIIC conductive dusts)
Cert. No	
USA ETL Standards	ANSI/ISA 60079-0 & 11 conforms to UL 913 7th edition & UL 60079-0 & 11.
IS Code	IS CL I, Div 1, GP A, B, C, & D: CL I, ZN 0, AEx ia IIC T5 Ga.
NI Code	NI CL I, DIV 2, GP A, B, C & D: CL II, DIV 2, GP E, F & G: CL III, T5. CL I, ZN 2, GP IIA, IIB, IIC, T5 Ta = 70°C
File	4008610
Canada cETL File	4008610
Environmental	
Operating temp	-40 to 70°C
Storage temp	-40 to 85°C
Humidity	To 95% at 40°C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU
Mechanical	
Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable.
Weight	0.2kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

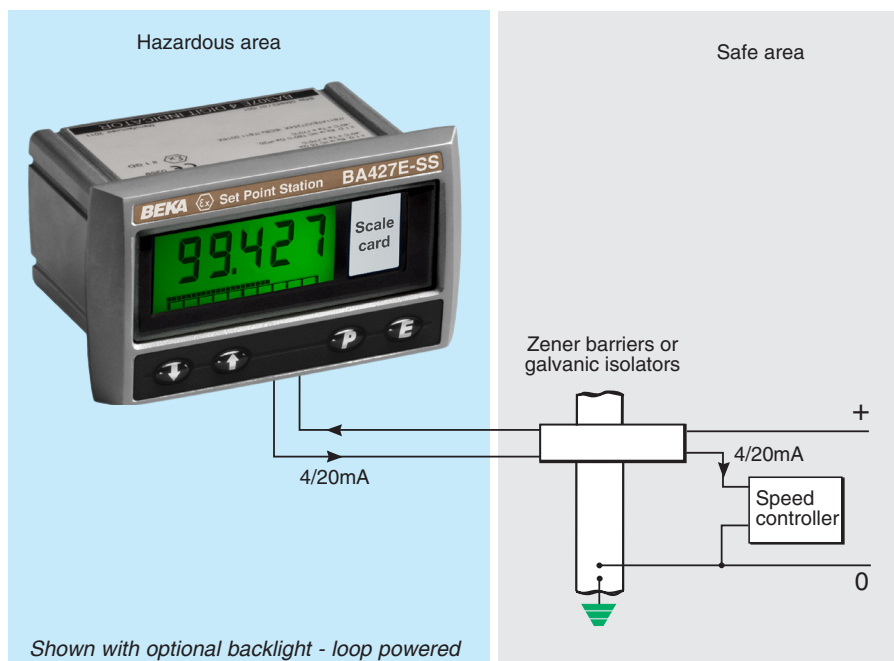
Backlight	Green, may be loop or separately powered.
Loop powered	Set point station + backlight supply 10 to 30V.
Separately powered	9 to 30V at 22mA from IS interface
Printed scale card	Blank card fitted to each Set Point Station can be supplied typeset with specified engineering units.
Tag legend	Specified tag number or application thermally printed onto rear of the instrument.
BA490 rotary encoder	Panel mounting IP65 sealed rotary encoder which provides analogue control of the BA427E output current. Complies with the requirements for <i>Simple Apparatus</i> . See separate datasheet.
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #

See accessory datasheet for details

HOW TO ORDER

Model number	BA427E
Display at:	XXXXX } Include position of 4.000mA } decimal point & sign if negative * 20.000mA }
Accessories	Please specify if required
Display backlight	Backlight
Scale card	Legend required
Tag	Legend required
External rotary encoder	BA490
Rear cover and sealing kit	BA495

* Will be set to display 0.00 at 4mA output and 100.00 at 20mA output if calibration information is not supplied. Calibration can easily be changed on-site.



The **BA427E-SS** set point station enables the current flowing in a 4/20mA loop to be manually adjusted from within a hazardous area via the front panel push buttons. Intrinsic safety certification and a rugged stainless steel housing allows the BA427E-SS to be safely installed in an Ex e, Ex p, Ex n or Ex t panel enclosure without invalidating the enclosures certification. It is also suitable for intrinsically safe applications in uncertified panels, in marine environments or where the front of the instrument is likely to be impacted.

