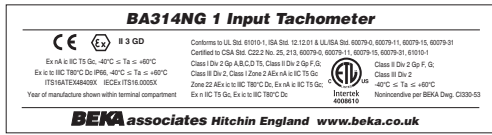


1. DESCRIPTION

The BA314NG is a field mounting Ex nA and Ex tc certified Tachometer which will function with a wide variety of sensors. The instrument displays speed plus the run-time of the machinery being monitored.

This abbreviated instruction sheet is intended to assist with installation, a comprehensive instruction manual describing safety certification, system design and configuration may be downloaded from the BEKA website or may be requested from the BEKA sales office.

The BA314NG Tachometer has IECEX, ATEX, ETL and cETL certification permitting installation in Zone 2 and Zone 22 without the need for Zener barriers or galvanic isolators. The certification information label, which is located on the top of the instrument assembly, shows the certification numbers and codes. Other certifications may be shown. Copies of certificates may be downloaded from the BEKA website.



Typical certification information label

2. INSTALLATION

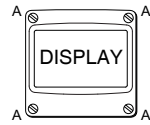
The BA314NG Tachometer has a robust IP66 glass reinforced polyester (GRP) carbon loaded enclosure incorporating an armoured glass window and stainless steel fittings. It is suitable for exterior surface mounting in most industrial environments, or pipe mounting using an accessory kit.

The BA314NG should be powered from a limited energy circuit with output parameters in normal operation equal to, or less than the instrument's input parameters.

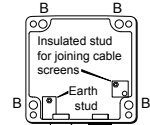
If the enclosure is not bolted to an earthed post or structure, the earth terminal on the cable entry bonding plate, which may be assembled on the inside or outside of the enclosure, should be connected to local earthed metalwork or to the plant's potential equalising conductor.

Terminals A1, A2, A3 and A4 are only fitted when the Tachometer includes optional alarms. Similarly terminals C1, C2, C3 and C4 are only fitted when the instrument has an optional 4/20mA output. See full manual for details.

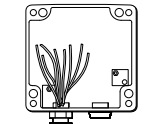
See the full instruction manual for installation information requirements for safe use in combustible dust atmospheres.



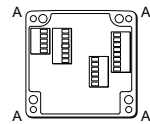
Step A
Unscrew the four captive 'A' screws and separate the indicator assembly and the back-box.



Step B
Secure the enclosure back-box to a flat surface with M6 screws through the four 'B' holes. Alternatively use a pipe mounting kit.



Step C
Remove the temporary hole plug and install an appropriate IP rated Ex e cable gland or conduit fitting. Feed the field wiring through the cable entry.



Step D
Terminate field wiring on the instrument assembly. Replace the assembly on the enclosure back-box and tighten the four 'A' screws.

Fig 1 BA314NG installation procedure

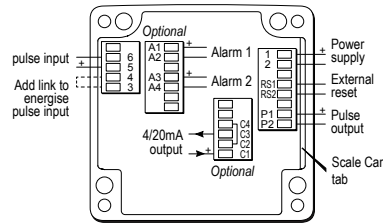
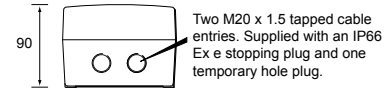
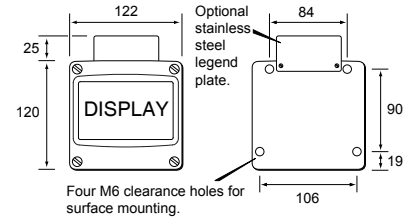


Fig 2 Dimensions and terminal connections

EMC

For specified immunity all wiring should be in screened twisted pairs with screens earthed at one point within the safe area.

Scale card

The instrument's units of measurement and tag information are shown above the display on a slide-in scale card. New instruments are fitted with a scale card showing the information specified when the instrument was ordered, if this was not provided a blank scale card will be fitted which can easily be marked on-site. Custom printed scale cards are available from BEKA associates.

