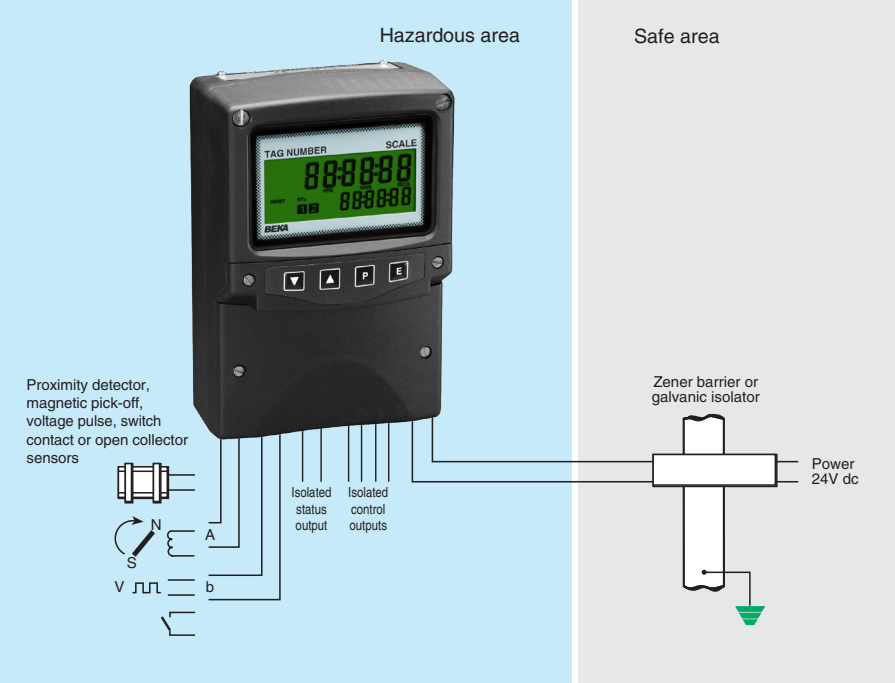

BA374E

two input timer or clock

Intrinsically safe for use in all gas hazardous areas

- **Configurable input: magnetic pick-off, switch contact, proximity detector, open collector or voltage pulse.**
- **Separate displays with backlight**
- **Intrinsically safe**
- **IP66 GRP enclosure with separate terminal compartment**
- **Isolated dual controls, and status outputs.**
- **3 year guarantee**

www.beka.co.uk/ba374e

The BA374E is a two input, field mounting, intrinsically safe instrument that can be configured as a Timer or as a Clock. As a Timer it is able to measure the elapsed time between external events, or control external events via the status and control outputs. When configured as a Clock the instrument can display time in a variety of formats. The BA374E is controlled by two inputs which may be independently configured on-site to operate with a magnetic pick-off, switch contact, proximity detector or a voltage output sensor. International intrinsic safety certification permits worldwide installation.

Configuration may be performed on-site via the front panel push buttons using the easy to use and well documented menus. The Timer employs a state and event structure to simplify configuration.

International intrinsic safety certification allows the BA374E timer or clock to be installed in gas hazardous areas worldwide. When configured to operate with a sensor having a voltage or magnetic pick-off output, the input terminals comply with the requirements for *simple apparatus* reducing system design and documentation.

Applications as a Timer include displaying the time interval between two events detected by one or two hazardous area sensors. External events can also be controlled using the isolated open collector status and the dual isolated control outputs. The Timer is able to perform common industrial timing application, such as those associated with dosing or sampling requiring an intrinsically safe solenoid valve to be regularly opened for a defined time. A powerful cycle function is included which can be configured to repeat the timing function up to 99 times or continuously, with up to 100 hours delay between timed periods.

As a Clock the BA374E can display local time in various twelve or twenty four hour formats and the display may be synchronised to a pre-set time via the external reset input. The control outputs may be configured to switch loads on and off at pre-set times twice during each twenty four hour period.

The large display has high contrast and a wide viewing angle. Green backlighting enhances daylight viewing enabling the timer or clock to be read at night or when installed in a poorly illuminated area.

IP66 protection is provided by the robust GRP enclosure which has stainless steel fittings, silicone gaskets and a 4mm thick armoured glass window. Ingress and impact protection have been independently assessed by Intertek. A separate terminal compartment allows connection of field wiring without exposing the instrument's electronics.

The display escutcheon which shows the timer or clocks units of measurement and tag information can be changed on-site. New instruments are fitted with a printed escutcheon showing customer specified marking. If this information is not supplied a blank escutcheon is fitted which can easily be marked on-site. An optional laser engraved stainless steel legend plate secured to the front of the instrument is also available.

The compact BA374G has the same functions and large display as the BA374E without a separate terminal compartment.