Main application of the BA427E-SS is the manual adjustment of a 4/20mA plant parameter such as a controller set point from within a hazardous area. To simplify adjustment, the display may be calibrated to show the output current in engineering units. The front of the set point station has IP66 ingress and impact protection which has been certified to allow installation in an Ex e, Ex n, Ex p or Ex t panel enclosure without invalidating the enclosure certification.

ATEX and IECEx intrinsic safety certification permits the BA427E-SS to be installed throughout the world. Both certificates clearly specify where the set point station may be installed and a detailed explanation is contained in the instruction manual.

A large digital display and 31 segment bargraph may be calibrated to show the engineering units represented by the 4/20mA current, allowing an operator to easily set the process variable to the required value.

Up to five pre-set output values may be rapidly selected using the instrument's front panel push buttons for applications where the same output currents are repeatedly required. To minimise plant disturbance when the output is adjusted

or switched between pre-sets, the maximum rate of output current change may be defined. The 4/20mA output range may also be restricted so that operators can only adjust the plant variable within safe limits.

Units of measurement represented by the 4/20mA output current may be shown on the slide-in scale card which is viewed through the window on the right hand side of the display. If the units are specified when the BA427E-SS is ordered a printed scale card will be fitted. If units are not specified, a blank card will be fitted which can easily be marked and installed on-site without dismantling the set point station enclosure or removing it from the panel.

Display backlighting which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop no additional intrinsically safe interface or wiring are required. Powering from a separate supply produces a brighter backlight but requires an additional intrinsically safe interface and field wiring. Two backlights may be separately powered from one intrinsically safe interface.

An external quadrature encoder may be directly connected to the BA427E-SS set point station to provide analogue control of the output current. Most three wire devices, such as the BEKA BA490 panel mounting rotary encoder may be located up to 1m from the BA427E-SS.

Reliability is ensured by component conformal coating, protection from incorrect connection and radio frequency interference. The set point station has been subjected to vibration testing and is supported by a three year guarantee.

BA427E-SS

Rugged 4/20mA manual set point station

[set point generator]

Intrinsically safe suitable for use in a Ex e, Ex n, Ex p or Ex t panel enclosure and in harsh environments

- ◆ **Loop powered**
- ◆ **Front of instrument maintains Ex e, Ex p, Ex n and Ex t panel enclosure certification.**
- ◆ **Rugged IP66 stainless steel enclosure.**
- ◆ **Intrinsically safe ATEX & IECEx.**
- ◆ **5 digit 11mm high display & 31 segment bargraph.**
- ◆ **Optional backlight and BA490 external rotary encoder.**
- ◆ **3 year guarantee**

www.beka.co.uk/ba427e-ss



BEKA

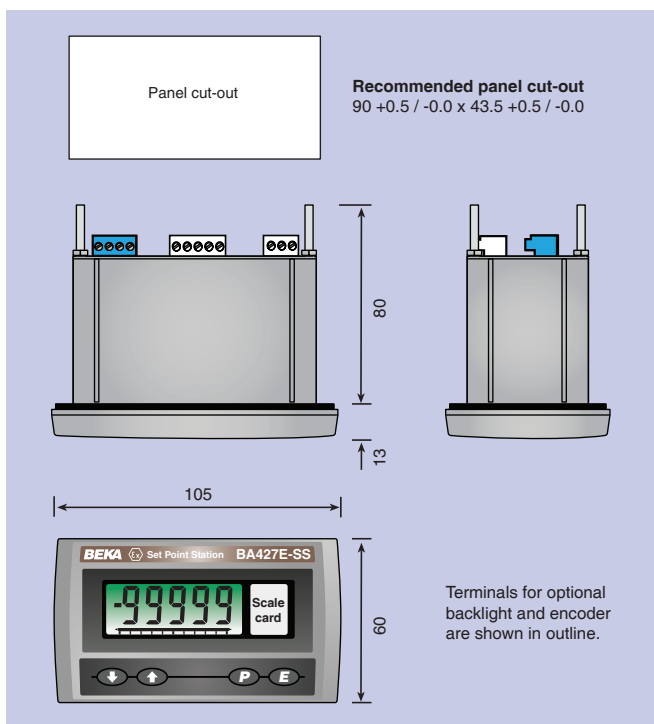
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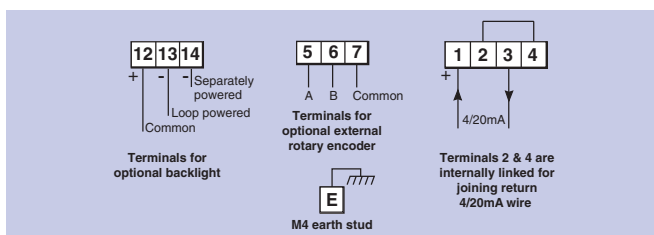
SPECIFICATION

