



SESEQUAL - COMPARATOR AND LOAD EQUALIZER

SESEQUAL is a two-channel comparator designed to operate as:

- Two transmitter signal deviation detector
- Load equalizer in two boiler systems
- Preheating of slave boiler in two boiler systems

It can also be used as a limit unit in which one of the inputs is the actual value and the other input is an externally adjustable limit signal.

SESEQUAL is provided with mA output signals and can also operate as a two channel R to I converter.

Postadress/Mailing address	Kontor/Office	Telefon/Telephone	Telefax	Postgiro	Bankgiro
S.E.S. Scandinavian Electronics AB Box 5 S-149 21 NYNÄSHAMN Sweden	Konsul Johnsons väg 2 Nynäshamn	08 520 175 75 +46-8 520 175 75	08 520 168 64 +46-8 520 168 64	1 09 51-2	563-6709 SE-Banken

SESEQUAL MANUAL CONTENTS

DESCRIPTION:	Function
SPECIFICATIONS:	Technical data
ORDERING INFO:	Type No./Function
ADJUSTMENTS:	Two transmitter signals deviation detector. Load equalizer used together with SESCON controller. Load equalizer in two boiler systems.
INSTALLATION:	Dimensions, external wiring, drawings.

FUNCTION

2 input signals A and B are compared and the deviation between them is detected via two output relays. The relays are actuated when the adjusted DEVIATION limit is reached. When input A > input B the A > B relay is activated and when input A < input B A < B relay is activated. Relays are deactivated when the deviation is less than adjusted HYSTERESIS. Relay contacts are change over types. Each input signal is individually RANGE and ZERO adjustable to produce a proper 0-1mA-output signal of each input.

Two LED indicators A > B and A < B are lit up when corresponding deviation limit relay is activated.

Deviation limit relays can be delayed 0 to 4 sec programmable.

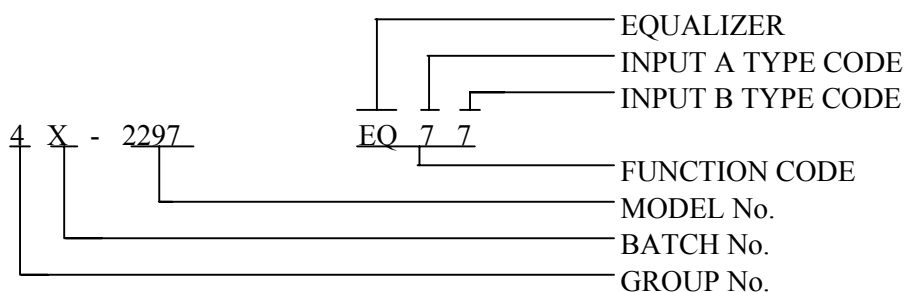
The internal primary fuse is disconnect able. (Faulty fuse is measured on terminals 13-16).

There are several models available for most input signal types i.e. current voltage and resistance.

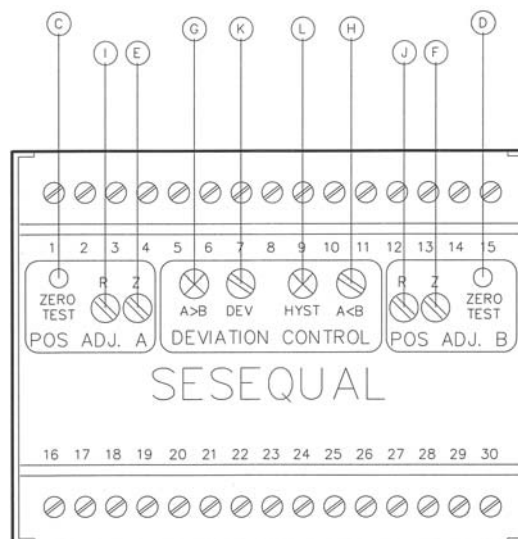
The cabinet can be mounted on standard DIN rail or screwed direct to a chassis.

ORDERING INFORMATION

ORDER NO.		FUNCTIONS				
TYPE NO.	FUNC. CODE	TRM A	TRM B	OUTPUT	RELAY	DESCRIPTION
4X-2297	EQ 77	0-1mA	0-1mA	0-1mA	1s	0-1mA inputs 1 sec alarm delay
4X-2314	EQ 22	0-20mA	0-20mA	0-1mA	1s	0-20mA inputs 1 sec alarm delay
4X-2315	EQ 11	4-20mA	4-20mA	0-1mA	1s	4-20mA inputs 1 sec alarm delay
4X-2316	EQ 44	Pot 100	Pot 100	0-1mA	0	Pot input 100Ω
4X-2317	EQ 44	Pot 200	Pot 200	0-1mA	0	Pot input 200Ω
4X-2318	EQ 44	Pot 500	Pot 500	0-1mA	0	Pot input 500Ω
4X-2319	EQ 44	Pot 1000	Pot 1000	0-1mA	0	Pot input 1KΩ



