CHQ MODULES INSTALLATION INSTRUCTIONS

Products Covered: CHQ-DSC (Dual Sounder Controller), CHQ-DRC (Dual Relay Controller) & CHQ-MRC (Mains Relay Controller)



Introduction

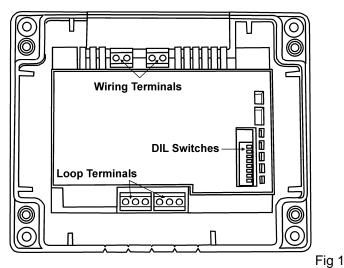
The CHQ "Smart-Fix" Range of Modules consists of the following models:

| CHQ-DIM(SCI) CHQ-DIM/M(SCI) CHQ-DIM/DIN(SCI) | Dual Input Module | CHQ-DZM(SCI) CHQ-DZM/DIN(SCI) | Dual Zone Monitor |
|--|-------------------------|--|------------------------|
| CHQ-DRC(SCI) CHQ-DRC/M(SCI) CHQ-DRC/DIN(SCI) | Dual Relay Controller | CHQ-MRC(SCI) CHQ-MRC/DIN(SCI) | Mains Relay Controller |
| CHQ-DSC(SCI) CHQ-DSC/M(SCI) CHQ-DSC/DIN(SCI) | Dual Sounder Controller | CHQ-SZM(SCI) CHQ-SZM/M(SCI) CHQ-SZM/DIN(SCI) | Single Zone Monitor |

Note: (SCI) indicates all modules feature an integral short-circuit isolator. DIN indicates Module housing is designed to fit standard "Top Hat" DIN Rail.

Components

Standard "Smart-Fix" Modules are supplied as two individual components (see Fig 1 & 2). DIN versions are supplied as one unit (see Fig 3).



"Smart-Fix" CHQ Module (Back Plate inc PCB Component)

(Note: configuration of Wiring Terminal blocks differs between models)

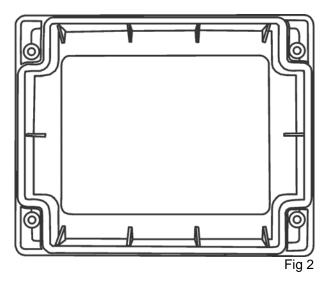
Setting the Loop Address

- The analogue address of the Module is set using the first 7 switches of the 8-bit DIL switch, which in the case of the Standard CHQ is located through the cut-out section on the top of the PCB cover. On the DIN version, this switch is located on the edge of the PCB behind the clear door (see Fig 3).
- □ The switches are numbered 1 to 8 (left to right):

| CHQ MODULE | SWITCH UP | ON | |
|------------|-------------|-----|--|
| | SWITCH DOWN | OFF | |
| DIN MODULE | SWITCH UP | OFF | |
| | SWITCH DOWN | ON | |

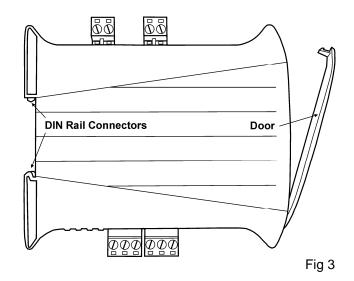
- □ The switches should be set using a small-tipped screwdriver or similar.
- Refer to the Address Chart (Fig 7) on page 4 for a quick reference on addresses.

(continued on page 4)



CHQ-LID Transparent Module Lid

(Supplied with four screws and acrylic retaining washers)