Output	
Current	3.0 to 22.0mA
Resistance	Greater than 1MΩ
Power supply	
Voltage	6.1 to 30V 10 to 30V when optional backlight is loop powered.
Accuracy	
Control resolution	1 least significant digit of the display, or 0.3μA whichever is greater.
Temperature effect	Less than 2μA/°C
Display	
Type	Liquid crystal, non-multiplexed 5 digit 11mm high with 31 segment bargraph.
Zero	Adjustable between 0 & ±99999 with 4mA output.
Span	Adjustable between 0 & ±99999 with 20mA output.
Decimal point	1 of 4 positions or absent
Zero blanking	Blanked apart from 0 in front of decimal point
Direction	Display may increase or decrease with increasing 4/20mA output.
Push buttons	
<div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> </div>	
(Function in operating mode)	
Scrolls output current down or up. Two handed activation prevents output current being accidentally adjusted if  or  button or external encoder are inadvertently operated. Can be set to single handed operation in configuration menu.	
 Shows display calibration with 4mA output	
 Shows display calibration with 20mA output	
 Displays output current in mA, as a % of span or provides access to pre-set outputs.	
Intrinsic safety	
Europe ATEX	
Code	Group II Category 1GD Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to +60°C (-40 to +70°C when not mounted in certified enclosure).
Input parameters	
Ui	30V dc
Ii	200mA
Pi	0.84W
Cert. No.	ITS15ATEX28365X (Special conditions permit installation in Ex e, Ex n, Ex p and Ex t enclosures and apply for use in Group IIIC conductive dusts).
International IECEx	
Code	
Ex ia IIC T5 Ga Ex ia IIIC T80°C Da IP20 Tamb = -40 to 60°C (-40 to +70°C when not mounted in certified enclosure).	
Cert. No	IECEX ITS15.0056X (As ATEX special conditions).
Environmental	
Operating temp	
-40 to +70°C (May be limited to -40 to +60°C when mounted in certified enclosure - see intrinsic safety certificates).	
Storage temp	
-40 to +85°C	
Humidity	
to 95% at 40°C noncondensing	
Vibration	
Report available	
Enclosure	
Front IP66, rear IP20	
Ingress protection	
Stainless steel BS 3146-2:1977 ANC4B (316)	
Material	
Complies with 2004/108/EC	
EMC	
Mechanical	
Terminals	
Screw clamp for 0.5 to 1.5mm² cable, removable.	
Weight	0.85kg

DIMENSIONS (mm)



TERMINAL CONNECTIONS



Accessories

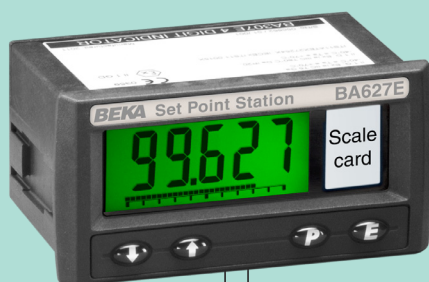
Backlight	Green, may be loop or separately powered
Loop powered	Set point station + backlight 10 to 30V
Separately powered	9 to 30V at 22mA from IS interface
Printed scale card	Blank card fitted to each Set Point Station, can be supplied typeset with specified engineering units.
Tag legend	Specified tag number or application laser etched onto rear of the instrument.
External encoder	BA490 panel mounting rotary quadrature encoder which may be located up to 1m away from the BA427E-SS. See separate datasheet.
BA495 rear cover and sealing kit	Provides impact and IP66 protection for rear of instrument. #

See accessory datasheet for details

HOW TO ORDER

Model number	BA427E-SS
Display at:	XXXXXX } Include position of decimal point & sign if negative *
4.000mA	
20.000mA	
Accessories	
Display backlight	Backlight
Scale card	Legend required - No Charge if ordered with Set Point Station.
Tag	Legend required
External rotary encoder	BA490
Rear cover and sealing kit	BA495

* Will be set to display 0.00 at 4mA output and 100.00 at 20mA output if calibration information is not supplied. Calibration can easily be changed on-site.