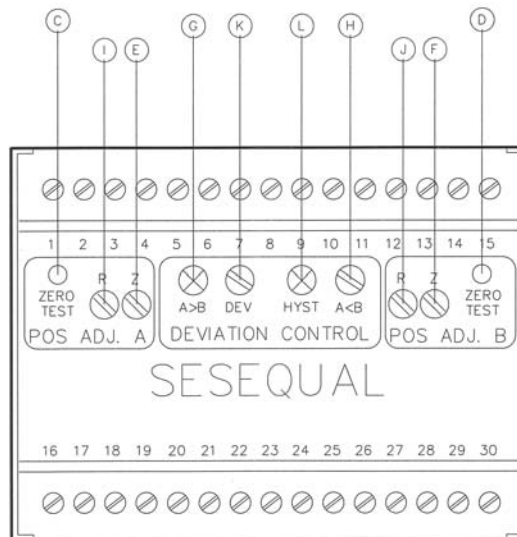
ADJUSTMENTS



ADJUSTMENT FOR TWO TRANSMITTER SIGNALS DEVIATION DETECTOR Drg. 31-2298 sh. 3 and 4

- ZERO:** No adjustment to be made.
- RANGE:** Set potentiometers [I] and [J] to min (CCW) position.
- DEV:** Adjust DEV [K] pot. to a suitable value for your application. (Adjustable 2-35 % of max input signal).
- HYST:** Adjust HYST [L] pot. to a suitable value for your application. (Adjustable 10-90 % of adjusted deviation).

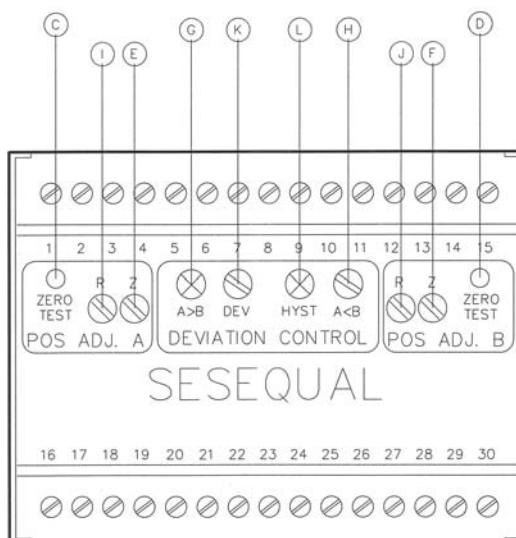
ADJUSTMENTS



**ADJUSTMENT FOR LOAD EQUALIZER USED TOGETHER WITH SESCON CONTROLLER
Drg. 31-2298 sh. 2**

- ZERO:** No adjustments to be made.
- RANGE:** Set potentiometer [I] and [J] to min (CCW) position.
- DEV:** Adjust DEV [K] pot. to a suitable value for your application. (Adjustable 2-35 % of max input signal).
- HYST:** Adjust HYST [L] pot. to a suitable value for your application. (Adjustable 10-90 % of adjusted deviation).
- REMARKS:** Zero and range for actuator position potentiometers are adjusted on the ACTUATOR ZERO and RANGE trimmers in the right hand side of the SESCON controller.

ADJUSTMENTS



ADJUSTMENT FOR LOAD EQUALIZER IN TWO BOILER SYSTEMS

Drg. 31-2298 sh. 1

ZERO: Put DEV [K] and HYST [L] in position 1. Run both load controllers to closed positions. Press ZEROTEST A [C] pushbutton and adjust ZERO A [E] trimpot. so A > B and A < B lamps are dark.

Do the same with ZEROTEST B [D] and adjust ZERO B [F] trimpot. so A > B and A < B lamps are dark.

RANGE: Run both load control motors to max open positions.

If A > B [G] lamp is lit up, adjust RANGE A [I] trimpot. to A > B [G] lamp is out or if A < B [H] lamp is lit, do the adjustment on RANGE B [J] trimpot.

REMARKS: If you need a proper 0-1mA output signal corresponding to the potentiometer position, please use mA-meter connected to 6-7 and 8-9 and adjust ZERO and RANGE by readings on mA-meter.

DEV: DEV [K] pot. should be adjusted to a suitable value for your application. (Adjustable 2-35 % of max input signal).

HYST: Adjust HYST [L] pot. to a suitable value for your application. (Adjustable 10-90 % of the adjusted deviation).

SESEQUAL TECHNICAL DATA

DIMENSIONS: W x H x D 100x75x110 mm

MECHANICAL MOUNTING: DIN C-rail or screwed directly to plate.

