

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

Note: (SCI) indicates Module incorporates a short-circuit isolator. DIN indicates Module housing is designed to fit standard "Top Hat" DIN Rail.

Components

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

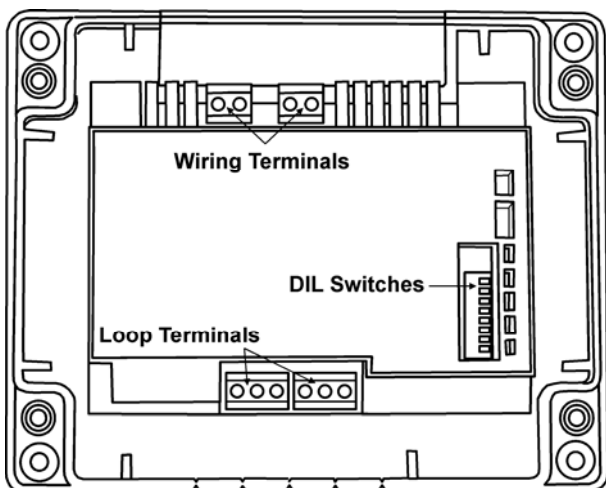


Fig 1

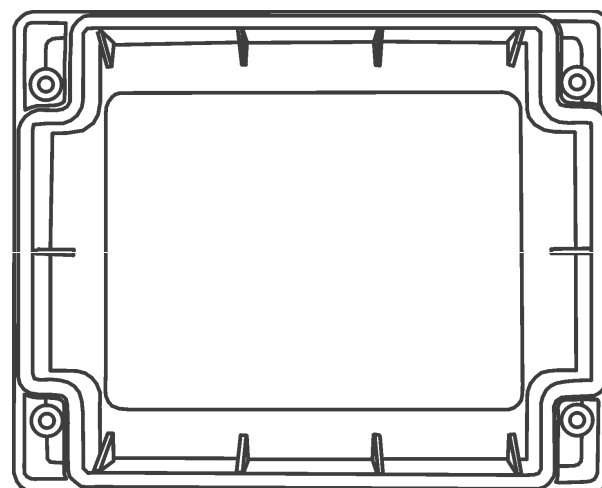


Fig 2

"Smart-Fix" CHQ Module (Back Plate inc PCB Component)
(Note: configuration of Wiring Terminal blocks differs between models)

CHQ-LID Transparent Module Lid
(Supplied with four screws and acrylic retaining washers)

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) and each switch should be in the UP position for "ON" and DOWN for "OFF" and 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.

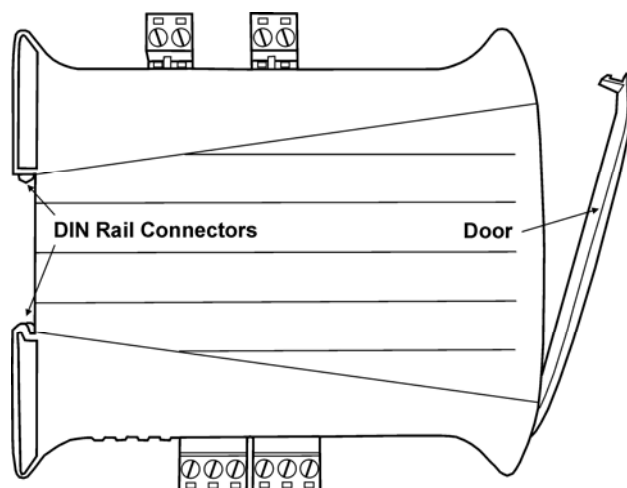
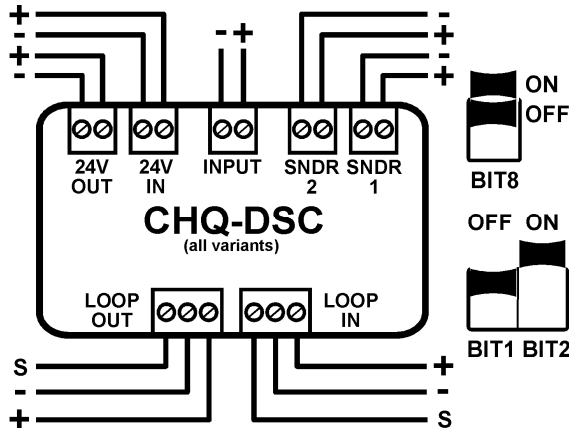


Fig 3

DIN Rail Mountable CHQ

(continued on page 4)

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

Bit 8 - ON = Monitoring Disabled,
OFF = Monitoring Enabled

2-Way DIL Switch

Bit 1 - ON = SNDR O/P 1 Monitoring Disabled,

OFF = SNDR O/P 1 Monitoring Enabled

Bit 2 - ON = SNDR O/P 2 Monitoring Disabled,

OFF = SNDR O/P 2 Monitoring Enabled

This module requires an auxiliary 24Vd.c. power supply (this can also be monitored).