Shown with optional loop powered backlight

The **BA627E** is a panel mounting set point station that enables the current flowing in a 4/20mA loop to be manually adjusted via the front panel push buttons from within the process area. It is a second generation instrument that is mechanically and electrically compatible with the earlier BA505C, but has more display digits plus additional functions.

Main application of the BA627E is the adjustment of a 4/20mA plant parameter from within a process area. For example, as the remote set point generator for a speed controller or for positioning an actuator or valve with a 4/20mA input. The BA627E incorporates a five digit display plus a bargraph that may be calibrated to show the engineering units represented by the 4/20mA current, allowing an operator to easily set the process variable to the required value.

Five pre-set output values may be rapidly selected using the instrument's front panel push buttons for applications where the same output values are repeatedly required. To minimise plant disturbance when the output is adjusted or switched between pre-sets, the maximum rate of output current change may be defined. The 4/20mA output range may also be restricted so that an operator can only adjust the plant variable within safe limits.

The **bold 11mm** high liquid crystal display provides maximum contrast and has a very wide viewing angle, allowing the BA627E set point station display to be read easily in most lighting conditions over a wide temperature range. The five digits, with four decimal points and a negative sign, may be configured to display any variable represented by the 4/20mA output current between -99999 and 99999.

Engineering units represented by the 4/20mA output current are shown on the scale card viewed through a window on the right hand side of the display. If the

units are specified when the BA627E is ordered a printed scale card will be fitted. If units are not specified, a blank card will be supplied which can easily be marked and installed on-site without dismantling the set point station enclosure or removing it from the panel.

Display backlighting which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop the minimum operating voltage of the BA627E is increased. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

IP66 front panel protection and a neoprene gasket to seal the joint between the set point station and the panel make the instrument suitable for use in areas that will be cleaned with a hose. To simplify installation and maintenance, the set point station has a removable terminal block allowing panel wiring to be completed before the BA627E is installed.

A **BA490 panel mounting rotary encoder** may be directly connected to the BA627E set point station to provide analogue control of the output current. Although the BEKA BA490 has been designed for this application, almost any quadrature encoder with a contact output may be used.

Reliability is ensured by component conformal coating, protection from incorrect connection and radio frequency interference. The set point station has been subjected to vibration testing and is supported by a three year guarantee.

For applications in hazardous areas the BA627E, which has similar features as the BA427E, has ATEX and IECEx certification allowing installation in most gas and dust hazardous area.

BA627E

**4/20mA manual
set point station
[set point generator]**

General purpose

- ◆ **Loop powered**
- ◆ **5 digit 11mm high display & 31 segment bargraph.**
- ◆ **Optional backlight & BA490 external rotary encoder.**
- ◆ **IP66 front**
- ◆ **Easy on-site scale card installation.**
- ◆ **96 x 48mm DIN enclosure.**
- ◆ **3 year guarantee**

www.beka.co.uk/ba627e

BEKA
associates

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SPECIFICATION

Output

Current	3.0 to 22.0mA
Resistance	Greater than 1M Ω

Power supply

Voltage	6.1 to 30V 10 to 30V when optional backlight is loop powered.
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Accuracy

Control resolution	1 least significant digit of the display, or 0.3 μ A whichever is greater.
Temperature effect	Less than 2 μ A/ $^{\circ}$ C

Display

Type	Liquid crystal, non-multiplexed 5 digit 11mm high with 31 segment bargraph.
Zero	Adjustable between 0 & $\pm$ 99999 with 4mA output.
Span	Adjustable between 0 & $\pm$ 99999 with 20mA output.
Decimal point	1 of 4 positions or absent
Zero blanking	Blanked apart from 0 in front of decimal point.
Direction	Display may increase or decrease with increasing 4/20mA output.

Push buttons

'E' and ▼ or ▲

(Function in operating mode)
Scrolls output current down or up.
Pressing 'E' prevents output current
being accidentally adjusted if ▼ or ▲
buttons or optional rotary encoder are
inadvertently operated. This function
can be disabled in the configuration
menu.

▼	Shows display calibration with 4mA output.
▲	Shows display calibration with 20mA output.
'P'	Displays output current in mA, as a % of span or provides access to pre-set outputs.

