SECO

WIRELESS ANNUNCIATOR

(ZIGBEE BASED)

SAHYADRI (SECO) make **Wireless Annunciator** is designed with Microcontroller based advance technology and field proven model for all types of fields and environmental conditions. The purpose of this product is to give window Annunciation required at specific place where the inputs or protective relays are at distance with the use of the radio frequency signal. This product can be used in the Power generation projects/ Power Transmission projects/ process control or Industrial applications where we can't run the wires to get the Annunciation for devices that may be in the hazardous environment and it also saves the copper wires.

This product is designed with **ZIGBEE** protocol. **ZIGBEE** is the name of a specification for a suite of high-level communication protocols using small, low-power, low data rate digital radios based on the IEEE 802.15.4 standard for wireless personal area networks (WPANs). For example - wireless headphones connecting with cell phones via short-range radio. The technology is intended to be simpler and cheaper than other WPANs such as Bluetooth. ZigBee is targeted at radio-frequency (RF) applications which require a low data rate, long battery life and secure networking. ZigBee is a low data rate, two-way standard for home automation, Industrial automation and data networks. The standard specification is up to 254 nodes including one master, managed from a single remote control. The ZigBee standard uses small low-power devices to connect together and form a wireless control web. A ZigBee network is capable of supporting up to 254 client nodes plus one full functional device (master). The standard supports 2.4 GHz (worldwide), 868 MHz (Europe) and 915 MHz (America) unlicensed radio bands with range up to 100 meters in urban range and 1000 meters in line of site range.

Features

➢ Data rate of 250 kbps with 10-100-meter range in urban
➢ Two addressing modes: 16-bit short and 64-bit IEEE addressing
➢ Support for critical latency devices such as joysticks
➢ CSMA-CA channel access
➢ Automatic network establishment by the coordinator
➢ Fully handshakes protocol for transfer reliability
➢ Power management to ensure low power consumption
➢ 16 channels in 2.4GHz ISM band
➢ Low duty cycle - Provides long battery life
➢ Low latency
➢ Support for multiple network topologies: point-to-point, star and mesh
➢ Direct Sequence Spread Spectrum (DSSS)
➢ 128-bit AES encryption **–** Provides secure connection between devices

RF communication advantages

➢ True Plug and communicate capability

➢ High Data Reliability through 128-bit AES encryption

➢ Unique node identifiers

➢ Can handle large network nodes

➢ Secure Transmission and channel assessment

➢ Link quality indication

➢ Ability to operate in license free bands (no recurring cost to the user)

➢ Global standard

➢ Low latency

➢ Superior power management with packet-based transmission

➢ Support multiple network topologies. (star, mesh, point to multipoint etc.)
   Ease of use for both new and legacy systems

➢ Range extension capability by the use of routers or Repeaters

➢ Ability to operate in noisy urban environments

➢ No need for cables, cable tray, laying time, man power, traceability & trouble shooting etc.

Technical specification – Window Master unit

➢ **Enclosure**: ABS Plastic

➢ **Mounting**: Front Facia Flush mounting type with suitable mounting clamps

➢ **Antenna mounting**: From front side of the unit with suitable Mounting clamps

➢ **Antenna Power**: 7 dB

➢ **Working status**: Power-on Indication with Green LED Mounting clamp as watch dog timer

➢ **Communication status**: Communication link status is by glow of
   Red LED & Bar graph LED display for RF signal Level

➢ **Unit Panel cutout size**: 147(H) x 461(W) x 120(D) mm (for 24 windows)

➢ **Output Terminals**: Brass Terminal with SS screws suitable for 2 No. U type LUGS

➢ **Terminal Block**: ABS plastic with Suitable separator and Shroud

➢ **Output contacts rating**: 10A at 250V AC

➢ **Window size**: 34 x 74 mm or 34 x 37 mm

➢ **Window colour**: Site selectable RED / Yellow colour

➢ **Standby function**: completely functions with 230V AC supply

➢ **DC fail Indication**: Yes

Technical specification – slave Unit (PR input unit)

➢ **Input slave Unit Box**: ABS plastic box mounted on plate
➢ **Enclosure protection**: IP 55 as per IS 13947
➢ **Terminal block voltage grade**: 750/1000V
➢ **Antenna**: 1 no. 5 dB mounted as per drawing with suitable mounting clamp
➢ **Power supply**: 75 t0 275V DC/AC
➢ **Standby power supply**: 230V AC

