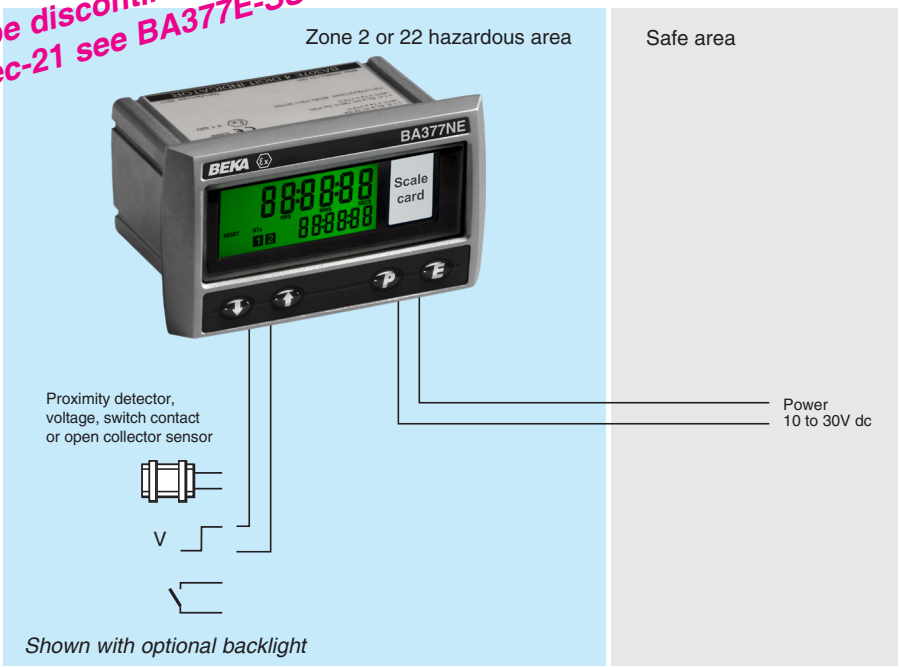
To be discontinued by 31-Dec-21 see BA377E-SS



Shown with optional backlight

BA377NE

Rugged Ex nA & Ex tc one input timer or clock

Can be installed in Zones 2 or 22 without Zener barriers or galvanic isolators.

- **Configurable input: switch contact, proximity detector, open collector or voltage.**
- **Separate displays**
- **Ex nA & Ex tc certified**
- **105 x 60mm rugged 316 stainless steel enclosure with IP66 front protection.**
- **Optional: Backlight Dual control outputs**
- **3 year guarantee**

www.beka.co.uk/ba377ne

The BA377NE timer or clock has a rugged stainless steel enclosure allowing it to be safely installed in an Ex n or Ex tc panel enclosure located in Zones 2 or 22 without the need for Zener barriers or galvanic isolators. The instrument is easy to use and can be configured on-site to operate with sensors having a wide variety of outputs. A slide-in scale card simplifies identification.

Configuration may be performed on-site via the front panel push buttons using simple well documented menus. The Timer employs a state and event structure to simplify configuration. If required the BA377NE can be supplied configured to customer's requirements including a customer defined printed slide-in scalecard for no additional charge.

Applications as a Timer include simply displaying the time interval between two events detected by a hazardous area sensor, such as a 2-wire proximity detector, providing a maintained single input. With the addition of optional dual control outputs, the Timer can perform control functions, for instance opening a hazardous area solenoid valve for a defined time. The Timer includes a powerful cycle function which can be configured to repeat a timing function up to 99 times or continuously, with up to 100 hours delay between timed periods.

As a Clock local time can be displayed in various twelve or twenty four hour formats and the display may be synchronised to a pre-set time via the external reset input. Optional control outputs may be configured to switch loads *on* or *off* at pre-set times twice during each twenty four hour period. The display has high contrast and a wide viewing angle enabling the instrument to be read in most lighting conditions over a wide temperature range.

IP66 front panel protection with a silicone gasket to seal the joint between the instrument and the instrument panel, allow the BA377NE to be installed in areas that will be washed down.

International Ex nA certification permits the BA377NE timer or clock to be installed worldwide. When mounted in a panel enclosure complying with Ex n (non sparking) impact and ingress requirements, the enclosure and instrument may be installed in a Zone 2 hazardous area without barriers or isolators. Certified Ex n or Ex e enclosures are often used. Similarly, the BA377NE can be mounted in an Ex tc enclosure located in Zone 22. BEKA Application Guide AG310 provides Ex nA installation recommendations.

Display backlighting which is internally powered, 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.

Optional dual control outputs can switch hazardous or safe area loads such as a sounder or solenoid valve. The two galvanically isolated, solid state voltage free outputs may be independently conditioned with normally open or closed outputs. Annunciators on the BA377NE display show the status of both control outputs.

Intrinsically safety models and instruments with larger displays are available within the range. The BA377E-SS has the same features as the BA377NE including a rugged stainless steel enclosure, but is certified intrinsically safe Ex ia. If a larger display or momentary action inputs are required the BA378E is a two input intrinsically safe Timer or Clock housed in a 144 x 72mm Noryl DIN enclosure.