Environmental

Operating temp	-40 to 70 $^{\circ}$ C
Storage temp	-40 to 85 $^{\circ}$ C
Humidity	to 95% at 40 $^{\circ}$ C noncondensing
Vibration	Report available
Enclosure	Front IP66, rear IP20
EMC	Complies with EMC Directive 2014/30/EU

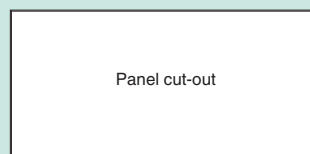
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm ² cable, removable.
Weight	0.2kg

Accessories

Backlight	Green, may be loop or separately powered.
Loop powered	Set point station + backlight supply 10 to 30V.
Separately powered.	9 to 30V at 22mA
Printed scale card	Blank card fitted to each Set Point Station can be supplied typeset with specified engineering units.
Tag legend	Specified tag number or application thermally printed onto rear of the instrument.

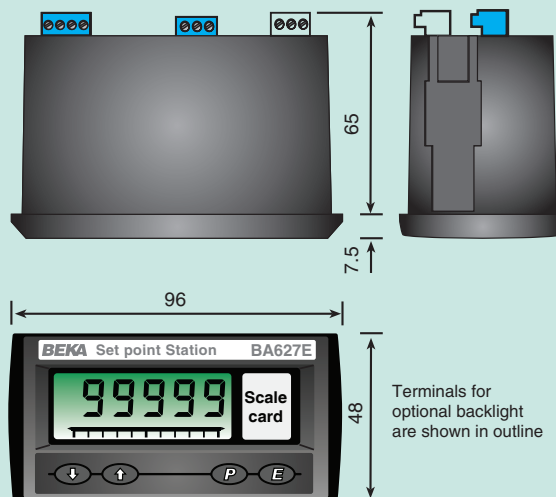
DIMENSIONS (mm)



Recommended panel cut-out

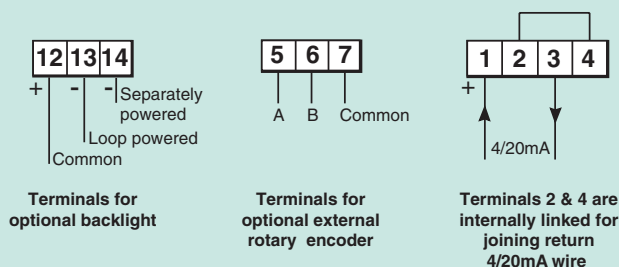
To achieve an IP66 seal between
the instrument and the panel
90 +0.5 / -0.0 x 43.5 +0.5 / -0.0

DIN 43 700
92.0 +0.8 / -0.0 x 45 +0.6 / -0.0



Terminals for
optional backlight
are shown in outline

TERMINAL CONNECTIONS



BA490 Rotary encoder

Panel mounting IP65 sealed rotary
encoder which provides analogue
control of the BA627E output current.
See separate datasheet.

BA495 rear cover
and sealing kit

Provides impact and IP66 protection
for rear of instrument. #

See accessory datasheet for details

HOW TO ORDER

Model number

Display at:

4.000mA
20.000mA

Please specify

BA627E

XXXX } Include position of decimal
XXXX } point & sign if negative *

Accessories

Display backlight

Scale card

Tag

External rotary encoder

Rear cover and sealing kit

Please specify if required

Backlight

Legend required

Legend required

BA490

BA495

* Will be set to display 0.00 at 4mA output and 100.00 at 20mA
output if calibration information is not supplied. Calibration can
easily be changed on-site.



Shown with optional backlight - loop powered

The **BA627E-SS** set point station enables the current flowing in a 4/20mA loop to be manually adjusted from within a process area via the front panel push buttons. Housed in a rugged stainless steel enclosure with a toughened glass window the BA627E-SS is ideal for installations in harsh industrial and marine environments and where the front of the instrument is likely to be impacted.

Main application of the BA627E-SS is the manual adjustment of a 4/20mA plant parameter such as a controller set point from within a process area. For example, as the remote set point generator for a speed controller or for positioning a 4/20mA actuator or valve. The BA627E-SS incorporates a five digit display plus a bargraph that may be calibrated to show the engineering units represented by the 4/20mA output current, enabling an operator to easily set the process variable to the required value.