To remove the scale card carefully pull the tab perpendicularly away from the instrument assembly. See Fig 2 for the location of the scale card tab.

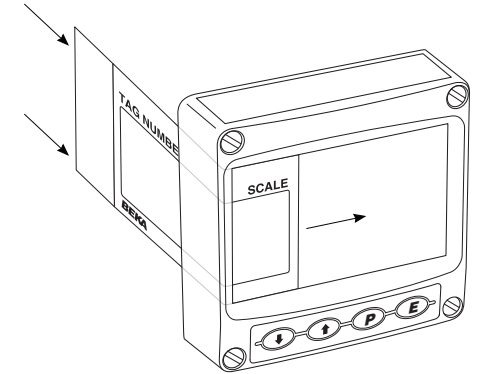


Fig 4 Inserting scale card into instrument assembly

To replace the scale card carefully insert it into the slot shown in Fig 2. Force should be applied evenly to both sides of the scale card to prevent it twisting. The card should be inserted until about 2mm of the transparent tab remains protruding.

3. OPERATION

The BA314NG is controlled and configured via four front panel push buttons. In the display mode i.e. when the instrument is displaying speed the push button functions are:

- [Reset] + [Up] Resets run-time display to zero. This is a configurable function.
- [E] + [Up] Run-time grand total. If buttons are pressed for ten seconds or longer grand total run-time is reset to zero. This is a configurable function.
- [P] + [Down] Shows in succession, firmware version number, instrument function ϵRCH_0 and any output accessories that are fitted:
 - R Dual alarm outputs
 - P Pulse output (Always fitted)
 - C 4/20mA output
- [P] + [Up] Provides direct access to the optional alarm setpoints when the Tachometer is fitted with optional alarms and the ϵRCH_0 setpoints function has been enabled.
- [P] + [E] Access to configuration menu

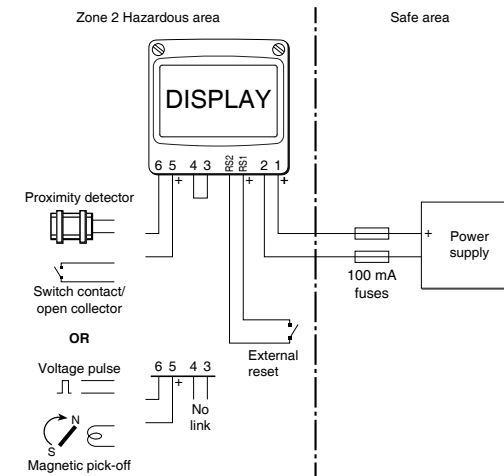
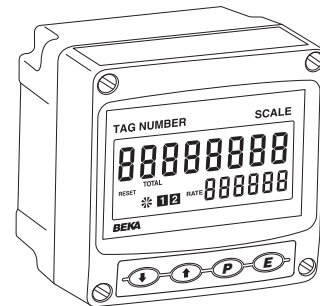
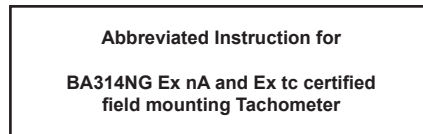