Technical specification – Repeater Unit

➢ **Box**: 96 x 96 mm box with mounting bracket
➢ **Antenna**: 5 dB mounted as per drawing with suitable mounting clamp
➢ **Power supply**: 75 to 275V DC/AC
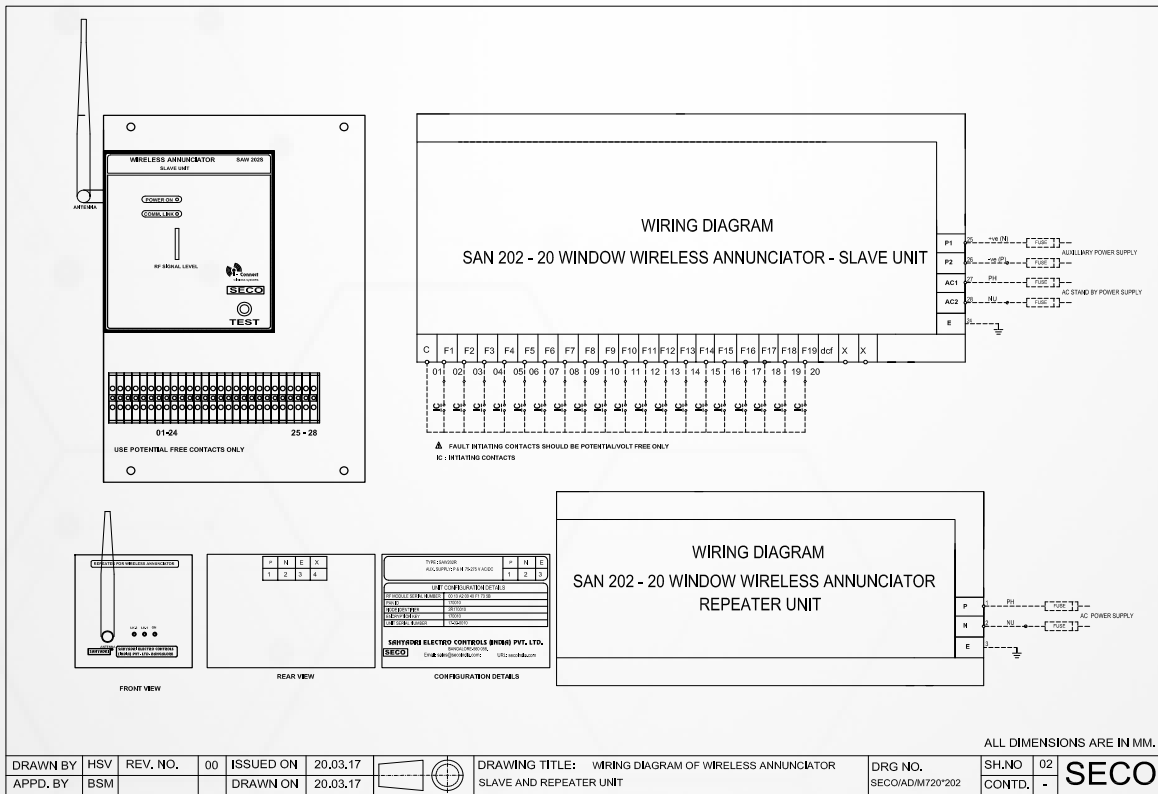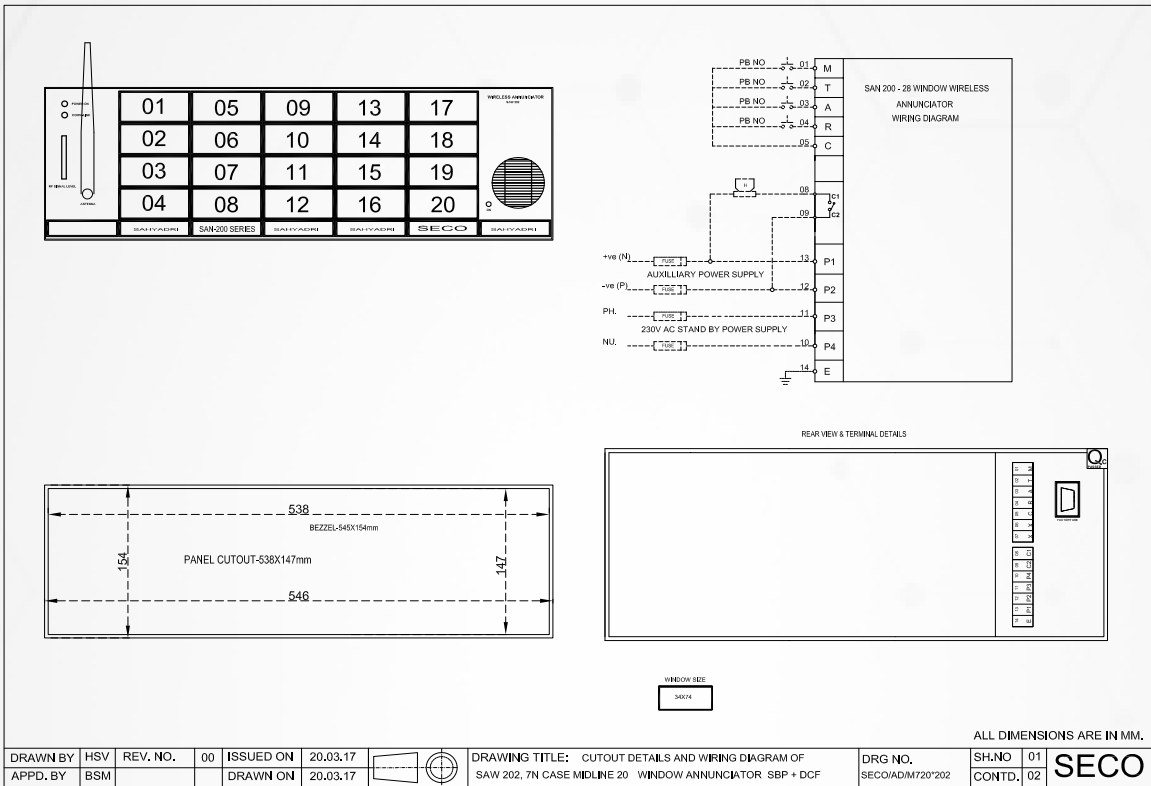
Product Description