Up to five pre-set output values may be rapidly selected using the instrument's front panel push buttons for applications where the same output values are repeatedly required. To minimise plant disturbance when the output is adjusted or switched between pre-sets, the maximum rate of output current change may be defined. The 4/20mA output range may also be restricted so that operators can only adjust the plant variable within safe limits.

The **bold 11mm** high liquid crystal display provides maximum contrast and has a very wide viewing angle, allowing the BA627E-SS set point station display to be read easily in most lighting conditions over a wide temperature range. The five digits, with four decimal points and a negative sign may be configured to display any variable represented by the 4/20mA output current between -99999 and 99999.

Engineering units represented by the 4/20mA output current may be shown on the slide-in scale card which is viewed through the window on the right hand side of the display. If the units are specified when the BA627E-SS is ordered a printed scale card will be fitted. If units are not specified, a blank card will be fitted which can easily be marked and installed on-site without dismantling the set point station enclosure or removing it from the panel.

Display backlighting which may be loop or separately powered is available as a factory fitted option. It provides green background illumination allowing the display to be read at night or in poorly illuminated areas. When powered from the 4/20mA loop the minimum operating voltage of the BA627E-SS is increased. Powering from a separate supply produces a brighter backlight but requires additional field wiring.

An external quadrature encoder may be directly connected to the BA627E-SS set point station to provide analogue control of the output current. Most three wire devices, such as the BEKA BA490 panel mounting rotary encoder may be located up to 1m from the BA627E-SS.

Reliability is ensured by component conformal coating, protection from incorrect connection and radio frequency interference. The set point station has been subjected to vibration testing and is supported by a three year guarantee.

For applications in hazardous areas the BA427E-SS, which has similar features as the BA627E-SS, has IECEx and ATEX certification allowing installation in most gas and dust hazardous areas. It may also be installed in Ex e, Ex n, Ex p and Ex t panel enclosures without invalidating the enclosure certification.

BA627E-SS

Rugged 4/20mA manual set point station [set point generator]

General purpose for use in harsh and marine environments

- ◆ **Loop powered**
- ◆ **Rugged IP66 stainless steel enclosure.**
- ◆ **5 digit 11mm high display & 31 segment bargraph.**
- ◆ **Optional backlight & BA490 external rotary encoder.**
- ◆ **Easy on-site scale card installation.**
- ◆ **3 year guarantee**

www.beka.co.uk/ba627e-ss

BEKA
associates

BEKA associates Ltd. Old Charlton Rd.
Hitchin, Hertfordshire, SG5 2DA, U.K.
Tel. (01462) 438301 Fax (01462) 453971
e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Output

Current 3.0 to 22.0mA

Resistance Greater than 1MΩ

Power supply

Voltage 6.1 to 30V
10 to 30V when optional backlight is loop powered.

Accuracy

Control resolution 1 least significant digit of the display, or 0.3μA whichever is greater.

Temperature effect Less than 2μA/°C

Display

Type Liquid crystal, non-multiplexed 5 digit 11mm high with 31 segment bargraph.
Zero Adjustable between 0 & ±99999 with 4mA output.
Span Adjustable between 0 & ±99999 with 20mA output.

Decimal point 1 of 4 positions or absent
Zero blanking Blanked apart from 0 in front of decimal point.

Direction Display may increase or decrease with increasing 4/20mA output.

Push buttons

⏮ and ⏭ or ⏮

(Function in operating mode)
Scrolls output current down or up
Two handed activation prevents output current being accidentally adjusted if ⏮ or ⏭ button or external encoder are inadvertently operated.
Can be set to single handed operation in configuration menu.

⏮

Shows display calibration with 4mA output.

⏭

Shows display calibration with 20mA output.

P

Displays output current in mA, as a % of span or provides access to pre-set outputs.

Environmental

Operating temp -40 to +70°C
Storage temp -40 to +85°C
Humidity to 95% at 40°C noncondensing
Vibration Report available

Enclosure

Ingress protection Front IP66, rear IP20
Material Stainless steel BS 3146-2:1977 ANC4B (316).

EMC

Complies with 2004/108/EC

Mechanical

Terminals Screw clamp for 0.5 to 1.5mm² cable, removable.