See Fig 4.

LOOP CONNECTIONS

S = Cable Screen (if required)
- = Loop Negative (-ve)
+ = Loop Positive (+ve)

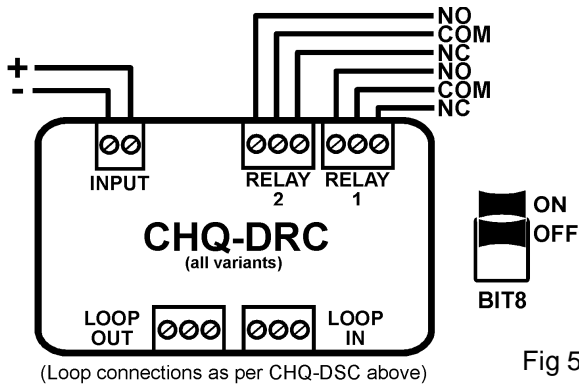
Fig 4

Order codes	CHQ-DSC / CHQ-DSC/DIN / CHQ-DSC/DIN(SCI)* ¹	
Transmission method	Digital communications using ESP	
Loop:	Operating voltage	17 - 41 VDC
	Quiescent current	290µA
	Current consumption whilst polling	22mA ± 20 %
Current in short-circuit	8mA (CHQ-DSC/DIN(SCI))	
Maximum short-circuit current (Loop)	1A (CHQ-DSC/DIN(SCI))	
External Supply:-Operating voltage	20-28.8 VDC (24VDC nominal)	
Current consumption (per line)	Sounder On - 8 mA, Sounder Fault - 6 mA	
Sounder output current	1A/line max	
Sounder line capacitance	0.3µF/line max.	
Sounder E.O.L resistor	1kΩ, ±5%, 2W	
Input E.O.L resistor	10kΩ, ±5%, 0.25W	
Input threshold levels	ON=470Ω, short cct< 50Ω, open cct>100kΩ,	
Weights & Dimensions:	CHQ-DSC	354g
	CHQ-DSC(SCI)	360g
	CHQ-DSC/DIN	140g
	CHQ-DSC/DIN(SCI)	145g
		L=157mm x W=127mm x D=35mm (CHQ Module plus Lid) D=79mm (CHQ Module plus Lid plus CHQ-BACKBOX) (add 235g to module weight when using CHQ-BACKBOX)
Colour and enclosure material	CHQ Module & CHQ-BACKBOX White ABS, DIN Module Green ABS	

*¹ Fire alarm control panel compatibility required for these products.

Note:- All EOL and operational resistors are supplied with the unit – DO NOT DISCARD IN ERROR!

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).



Setting Fault Monitoring

8-Way DIL Switch

Bit 8 - ON = Monitoring Disabled,
OFF = Monitoring Enabled

See Fig 5.

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

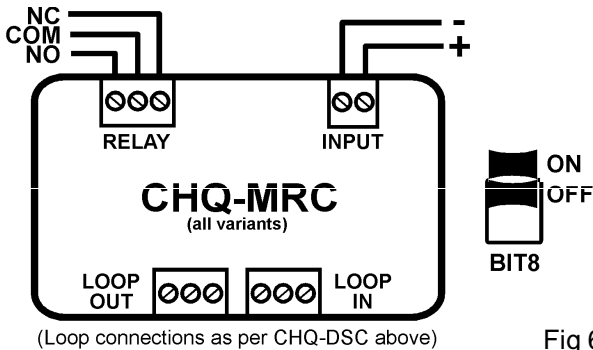
Fig 5

Order codes	CHQ-DRC / CHQ-DRC/DIN / CHQ-DRC/DIN(SCI)*		
Transmission method	Digital communication using ESP		
Loop:	Operating voltage	17 - 41 VDC	
	Quiescent current	300µA	
	Current consumption whilst polling	22mA ± 20 %	
Current in short-circuit	8mA (CHQ-R/DIN(SCI))		
Maximum short-circuit current (Loop)	1A (CHQ-R/DIN(SCI))		
Relay contact rating	30 VDC max, 1A (resistive load)		
Input E.O.L resistor	10kΩ, ±5%, 0.25W		
Input threshold level	ON=470Ω, Short cct <50Ω, Open cct >100KΩ		
Weights and Dimensions:	CHQ-DRC	340g	L=157mm x W=127mm x D=35mm (CHQ Module plus Lid)
	CHQ-DRC/DIN	120g	D=79mm (CHQ Module plus Lid plus CHQ-BACKBOX)
	CHQ-DRC/DIN(SCI)	124g	(add 235g to module weight when using CHQ-BACKBOX)
Colour and enclosure material	CHQ Module & CHQ-BACKBOX White ABS, DIN Module Green ABS		

* Fire alarm control panel compatibility required for these products.