The product consists of a) Master unit or Window unit b) Slave unit or Input device and c) Repeater unit. This type of Annunciation system takes the inputs from protective relays or any device (potential free contacts) & gives the window Annunciation at distance. The slave Annunciator unit takes the inputs from fields, the master unit gives the output in the form of windows glowing along with buzzer sound & the Repeater unit will increase the distance with better signal strength & Communication link LED is provided to indicate group of Master and Slave units are communicating. RF Signal level indication is also provided on both Master and Slave units to know the signal strength. The function of repeater unit is to get the data from slave unit and to send it to Master unit.
The proper security is provided with Encryption, Node identifier, Serial no. of the unit for exact one to one communication without any miscommunication. And also, use of 2.4 G hz will not affect any other electronic equipments.

Sequence of operation – Working Mode

MANUAL/ NORMAL MODE:-

CONDITION	MANUAL ACTION	WINDOW STATUS	ALARM CONTACT STATUS
NORMAL		OFF	OPEN
ABNORMAL		FLASHING	CLOSED
	ACCEPT	STEADY ON	OPEN
ABNORMAL	RESET	FLASHING	CLOSED
NORMAL BEFORE RESET	RESET	OFF	OPEN
NORMAL	TEST	FLASHING	CLOSED

WIRING AND PANEL CUTOUT DRAWING

| DRAWN BY | HSV | REV. NO. | 00 | ISSUED ON | 20.03.17 | DRAWING TITLE: CUTOUT DETAILS AND WIRING DIAGRAM OF SAW 202, 7N CASE MIDLINE 20 WINDOW ANNUNCIATOR SBP + DCF | DRG NO. SECO/AD/M720*202 | SH.NO | 01 | SECO |
| APPD. BY | BSM | | | DRAWN ON | 20.03.17 | | | CONTD. | 02 | |

ALL DIMENSIONS ARE IN MM.

| DRAWN BY | HSV | REV. NO. | 00 | ISSUED ON | 20.03.17 | DRAWING TITLE: WIRING DIAGRAM OF WIRELESS ANNUNCIATOR SLAVE AND REPEATER UNIT | DRG NO. SECO/AD/M720*202 | SH.NO | 02 | SECO |
| APPD. BY | BSM | | | DRAWN ON | 20.03.17 | | | CONTD. | - | |

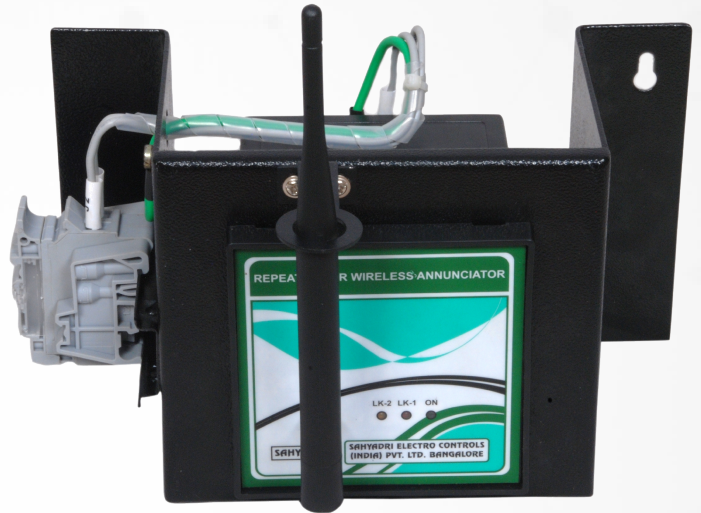ALL DIMENSIONS ARE IN MM.

SLAVE (INPUT) UNIT

REPEATER UNIT

SAHYADRI®

ISO 9001:2015 Certified

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