BEKA associates

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e-mail sales@beka.co.uk www.beka.co.uk

SPECIFICATION

Power supply

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

Input (Maintained)	**Lower**	**Upper** switching thresholds
Switch contact	100Ω	1kΩ
Proximity detector (NAMUR)	1.2mA	2.1mA
Open collector	2kΩ	10kΩ
Voltage (low)	1V	3V 30V max
Voltage (high)	3V	10V 30V max

Display

Type	Liquid crystal
Primary	9mm high
Secondary	6mm high
Format	hh:mm:ss ; hh:mm ; mm:ss or s

Remote Timer reset & Clock sync. Contact closure with resistance less than 10kΩ.

Timer

Maximum duration	99h 59m and 59s or equivalent in any display format.
Maximum delay between cycles.	99h 59m and 59s or equivalent in any display format.
Grand total run-time.	5 x 10^6 hours maximum

Clock

Timekeeping accuracy	Less than ±0.43s error per day over operating temperature range.

Certification

Note: Ex ic in codes refers to instrument push button contacts which are nonincendive.

Europe ATEX

Code	Group II Category 3G Ex nA ic IIC T5 Gc Group II Category 3D Ex ic tc IIIC T80°C Dc -40°C ≤ Ta ≤ +60°C
Cert. No.	ITS16ATEX48409X

International IECEx

Code	Ex nA ic IIC T5 Gc Ex ic tc IIIC T°80°C Dc -40°C ≤ Ta ≤ +60°C
Cert. No.	IECEx ITS 16.0005X

ETL & cETL

Code	Class I Zone 2 AEx nA ic IIC T5 Gc (USA) Zone 22 AEx ic tc IIIC T80°C Dc (USA) Ex nA ic IIC T5 Gc (Canada) Ex n IIC T5 Gc (Canada) Ex ic tc IIIC T80°C Dc (Canada) -40°C ≤ Ta ≤ 60°C
ETL Control No.	4008610

Environmental

Operating temp	-40 to +60°C display -20 to +60°C
Storage temp	-40 to +85°C
Humidity	to 95% at 40°C non condensing
Vibration	Report available
Enclosure	
Ingress	Front IP66, rear IP20
Material	BS 3146-2:1977 ANC4B (316)
EMC	Complies with 2014/30/EU

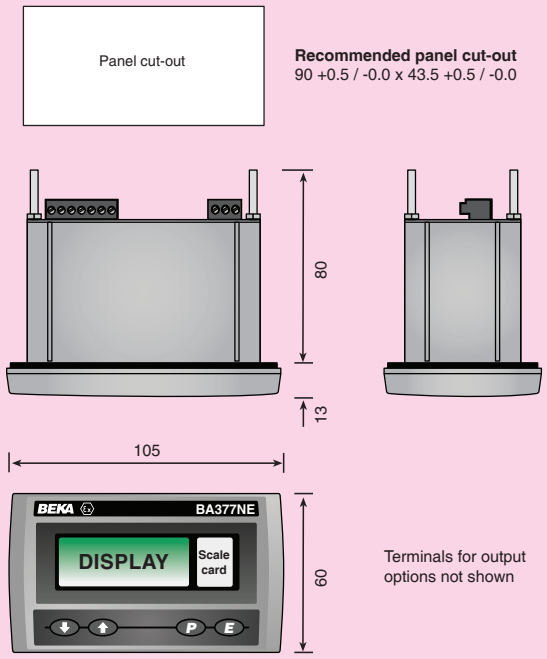
Mechanical

Terminals	Screw clamp for 0.5 to 1.5mm² cable, removable terminal blocks.
Weight	0.85kg

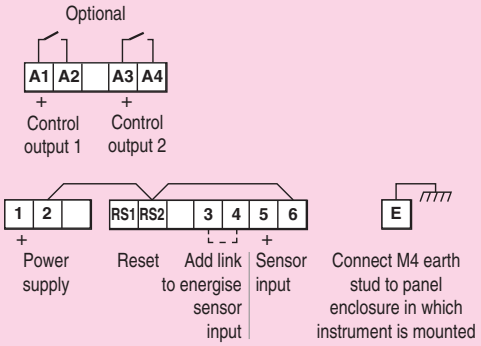
Accessories

Backlight	Green LED internally powered
Control outputs	Two outputs each of which may be independently configured as a NO or NC output.
Outputs	Isolated single pole, voltage free solid state switch.
Ron	5Ω + 0.7V max
Roff	IMΩ min

DIMENSIONS (mm)



TERMINAL CONNECTIONS



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

 # See accessory datasheet for details

HOW TO ORDER

	Please specify
Model number	BA377NE
Function	Timer or Clock
Input	Type *
Accessories	**Please specify if required**
Display backlight	Backlight
Control outputs	Control outputs
Scale card	Legend required *No charge if ordered with instrument.*
Tag	Legend required
Rear cover and sealing kit	BA495

* *BA377NE can be supplied configured as required for no additional charge, see instruction manual, which can be downloaded from www.beka.co.uk/ba377ne for details. If configuration information is not supplied, instrument will be configured as a Timer with an open collector input. Can easily be reconfigured on-site.*