Note:- All EOL and operational resistors are supplied with the unit – DO NOT DISCARD IN ERROR!

CHQ-MRC MAINS RELAY CONTROLLER is a loop powered input/output module, with a single mains-rated change-over relay output, which has the N/O, N/C and COMMON contacts available via flying leads. This output is driven under the control of the fire alarm panel and can be 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 and this is fully monitored for open and short circuit (can be disabled). Note:- The state of the relay contacts will be indeterminate until the unit is powered.



Setting Input Monitoring

8-Way DIL Switch

Bit 8 - ON = Monitoring Disabled,
OFF = Monitoring Enabled

See Fig 6.

Fig 6

Order codes	CHQ-MRC / CHQ-MRC/DIN / CHQ-MRC/DIN(SCI)*		
Transmission method	Digital communication using ESP		
Loop:	Operating voltage	17 - 41 Vd.c.	
	Quiescent current	300µA	
	Current consumption whilst polling	22mA ± 20 %	
Relay contact rating	48Vd.c. max, 2A (resistive load), 250Va.c. max, 5A (resistive load) – mains AC switching should only be on the same phase as the control panel.		
Input E.O.L resistor	10kΩ, ±5%, 0.25W		
Input threshold level	ON=470Ω, Short cct <50Ω, Open cct >100KΩ		
Weights and Dimensions:	CHQ-MRC	325g	L=157mm x W=127mm x D=35mm (CHQ Module plus Lid)
	CHQ-MRC/DIN	116g	D=79mm (CHQ Module plus Lid plus CHQ-BACKBOX)
	CHQ-MRC/DIN(SCI)	121g	(add 235g to module weight when using CHQ-BACKBOX)
Colour and enclosure material	CHQ Module & CHQ-BACKBOX White ABS, DIN Module Green ABS		

* Fire alarm control panel compatibility required for these products.

Note:- All EOL and operational resistors are supplied with the unit – DO NOT DISCARD IN ERROR!

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).

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.

- ❑ Clip onto an appropriate DIN Rail, which should be mounted within an approved enclosure 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.

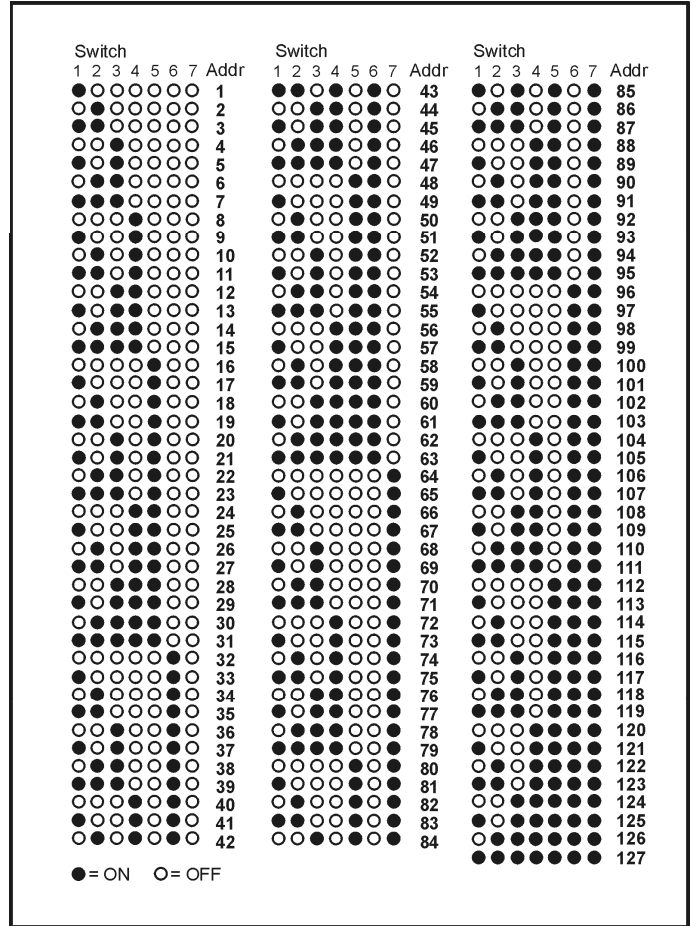


Fig 7



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