SeaChange

Data Sheet M1

Boiler Cascade Module - DIN rail mounting

Main Features

Controls 1 or 2 Boilers or one single Low/High fired Boiler in conjunction with a Boiler Controller

Optional Lockout monitoring or Stage Disable facility

Up to 10 boilers (or 5 Low/High boilers) in one Sequence

User Features

LEDs show status of controller and Boiler Lockouts (if fitted)

Engineering Features

Works with SeaChange Boiler Controller to provide Sequence Control of Multiple Boilers (up to 10 stages in one sequence)

Optional inputs for Lockout Signals or Manual Stage Disable Switches automatically remove that Stage from the Sequence

Local Manual Override of Outputs

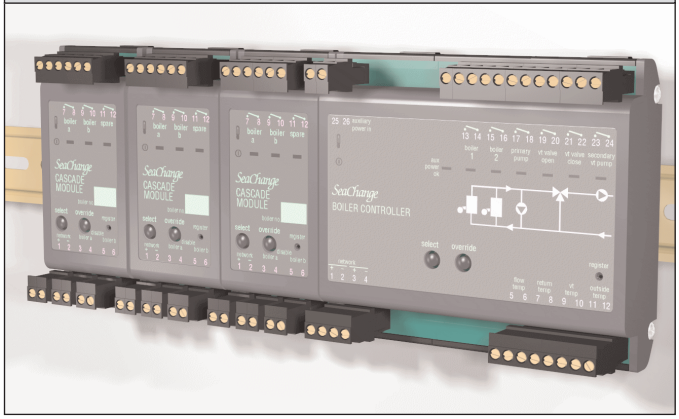
DIN rail mounting, suitable for panel mounting

Use of Lockout / Disable inputs

The Cascade module has two inputs which may be used to remove a boiler stage from the sequence in the case of a fault (eg. burner lockout signal) or because the stage is temporarily out of service (from a maintenance disable switch).

Alternatively, these inputs can be used to generate alarm signals which are transmitted to a SeaChange Doorway Superviser (locally connected to the system, or remotely connected via a Autodialling Modem).

The alarm inputs may be used to maintain boiler lockout conditions, in which case they will disable the output relay for that stage until the fault is rectified. Alternatively they may be used as General Alarm inputs (for some other general plant fault) in which case the alarm is transmitted without affecting boiler sequencing.



Features

Fault Indicator
indicates whether Boiler stages are healthy or locked out / disabled.
Green = both stages healthy
Amber Flashing = one or more stages locked out

Connections
for Boiler enable signals; “spare” relay output may be used to drive a panel lamp indicating Boiler stage lockout or disabled.

Latches
for retaining controller to DIN rail may be released using a screwdriver.

Relay Status Lamps
indicate the current status of the two output channels.

Status lamp
indicates a Boiler stage demand if lit, also indicates that controller is in override mode if flashing.

Override
Override is used to enable boilers a and b temporarily, for testing purposes. After a short time, the boilers will return to automatic control. Boilers may be brought on for longer periods, under temperature control, by using the override feature of the Boiler Controller.

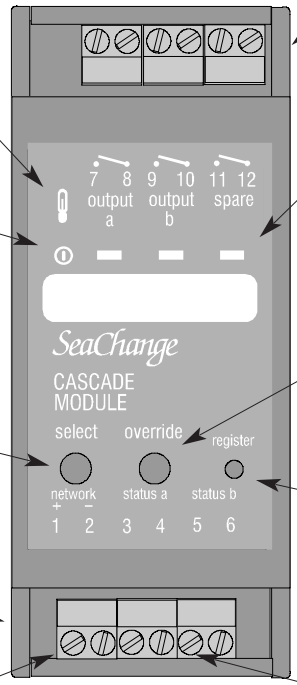
Select
is used during commissioning to allow a Zone Controller to display the Engineering Parameters of this controller.

Terminals
are all of two-part construction to facilitate wiring connections.

Registration Button
is used during the commissioning process to build logical links between this module and the Boiler Controller.

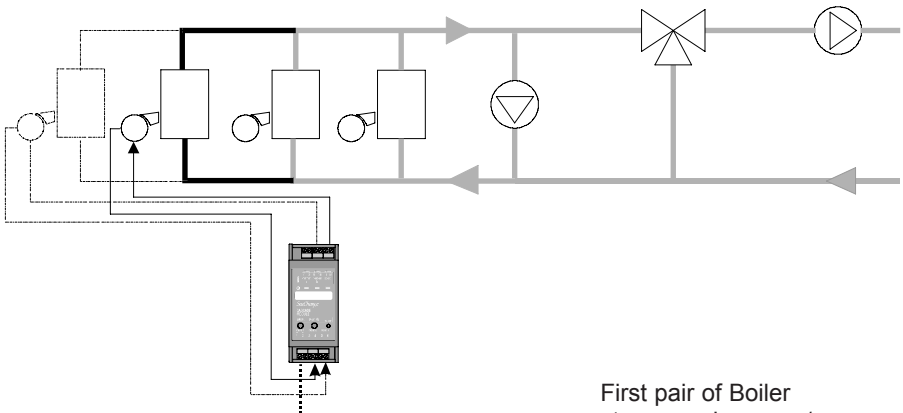
Connections
for Network.

Connections
for optional lockout signals or maintenance switches.



Typical Applications

Up to 10 Boiler stages may be controlled in one sequence by the Boiler Controller



Lockout signals are optional.
Inputs may alternatively be wired to Maintenance switches which will take Boiler Stages out of the operating sequence

First pair of Boiler stages and pumps / valves controlled by the Boiler Controller (see Boiler Controller Data Sheet for details).