Weight 0.85kg

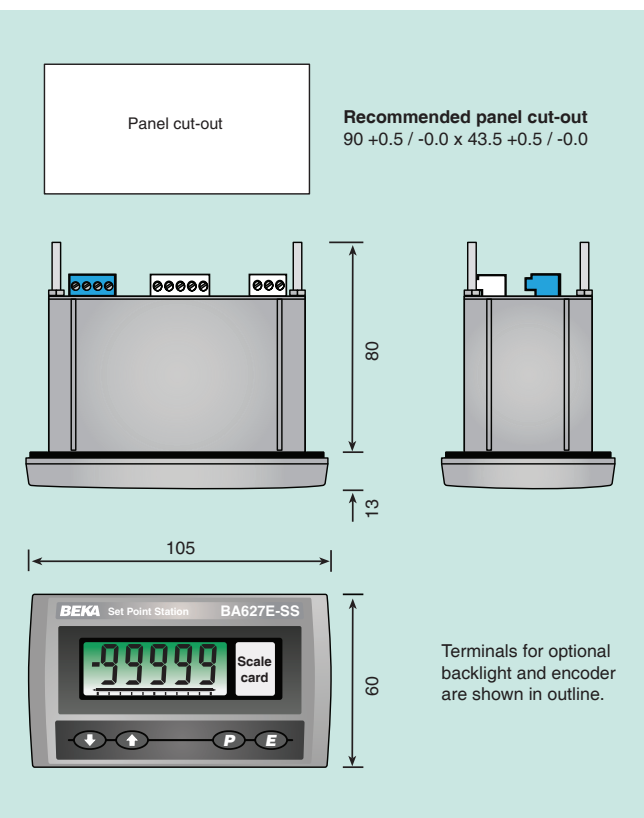
Accessories

Backlight Green, may be loop or separately powered.
Loop powered Set point station + backlight supply 10 to 30V.
Separately powered 9 to 30V at 22mA

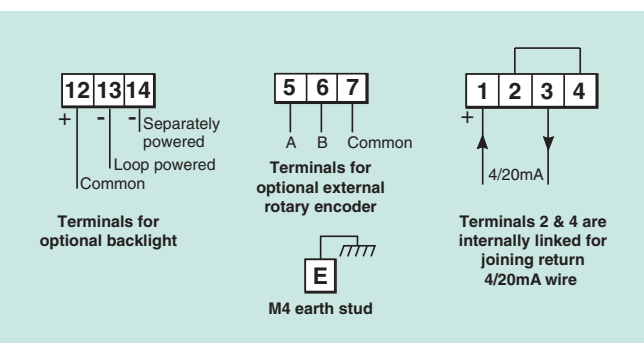
Printed scale card Blank card fitted to each Set Point Station, can be supplied typeset with specified engineering units.

Tag legend Specified tag number or application laser etched onto rear of the instrument.

DIMENSIONS (mm)



TERMINAL CONNECTIONS



External encoder

BA490 panel mounting rotary quadrature encoder which may be located up to 1m away from the BA627E-SS.
See separate datasheet.

BA495 rear cover and sealing kit

Provides impact and IP66 protection for rear of instrument. #

See accessory datasheet for details

HOW TO ORDER

Model number

Display at:
4.000mA
20.000mA

Please specify

BA627E-SS

XXXXX } Include position of decimal
XXXXX } point & sign if negative *

Accessories

Display backlight
Scale card

Please specify if required

Backlight

Legend required - No Charge if ordered with Set Point Station.

Tag

External rotary encoder
Rear cover and sealing kit

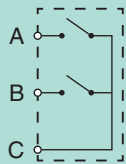
Legend required

BA490

BA495

* Will be set to display 0.00 at 4mA output and 100.00 at 20mA output if calibration information is not supplied. Calibration can easily be changed on-site.

Zone 1, 2, 21, 22 or safe area

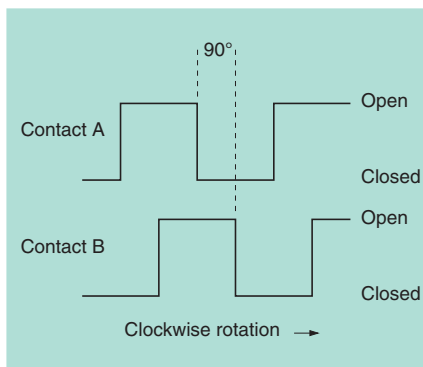


Instrument with quadrature input such as BA427E

The **BA490 encoder** is a robust panel mounting rotary control knob with a quadrature switch contact output, suitable for installation in hazardous or safe process areas. It is designed for easy adjustment by a gloved hand and may be directly connected to almost any instrument that accepts a three-wire quadrature input to provide a simple way of making adjustments from within the process area.