DIN Rail Mountable CHQ

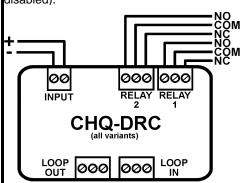
CHQ-DSC DUAL SOUNDER CONTROLLER provides two independent sounder outputs with open and short circuit monitoring (which can be disabled). The sounder outputs can be separately driven, continuously or pulsed, under full synchronisation of the fire alarm panel with other sounders on the same loop. An input is provided with short and open circuit monitoring (which can be disabled). Setting Sounder & Input Monitoring 8-Way DIL Switch SWITCH 8 UP I/P Monitoring Disabled 00 00 00 00 00 CHQ MODULE SWITCH 8 DOWN I/P Monitoring Enabled 24V INPUT SNDR SNDR 24V SWITCH 8 UP I/P Monitoring Enabled ŌŪŦ IN DIN MODULE SWITCH 8 DOWN I/P Monitoring Disabled CHQ-DSC (all variants) 2-Way DIL Switch LOOP SWITCH 1 UP SNDR O/P 1 Monitoring Disabled LOOP 000 000 OUT SWITCH 1 DOWN SNDR O/P 1 Monitoring Enabled CHQ MODULE SWITCH 2 UP SNDR O/P 2 Monitoring Disabled S SWITCH 2 DOWN SNDR O/P 2 Monitoring Enabled + S SWITCH 1 UP SNDR O/P 1 Monitoring Enabled SWITCH 1 DOWN SNDR O/P 1 Monitoring Disabled DIN MODULE SWITCH 2 UP SNDR O/P 2 Monitoring Enabled LOOP CONNECTIONS Fig 4 SWITCH 2 DOWN SNDR O/P 2 Monitoring Disabled S = Cable Screen (if required) This module requires an auxiliary 24Vd.c. power supply (this can also be = Loop Negative (-ve) monitored) - see Fig 4. + = Loop Positive (+ve) CHQ-DSC(SCI) / CHQ-DSC/M(SCI) / CHQ-DSC/DIN(SCI)* Order codes Transmission method Digital communications using ESP 17 - 41 V dc Operating voltage Quiescent current 290 µA Loop: 22 mA ± 20 % Current consumption whilst polling Current in short-circuit 8 mA Maximum short-circuit current (Loop) 1 A 20-28.8 V dc (24 V dc nominal) External Supply:-Operating voltage Sounder On - 8 mA, Sounder Fault - 6 mA Current consumption (per line) Sounder output current 1 A/line max Sounder line capacitance 0.3 µF/line max. Sounder E.O.L resistor 1 kΩ, ±5%, 2 W Input E.O.L resistor 10 kΩ, ±5%, 0.25 W Input threshold levels ON=470 Ω , short cct< 50 Ω , open cct>100k Ω , L=157 mm x W=127 mm x D=35 mm (CHQ Module plus Lid) CHQ-DSC(SCI) 360 g D=79 mm (CHQ Module plus Lid plus CHQ-BACKBOX) Weiahts & (add 235 g to module weight when using CHQ-BACKBOX) Dimensions: CHQ-DSC/DIN(SCI) 145 g L=119 mm x W=108 mm x D=24 mm CHQ Module & CHQ-BACKBOX White ABS, DIN Module Green ABS Colour and enclosure material *1 Fire alarm control panel compatibility required for these products. See AP0127 for short circuit isolator specifications. Note:- All EOL and operational resistors are supplied with the unit – DO NOT DISCARD IN ERROR! EN54-17 Short Circuit Isolators 0832-CPD-1105 09 CHQ-DRC/(SCI) **EN54-18 Input/Output Modules**

| (F | CHQ-DSC/(SCI) | 0832-CPD-1102 | 09 | EN54-17 Short Circuit Isolators EN54-18 Input/Output Modules |
|------------------------------|------------------|---------------|----|---|
| Protocol specified in TI/006 | CHQ-DRC/DIN(SCI) | 0832-CPD-1107 | 10 | EN54-17 Short Circuit Isolators EN54-18 Input/Output Modules |
| | CHQ-DSC/DIN(SCI) | 0832-CPD-1103 | 10 | EN54-17 Short Circuit Isolators EN54-18 Input/Output Modules |

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CHQ-DRC DUAL RELAY CONTROLLER is a loop powered input/output module with two independent N/O and N/C volt free change over relay outputs which can be driven separately. Used for the control of devices such as dampers or for plant and equipment shutdown. A single input is also provided for local fire and fault monitoring which is fully monitored for open and short circuit (can be disabled).

Fig 5



Setting Fault Monitoring

8-Way DIL Switch

| CHQ MODULE | SWITCH 8 UP | Monitoring Disabled |
|------------|---------------|---------------------|
| | SWITCH 8 DOWN | Monitoring Enabled |
| DIN MODULE | SWITCH 8 UP | Monitoring Enabled |
| | SWITCH 8 DOWN | Monitoring Disabled |

Note:- The state of the relay contacts will be indeterminate until the unit is powered.

