

## How to determine if the Device Alarm Nurse Call System is *Normally Open* or *Normally Closed* (in the non-alarm state)

If an alarm occurs when there is no jack plugged into the patient site nurse call jack, the system is a *normally closed* system.

### Support information

Medical devices with alarms use different wiring (pins) to connect 'normally open' or 'normally closed' to the nurse call system (they are not programmable for normally open or normally closed). The bedside device is not a variable in deciding if the system is normally open or closed.

**Normally open** means that the two wires leading from the patient site to the central station have no connection between them when the system is monitoring for an alarm. **When a device is connected** to the wall jack, the two wires are shorted together in the device only when an alarm occurs and the nurse call central station then exhibits an alarm. *This style system does not protect against a broken or removed wire (cable) anywhere in the loop between the device and the central station.*

**Normally closed** means that the two wires leading from the patient site to the central station have a connection (short) between them at the patient site end. When there is no device connected to the wall jack, that jack must be shorted. This can be accomplished in two manners;

1. Insert a shorting plug into the jack from which the cable (to the device) is removed.
2. The jack in the wall must automatically short the wires internally when the cable is removed.

**When a device is connected** to the wall jack, the normally closed cable opens that connection and now extends the connection to inside the device and thus also monitors if the cable is in proper operating condition.

**When an alarm occurs**, the two wires are un-shortened (unclosed) and the nurse call central station exhibits an alarm. *This style system does alert against a broken or removed wire anywhere in the loop between the device and the central station. However when the cable is intentionally unplugged at the patient site, a shorting method must occur to eliminate a false alarm (1 & 2 see above).*

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