

# flex 7 Healthcare Applications Data Sheet



Port Talbot Hospital, Neath



Aldershot Centre for Health



Royal Edinburgh Infirmary

## Hospital and healthcare buildings

There is an unprecedented level of construction and refurbishment in the healthcare sector today. New hospitals and health centres, extensions to existing buildings and ongoing refurbishment programmes are taking place in both the NHS and the private sector.

Healthcare buildings present particular challenges with regard to lighting installation. Areas such as operating theatres and intensive therapy areas have particular requirements for EMC shielding. Lights often need different daytime and night time operation or dimming control and essential and non-essential circuits are frequently used throughout the installation. Central testing and monitoring of emergency lighting can also be specified.

Flex Connectors' Flex 7 lighting connection and control products are ideally suited to many areas within healthcare buildings and include a range of connection units configured to handle both essential and non-essential circuits. A selection of completed healthcare projects is available at [www.flexconnectors.co.uk](http://www.flexconnectors.co.uk).

### Essential and non-essential circuit connection units

In response to requests from both M & E consultants and electrical contractors, Flex Connectors have adapted their highly successful Flex 7 lighting connection units for use on dual essential and non-essential circuits.

- Ideal in most instances, whenever the essential and non-essential circuits have been scheduled on the same phase.
- Can be controlled by hard wired switches, plug-in mains switch drops or Flex 7 lighting controls.
- Can incorporate connections and plug-in controls for dimming fluorescent lighting.
- Alternatively can include connections for self testing and monitoring emergency test equipment.
- Allows automatic load shedding in the event of a power failure, without two completely separate lighting installations.

### fc12/7ENE

Whilst any Flex 7 7-pole connection unit of four outlets or more can be converted to ENE type construction, the 12-outlet unit offers the ideal ratio of six sockets for the essential circuit and six for the non-essential circuit. If plug-in switch or sensor control is required, one socket on each half of the unit must be reserved for this.

If PIR sensors are needed, the unique design of the Flex 7 sensor range means that one head can be shared by two control packs to switch both the essential and non-essential circuits. If daylight

linked or manual dimming is required, this can also be connected and controlled using the same connection unit and similar, plug-in controls.

Alternatively, if dimming is not required, the same connection unit can be used to accommodate connections to a centrally controlled and monitored emergency lighting test system.

## **fc4/7ENE**

In corridors and other situations where long chains of lights are required, a connection unit combined with the Flex 7 double extender system gives great flexibility. In this connection unit, two sockets are used for the essential circuit and two for the non-essential circuit.

A plug-in switch or sensor control uses one socket on each half of the unit and a chain of double extender leads initiates from the other. The length of the double extender leads is calculated to match the spacing of either the essential or the non-essential luminaires.

The same choice of dimming or a centrally controlled and monitored emergency lighting test system is available with this combination, as with the 12-outlet connection unit.

If PIR sensors or ELV switching are selected, two identical control packs are required. These plug into the designated zones of each connection unit to control the essential and non-essential supplies

## **On / Off control**

### **fnc2000**

This control pack will switch On when occupancy is detected and will switch Off at time out if fitted with a PIR sensor head. It will turn Off when there is sufficient daylight if a daylight PIR head is fitted. It can also be used as an ELV switch, using a standard, latching switch. Combined with a timer unit, this pack can be held On for part of the day and revert to PIR control at other times. Daylight switching can be enabled or disabled when held On.

### **fnc2000/AB**

This control pack will allow manual switching of the lights. It can be set up as an occupancy sensor, an absence sensor or an ELV switch. A three position retractive switch is used to switch the lights On or Off. If a sensor head is fitted, it will switch Off at time out.

## **Dimming control**

### **fnc4000\***

This control pack will switch On when occupancy is detected and will switch Off at time out. Used in combination with a daylight PIR head, it will daylight-link lighting with dimmable ballasts. Combined with a timer unit, this pack can be held On for part of the day and revert to PIR control at other times. Daylight linking can be enabled or disabled when held On.

### **fnc4000\*/AB**

This control pack will allow manual switching and dimming of the lights and, used in combination with a daylight PIR head, daylight linked dimming. It can be set up as an occupancy sensor, an absence sensor or an ELV switch. A three position retractive switch is used to switch the lights On or Off and regulate them up or down. If a sensor head is fitted, it will switch Off at time out.

All of these packs can be ordered with an additional relay to perform an emergency test – add /E suffix to the product code. Otherwise a normal mains emergency test can be performed.

\*Insert A for analogue, D for DSI control or X for DALI control options

## Sensor heads

In each case, one sensor head is required for each pair of control packs

### fnh200

Should be used if daylight linking or switching is not required. This master sensor head provides PIR coverage for a room 7.4m x 5.6m. Time out can be remotely set using the **frc/set** remote control.