(Loop connections as per CHQ-DSC above)

| | doo | | | | | |
|--|--|--|---|--|--|--|
| Order coo | | athod | | -DRC(SCI) / CHQ-DRC/M(SCI) / CHQ-DRC/DIN(SCI)* | | |
| Transmission method | | v | Digital communication using ESP 17 - 41 V dc | | | |
| Operating voltage Loop: Quiescent current Current consumption whilst polling | | | | | | |
| | | | | 300 μA 22 mA ± 20 % | | |
| Current consumption whilst polling | | 22 m 8 mA | | | | |
| | | circuit circuit current (Loop) | 1 A | | | |
| Relay col | | · · · · · · | | dc max, 1 A (resistive load) | | |
| nput E.C | | | | 2, ±5%, 0.25 W | | |
| | | | | $2, \pm 5\%, 0.25$ W 470 Ω, Short cct <50 Ω, Open cct >100K Ω | | |
| Input threshold Weights and | | CHQ-DRC(SCI) | | L=157 mm x W=127 mm x D=35 mm (CHQ Module plus Lid) D=79 mm (CHQ Module plus Lid plus CHQ-BACKBOX) (add 235 g to module weight when using CHQ-BACKBOX) | | |
| Dimensio | ons: | CHQ-DRC/DIN(SCI) | | g L=119mm x W=108mm x D=24mm | | |
| Colour ar | nd enclo | sure material | CHQ | Module & CHQ-BACKBOX White ABS, DIN Module Green ABS | | |
| Fire alar | rm contro | I panel compatibility required for th | nese produc | cts. See AP0127 for short circuit isolator specifications. | | |
| | | | | he unit – DO NOT DISCARD IN ERROR! rered input/output module, with a single mains-rated change-over relay | | |
| he relay | | s will be indeterminate until the | e unit is po | monitored for open and short circuit (can be disabled). Note:- The state of wered. | | |
| | ה ו | + | | -Way DIL Switch | | |
| | | | | SWITCH & LIP Monitoring Disabled | | |
| | 000 | 00 | C | | | |
| | | | - | SWITCH & DOWN Monitoring Enabled | | |
| | RELAY | INPUT | _ | SWITCH & DOWN Monitoring Enabled | | |
| | CH | IQ-MRC all variants) | _ | DIN MODULE SWITCH 8 DOWN Monitoring Enabled SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled | | |
| LO | | IQ-MRC all variants) | Ē | SWITCH & DOWN Monitoring Enabled SWITCH & UP Monitoring Enabled | | |
| LO O (Loop ca | | IQ-MRC all variants) DO 000 LOOP F | ïg 6 | DIN MODULE SWITCH 8 DOWN Monitoring Enabled SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled | | |
| Lo O (Loop cr | | All variants) PO OOO LOOP IN s as per CHQ-DSC above) | ig 6 | SWITCH & DOWN Monitoring Enabled SWITCH & UP Monitoring Enabled | | |
| Lo O (Loop cr | | All variants) PO OOO LOOP IN s as per CHQ-DSC above) | ig 6 | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* communication using ESP | | |
| LO O (Loop co Order coo Transmis | CH COP OC connection des ssion me Operat | All variants) PO OOO LOOP IN s as per CHQ-DSC above) ethod | ig 6 CHQ-MR Digital co | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* communication using ESP | | |
| LO O (Loop co Order coo | CP DOP DUT Connection des ssion me Operat Quieso | Reality variants) Pologo LOOP s as per CHQ-DSC above) Pethod ting voltage cent current | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* ommunication using ESP / dc | | |
| Loop cr (Loop cr Order coo Transmis | Correction des solon me Operation Quieso Curren | PARTICIPATION COOP All variants) PARTICIPATION S as per CHQ-DSC above) Pethod ting voltage cent current t consumption whilst polling | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* ommunication using ESP / dc 20 % max, 2 A (resistive load), 250 V ac max, 5 A (resistive load) | | |
| Loop co (Loop co Order coo Transmis Loop: Relay con | Connection des ssion me Quieso Curren | Realized and the second | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r – mains J | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* ommunication using ESP / dc 20 % max, 2 A (resistive load), 250 V ac max, 5 A (resistive load) AC switching should only be on the same phase as the control panel. | | |