Fig 3 Typical speed measurement loop

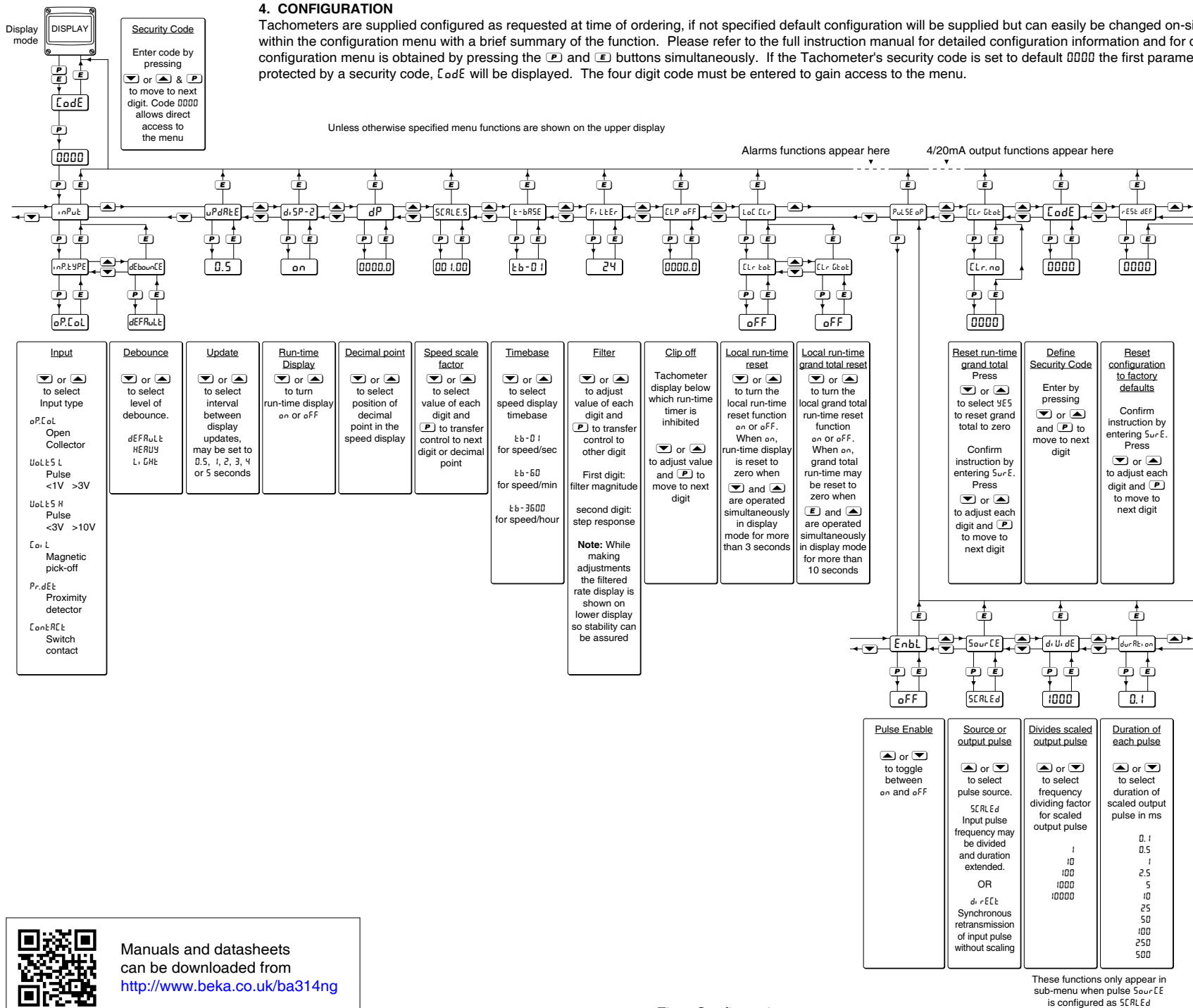
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The BA314NG is CE marked to show compliance with the ATEX Directive 2014/34/EU and the EMC Directive 2014/30/EU.

4. CONFIGURATION

Tachometers are supplied configured as requested at time of ordering, if not specified default configuration will be supplied but can easily be changed on-site. Fig 5 shows the location of each function within the configuration menu with a brief summary of the function. Please refer to the full instruction manual for detailed configuration information and for description of optional outputs. Access to the configuration menu is obtained by pressing the **[P]** and **[E]** buttons simultaneously. If the Tachometer's security code is set to default 0000 the first parameter, **INPUL** will be displayed. If the instrument is protected by a security code, **CoDE** will be displayed. The four digit code must be entered to gain access to the menu.



These functions only appear in sub-menu when pulse Sour.CE is configured as SCRL.Ed



Manuals and datasheets can be downloaded from <http://www.beka.co.uk/ba314ng>

Fig 5 Configuration menu