### fnh400

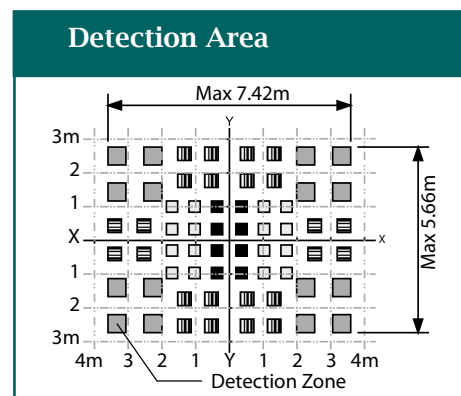
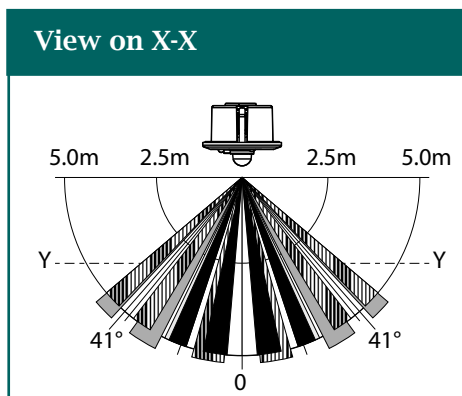
Should be used if daylight linking or switching is required. This master sensor head provides PIR coverage for a room 7.4m x 5.6m. Time out, light level, occupancy/absence status and a choice of either daylight linking to a minimum level or to Off can be remotely set using the **frc/set** remote control.

### fsy/lal

This 'Y' splitter is required to allow two control packs to share a master head.

### fnh/slave

If a larger area of coverage is required, up to five of these slave heads can be added to the master head. Each provides PIR coverage of 7.4m x 5.6m. Total coverage = 250m<sup>2</sup>.



### Mounting

32mm dia	Hole required for flush fixing sensor heads.
Kit <b>fsh/sm</b>	For surface mounting sensor heads.

Leads are required to link all sensor heads, for the switch drop for each control pack and to link the two control packs together:

- **fsl\_** leads are available from 5 - 50m long to link the sensor heads
- **fsw\_** leads are available from 5 - 50m long as switch drops
- **fnl300** is required to link the control packs.

If corridor hold or linking to a timer or BMS is required, please contact Flex Connectors.

### Ratings

220 - 250 V	ac 50Hz
6A	Max switching capacity for each row of lights but 10A total per control pack and 16A per <b>fcb_</b> unit.
3A	Max for compact fluorescent, low energy and transformer loads.
20	Maximum dimming fittings per control pack.

## Applications - Hospitals and healthcare buildings

## Areas not requiring essential/non essential control

Many rooms and areas generally only require simple, single circuit sensor control. Most do not require daylight linking or dimming. For standard, non-dimming ballasts, the Flex 7 range of Value connection units is the most economic solution. These units are available as single circuit (**fcv**) and as two configurable circuits (**fcv\_m**).

If daylight linking or dimming is required, the 7-pole (**fcv\_7**) is the appropriate unit. Connection units can be supplied with between 2 and 20 outlets - **m** units are only available larger than 12 outlets to special order.

In corridors and in rooms where lighting is switched in long rows, Flex Connectors' unique double extender connection system is sometimes more appropriate than connection units. Special double outlets, pre-wired with appropriate plugs and leads, allow chains of sockets to be installed at suitable pitches for the luminaires.

## Recommendations for control

### Absence control or occupancy control with a retractive switch

- Reception areas
- Waiting rooms
- Restrooms or locker rooms with windows
- Staff bedrooms
- Consulting rooms
- Workshops

### Occupancy control

- WCs, shower rooms & showers
- Lecture theatres
- Workshops
- Cafeterias
- Nurse stations
- Store rooms
- Circulation areas
- Plant rooms

## Final connection to luminaires

A full selection of pre-wired plug and lead sets and single extender leads are available from Flex Connectors. 2, 3 and 5m lengths are standard, although other lengths can be supplied to special order. Cable is available in 0.75mm<sup>2</sup>, 1.00mm<sup>2</sup> and 1.50mm<sup>2</sup>. We recommend that LS0H insulation is used in medical establishments. 3-core to 7-core leads are available.

## Interconnection system

The connection units detailed above are all intended for wiring in situ. Flex Connectors also supplies all these units as part of our interconnection system. This system reduces the time spent on site by minimising connections and by being fully factory built and tested.

## Project service

We offer a full project service for both our connection and interconnection systems. Detailed quotations and product schedules are prepared from your lighting drawings, listing all equipment required. Once ordered, equipment is prepared to the project schedule and can be individually manufactured, configured and labelled, packed circuit by circuit or room by room and supplied to suit your site schedule. Many project specific, non-standard, configurations and adaptations of equipment are possible. Please contact us for details.

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