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website: www.beka.co.uk

SPECIFICATION

Power supply

Voltage	10 to 28V from a Zener barrier or galvanic isolator
Current	32mA

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 28V max
Voltage pulse (high)	3V	10V 28V max

Display

Type	Liquid crystal
Backlight	Green LED internally powered
Primary	18mm high
Secondary	12mm high
Format	hh:mm:ss ; hh:mm ; mm:ss or s

Remote Timer reset or 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 10^6h maximum

Clock

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

Status output — Isolated, voltage free open collector, certified as a separate intrinsically safe circuit complying with the requirements for *simple apparatus*.

Ron	51Ω + 3V max
Roff	1MΩ min
I max	10mA

Dual 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

Intrinsic safety

International IECEx

Code	Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C
Cert. No.	IECEx ITS 16.0004X

Europe ATEX and UKEX

Code	Group II Category 1G Ex ia IIC T5 Ga -40 ≤ Ta ≤ 70°C
Cert. No.s	ITS16ATEX28408X & ITS21UKEX0098X

ETL & cETL

Code	Class I Div 1 Gp A, B, C, D T5 Class II Div 1 Gp E, F, G Class III	] USA & Canada
	Class I Zone 0 AEx ia IIC T5 Ga Zone 20 AEx ia IIIC T80°C Da	] USA
	Ex ia IIC T5 Ga -40°C ≤ Ta ≤ 70°C	] Canada
ETL Control No.	4008610	

China CCC — As IECEx - see certificate

India CCOE/PESO — As ATEX - see certificate

Nonincendive USA & Canada ETL & cETL

Code	Class I Div 2 Gp A, B, C & D T5 Class II Div 2 Gp F, G. Class III Div 2 -40 ≤ Ta ≤ 70°C
ETL Control No.	4008610

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	GRP
Ingress	IP66
EMC	Complies with EU and UK Directives

Mechanical

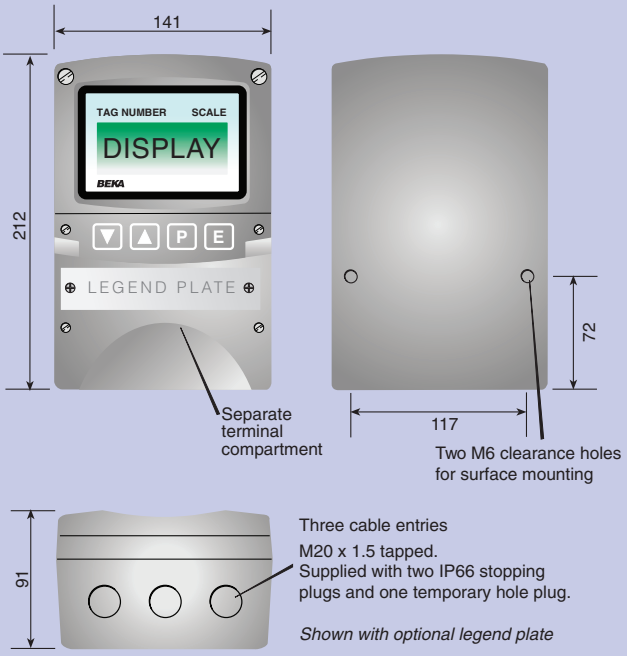
Terminals	Screw clamp for 0.5 to 1.5mm²
Weight	1.7kg

Accessories

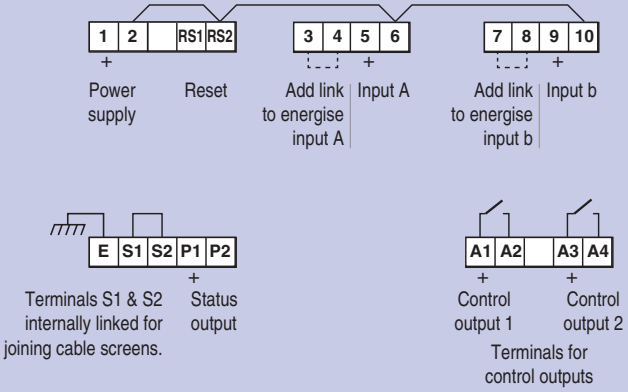
Escutcheon	Blank card fitted to all instruments. Can be supplied printed with specified units of measurement and tag information for no additional charge at time of purchase. #
Legend plate	316 stainless steel plate secured to the front of the instrument, laser engraved with tag number or application information. #
Pipe mounting kit	BA393 #

See accessory datasheet for details

DIMENSIONS (mm)



TERMINAL CONNECTIONS



HOW TO ORDER

	Please specify for each input
Model number	BA374E
Function	Timer or Clock
Input	Type *

Accessories	**Please specify if required**
Escutcheon marking	
Units	Legend required
Tag	Legend required *No charge if ordered with timer or clock.*
Stainless legend plate	Legend required
Pipe mounting kit	BA393

** BA374E can be supplied configured as required for no additional charge, see instruction manual, which can be downloaded from www.beka.co.uk/ba374e for details. If configuration information is not supplied, instrument will be configured as a Timer with inputs configured for connection to open collector sensors. Can easily be reconfigured on-site.*