| Loop co (Loop co Order coo Transmis Loop: Relay con nput E.C | Curren ontact rat D.L resis | All variants) Pole Coop s as per CHQ-DSC above) ethod ting voltage cent current t consumption whilst polling tor | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r – mains 10 kΩ, ± | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* ommunication using ESP / dc 20 % max, 2 A (resistive load), 250 V ac max, 5 A (resistive load) AC switching should only be on the same phase as the control panel. 5%, 0.25 W | | |
| Loop co (Loop co Cransmis Loop: Relay con nput E.C nput three Weights a | Curren ntact rat D.L resis eshold le | All variants) Pole Coop s as per CHQ-DSC above) ethod ting voltage cent current t consumption whilst polling tor | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r – mains 1 10 kΩ, ± 0N=470 | SWITCH 8 DOWN Monitoring Enabled DIN MODULE SWITCH 8 UP Monitoring Enabled SWITCH 8 DOWN Monitoring Disabled RC(SCI) / CHQ-MRC/DIN(SCI)* ommunication using ESP / dc 20 % max, 2 A (resistive load), 250 V ac max, 5 A (resistive load) AC switching should only be on the same phase as the control panel. | | |
| Loop co (Loop co Cransmis Loop: Relay con nput E.C nput three Weights a | Curren of | POOP LOOP s as per CHQ-DSC above) | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r – mains a 10 kΩ, ±t ON=470 331 g | $\frac{SWITCH 8 DOWN Monitoring Enabled}{Monitoring Enabled}$ $\frac{SWITCH 8 UP Monitoring Enabled}{SWITCH 8 DOWN Monitoring Disabled}$ $\frac{RC(SCI) / CHQ-MRC/DIN(SCI)^{*}}{CMMUNICATION USING ESP}$ $\frac{20 \%}{7 dc}$ $\frac{20 \%}{Max, 2 A (resistive load), 250 V ac max, 5 A (resistive load)}{AC switching should only be on the same phase as the control panel.}$ $\frac{5\%, 0.25 W}{\Omega, Short cct <50 \Omega, Open cct > 100 K\Omega}$ $L=157 mm x W=127 mm x D=35 mm (CHQ Module plus Lid)$ $D=79 mm (CHQ Module plus Lid plus CHQ-BACKBOX)$ | | |
| Loop contractions of the coop contraction of the coop contraction of the coop contraction of the contraction | Curren | A Correction of the second sec | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r - mains a 10 kΩ, ± ON=470 331 g 121 g CHQ Mo | $\frac{SWITCH 8 DOWN}{Monitoring Enabled}$ $\frac{SWITCH 8 UP}{SWITCH 8 DOWN} Monitoring Enabled}$ $\frac{SWITCH 8 DOWN}{SWITCH 8 DOWN} Monitoring Disabled}$ $\frac{RC(SCI) / CHQ-MRC/DIN(SCI)^{*}}{Monitoring Disabled}$ $\frac{RC(SCI) / CHQ-Module plus Lid plus CHQ Module plus Lid)}{Module Plus Lid plus CHQ-BACKBOX}$ $\frac{RC(SCI) / CHQ-BACKBOX}{(add 235 g to module weight when using CHQ-BACKBOX)}$ $RC(SCI) / CHQ-BACKBOX White ABS, DIN Module Green ABS$ | | |
| Loop co (Loop co Cransmis Loop: Relay con nput E.C nput thre Neights a Dimensio Colour ar Fire alar | Curren | POOP LOOP all variants) POOP LOOP s as per CHQ-DSC above) Pethod ting voltage cent current it consumption whilst polling tor evel HQ-MRC(SCI) HQ-MRC/DIN(SCI) psure material of panel compatibility required for th | ig 6 CHQ-MR Digital cc 17 - 41 V 300 μA 22 mA ± 48 V dc r - mains a 10 kΩ, ± ON=470 331 g 121 g CHQ Mo nese produc | $\frac{SWITCH 8 DOWN}{Monitoring Enabled}$ $\frac{SWITCH 8 UP}{SWITCH 8 UP} \frac{Monitoring Enabled}{Monitoring Disabled}$ $\frac{SWITCH 8 DOWN}{Monitoring Disabled}$ $\frac{RC(SCI) / CHQ-MRC/DIN(SCI)^{*}}{COmmunication using ESP} / dc$ $\frac{20 \%}{Max, 2 A (resistive load), 250 V ac max, 5 A (resistive load)}{AC switching should only be on the same phase as the control panel.} 5%, 0.25 W \frac{\Omega}{SWITCH 8 DOWN} \frac{SO}{MOULDE} $ | | |