Configuration Parameters

Label	Doorway Code	Description			Units	Default Value	Range
ALRM	C1	Alarm Mode			-	1	0 - 3
			0:	No Alarms			
			1:	No Alarms Inputs disable boilers			
			2:	Boiler Lockout When locked out boiler output stays on			
			3:	General Alarms			
ALST	C2	Alarm State			-	1	0 - 1
			0:	Open circuit			
			1:	Short circuit			

Monitoring Parameters

Label	Doorway Code	Description	Units	Default Value	Range
INPA	I1 (C30)	Status of input A	-	-	On/Off
INPB	I2 (C31)	Status of input B	-	-	On/Off
ENA	I3 (C32)	for future use	-	-	On/Off
ENB	I4 (C33)	for future use	-	-	On/Off
RLYA	I6 (C35)	Status of output A	-	-	On/Off
RLYB	I7 (C36)	Status of output B	-	-	On/Off
RLYC	I8 (C37)	Status of output C	-	-	On/Off
AUTO	W1 (C38)	Automatic, control mode	-	-	On/Off
OVRD	W2 (C39)	Override	-	-	On/Off
NOAL	C90	No Alarms on unit	-	-	On/Off
GENA	C91	General Alarm A	-	-	On/Off
GENB	C92	General Alarm B	-	-	On/Off
LOKA	C93	Boiler A Lockout	-	-	On/Off
LOKB	C94	Boiler B Lockout	-	-	On/Off

Accessing Configuration and Monitoring Parameters

Configuration Parameters are used to adjust settings from their factory defaults; Monitoring Parameters are used to monitor internal readings (such as temperature readings) during the Commissioning process.
The Parameters may be viewed, and in the case of Configuration Parameters, adjusted by one of two methods; either by using a Zone Controller connected to the network, or by using the SeaChange Doorway Supervisor.

Using the Zone Controller:

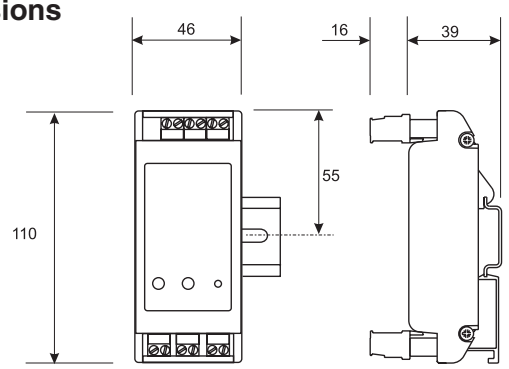
a) The Zone Controller must be connected to the network and *registered* (see Commissioning Guide for further details).
b) Put the Zone Controller into Configuration Mode by depressing Select and Override buttons for 10 seconds, until the CNFG legend appears on the display.
c) Press Select button on the target device (in this case, the Cascade Module).
d) Hold down Select button on the Zone Controller, and rotate the rotary knob:
clockwise to view Monitoring Parameters
anticlock to view Configuration Parameters
e) When desired Configuration Parameter appears, release Select, hold down Override and turn knob to adjust the parameter (Monitoring Parameters cannot be adjusted).

Using SeaChange Doorway:

Data Points may be added to a Doorway page to access/adjust any Configuration or Monitoring Parameter. Graphs of certain Parameters are also available. The code used to access each parameter is shown in the adjacent tables.
Further details of how to set up Doorway pages may be found in the SeaChange Doorway Manual, or in the online help facility supplied with SeaChange Doorway.
The PC running SeaChange Doorway can be connected locally via a Serial Adaptor Module, or remotely using standard High-Speed Modems; all Parameters can thus be monitored and adjusted remotely.

Specification

Dimensions



all dimensions in mm

Electrical

Inputs	2 volt-free contacts.
Outputs	3 Triacs - 1A at 230V
Consumption	25mA from network

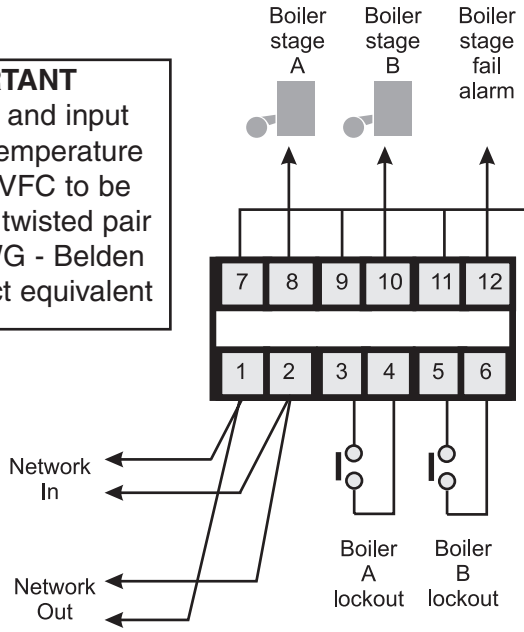
Physical

Weight	0.15 kg
Cover Material	PC/ABS alloy Self extinguishing to UL 94 V0/1.60
Base Material	Polyamide 6.6 Self extinguishing to UL 94 VO
Colour	Dark Grey to Pantone 425

CE Conformant product

Wiring Information

IMPORTANT
All network and input cable from temperature sensors or VFC to be unscreened, twisted pair cable, 20AWG - Belden 8205 or direct equivalent



250Vac maximum supply voltage. dc voltage not suitable

Panel switches for temporarily disabling a Boiler stage may be substituted for lockout signals. Contacts should be arranged so that 'contact open' = stage available. Inputs may also be used as General Alarm outputs from other plant.

Options and Product Codes

CAS / DIN / 3T / 001	Cascade Module to control 1 or 2 Boiler stages in conjunction with a SeaChange Boiler Controller

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