The encoder contains two single pole switches that open and close 90 degrees out of phase with each other as the control knob is rotated. This enables both the position and direction of rotation to be determined. If switch 'A' leads switch 'B', the knob is rotating in a clockwise direction, if 'B' leads 'A', the knob is rotating in a counter-clockwise direction.

A common application for the BA490 encoder is to provide rotary manual control of a BEKA BA427E or BA627E 4/20mA output Set Point Station. Normally the output current of these generators is controlled by the front panel ▼ and ▲ push buttons, but direct connection of the BA490 rotary encoder enables an operator to make adjustments via the conventional rotary control knob.



Compliance with *Simple Apparatus* requirements specified in Clause 5.7 of the international intrinsic safety standard IEC 60079-11 allows the BA490 encoder to be installed in Zones 1, 2, 21 and 22 and to be directly connected to intrinsically safe apparatus located in the same hazardous area.

IP65 sealing of the control knob and the joint between the encoder and the panel prevents ingress when installed in a panel that will be hosed, washed or splashed. When environmental protection behind the panel is also required the BA599 rear sealing assembly accessory provides IP65 protection allowing the encoder to be fitted in a panel with an open back.



BA490

Rotary encoder

Robust control knob with quadrature output

General purpose

- ◆ Quadrature switch contact output.
- ◆ Robust construction
- ◆ *Simple Apparatus* allows installation in a hazardous area.
- ◆ IP65 front of panel protection.
- ◆ 22.5mm hole mounting.
- ◆ 3 year guarantee

www.beka.co.uk/ba490

BEKA

associates

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Tel. (01462) 438301 Fax (01462) 453971
e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Contacts

Rating	5V; 0.5mA
Current	10mA max (resistive load)

Output

Phase	Switch 'A' leads switch 'B' by 90° for clockwise rotation of the control knob.
Resolution	12 pulses per 360° rotation of the control knob.

Insulation

Voltage to conductive panel.	500V ac for 1 minute
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Intrinsic safety

Code	Complies with the requirements for <i>Simple Apparatus</i> specified in Clause 5.7 of IEC 60079-11.
Location	Zone 1, 2, 21 or 22

Environmental

Operating temp	-10 to 70°C
Storage temp	-40 to 85°C
Humidity	to 95% at 40°C noncondensing
Enclosure	Front IP65, rear IP20, see accessories for optional BA599 IP65 rear sealing assembly.
EMC	Complies with 2004/108/EC Electromagnetically benign.

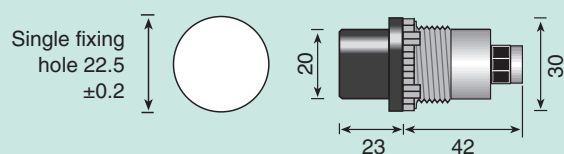
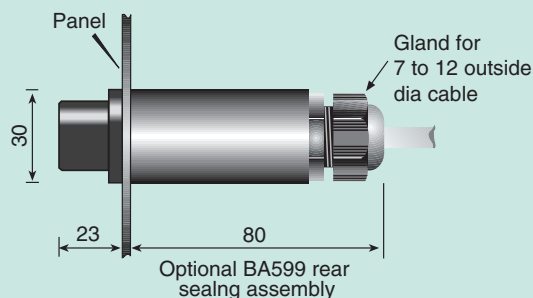
Mechanical

Terminals	Screw clamp for 0.14 to 1mm ² stranded cable.
Weight	50g

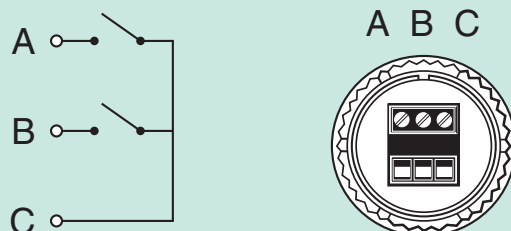
Accessories

BA599	Rear sealing assembly provides IP65 protection for the rear of the encoder. Supplied with gland for 7 to 12mm diameter cable.
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DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

	Please specify
Model number	BA490

	Please specify if required
Accessories	
Rear sealing assembly	BA599