Installation – "Smart-Fix" Version

Set analogue address before installation (see page 1). The fixing surface should be dry and stable.

- Hold the back plate up against the fixing surface and mark the position of the four corner fixing holes.
- Determine which cut-out sections along the top and bottom edges of the module require removing to accommodate the cables being used.
- Remove cut-outs by scoring with a sharp knife before breaking off with pliers or snips.
- Mount the back plate using appropriate fixings (not supplied) for the fixing surface.
- Terminate and connect field wiring as per the wiring diagrams on pages 2 & 3 (and the terminal block indications on the product label).

The transparent lid (CHQ-LID) is supplied with four screws and eight retaining washers.

- Push the screws through one of the retaining washers and then through the holes in the lid from front to back, pushing another retaining washer onto the end inside the lid.
- □ Screw the lid onto the back plate; do not over tighten the screws as this could damage the unit.

Note, a white plastic version of the lid is available (sold separately – CHQ-LID(WHT)).

Installation – "Smart-Fix" with Back Box

For those installations requiring glanded cables, a module back box (CHQ-BACKBOX) is available (sold separately).

| Switch 1 2 3 4 5 6 7 Addr 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 1 0 0 0 1 0 |
|--|
| Switch 1 2 3 4 5 6 7 Addr \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc 43 \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc 44 \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc 45 \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc 44 \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc $<$ 48 \bigcirc \bigcirc \bigcirc \bigcirc $<$ $<$ $<$ $<$ \bigcirc \bigcirc \bigcirc $<$ $<$ $<$ $<$ $<$ \bigcirc \bigcirc \bigcirc $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ $<$ |
| Switch 1 2 3 4 5 6 7 Addr 0 0 0 0 85 86 0 0 0 0 87 0 0 0 0 87 0 0 0 0 90 0 0 0 91 0 0 0 92 0 0 0 93 0 0 0 94 0 0 0 95 0 0 0 97 0 0 0 98 0 0 0 910 0 0 0 101 0 0 0 101 0 0 0 101 0 0 0 101 0 0 0 101 0 0 0 101 0 0 0 101 0 0 0 <td< td=""></td<> |

Fig 7

This features ten knock-out cable entries (glands are not supplied). Ensure glands used conform to IP67, if such ingress protection is required. The CHQ-BACKBOX is mounted on the fixing surface; the CHQ Module is then fitted to the top of the back box. Finally the CHQ-LID is added creating a sealed enclosure. For further details refer to the CHQ-BACKBOX Instructions (2-3-0-800).

Installation – DIN Version

Set analogue address before installation (see page 1) and write loop address in space provided on door label.

- DIN modules should be mounted in a TK-PC 1811 enclosure in conjunction with an NS 35 mounting rail with the loop connections at the bottom of the unit.
- Terminate and connect field wiring as per the wiring diagrams on pages 2 & 3 (and the terminal block indications on the product label).
- □ To comply with EMC regulations, these products must be fitted in a protective enclosure.
- □ Suitable anti-static precautions must be taken when handling these products.

Status LEDs

Refer to the following table for Status LED indications:

| CHQ-DRC (all variants) | Dual Relay Controller | Green LED flashes each time the unit is polled by the fire alarm control panel. |
|------------------------|-------------------------|--|
| CHQ-MRC (all variants) | Mains Relay Controller | Amber LED is continually illuminated when unit detects short-circuit fault. |
| CHQ-DSC (all variants) | Dual Sounder Controller | Green LED flashes each time the unit is polled by the fire alarm control panel and a red LED is continuously illuminated when either output is active. Amber LED is continually illuminated when unit detects short-circuit fault. |



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