WEIGHT: 550 grams

POWER: 220V AC + 15% 45-66 Hz 4 VA
internally fused 315mA slow blow

AMBIENT TEMP: -10 to +55°C

CONTACTS RATING MAX: AC 220V 4.5A 1000VA
DC 300V 4.0A 100W

ANALOGUE SIGNAL
OUTPUTS: 0-1mA max RL = 10kΩ

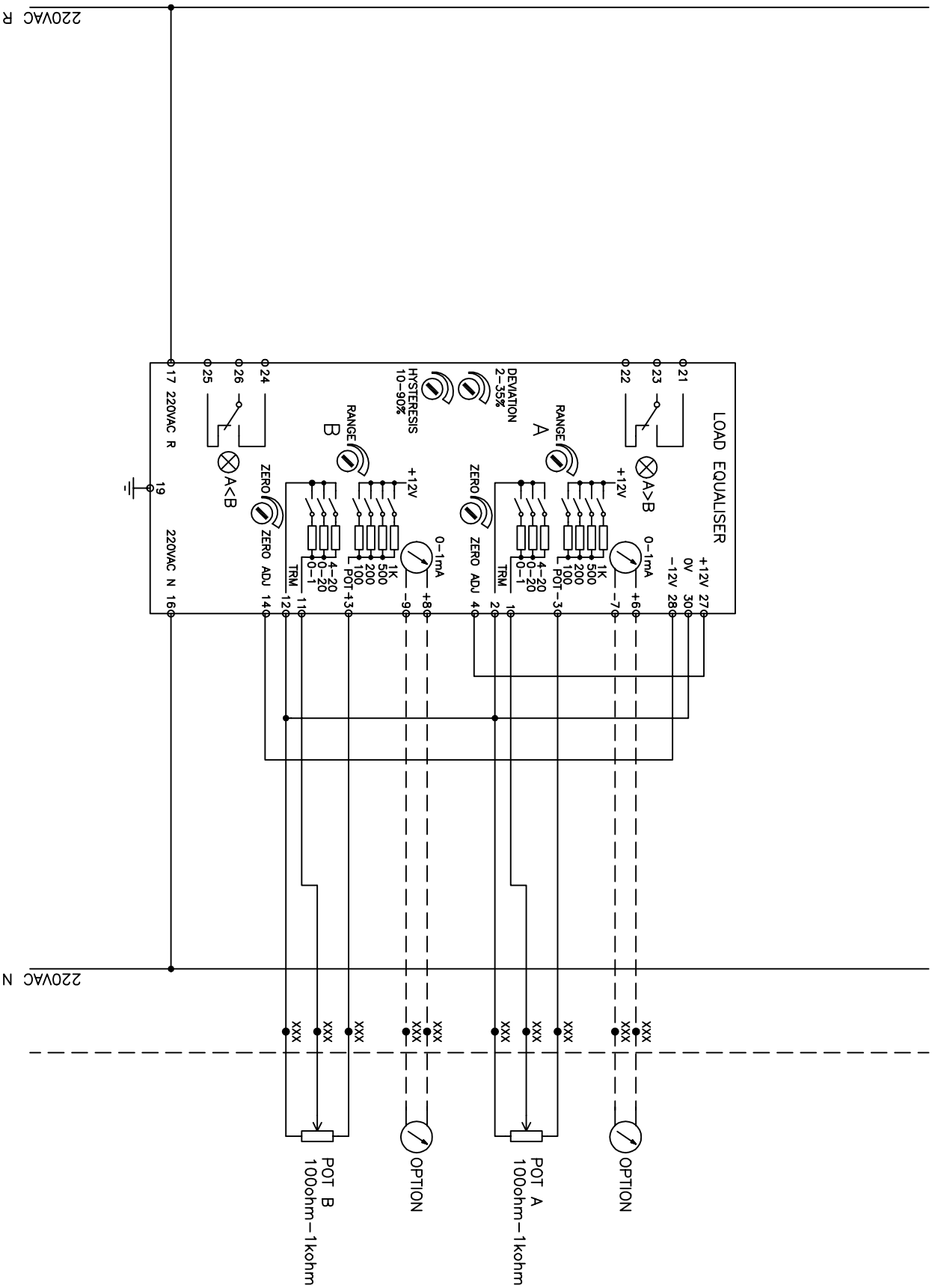
ANALOGUE SIGNAL
INPUTS: 0-1mA Rin 1kΩ
0-10mA Rin 50Ω
4-20mA Rin 63Ω
0-1V Rin 800kΩ
Pot. 100Ω - 1kΩ

ZERO SUPPRESSION RANGE: 0-40 %

INPUT SIGNAL ADJUST-
MENT RANGE: 100 - 250 %

DEVIATION ADJUSTMENT
RANGE: 2 - 35 % of max input signal

HYSTERESIS ADJUSTMENT
RANGE: 10 - 90 % of adjusted deviation



Anmärkingar/Remarks

Sista Ändring/
Last revision

Best nr/Order No.

Anläggning/Plant

SESEQUAL

Designation

EXTERNAL WIRING

S.F.S. Scandinavian
Electronics AB

Jmt rth/See drawing

Littera

Antal/Tot sh

Forts/Next sh

Bild/Sheet

2

Ritning nr/Drawing No.

31-2298

Stor/
Size

A3

Konstr./Design

Datum/Date

Gransk./Check

Godk./Approv

Ersätter/Replaces

Fi nr/File No.

910910

POTENTIOMETER INPUT

1000hm-1kohm

1000hm-1kohm

POT B

OPTION

POT A

OPTION

OPTION

POT B

OPTION

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

xxx

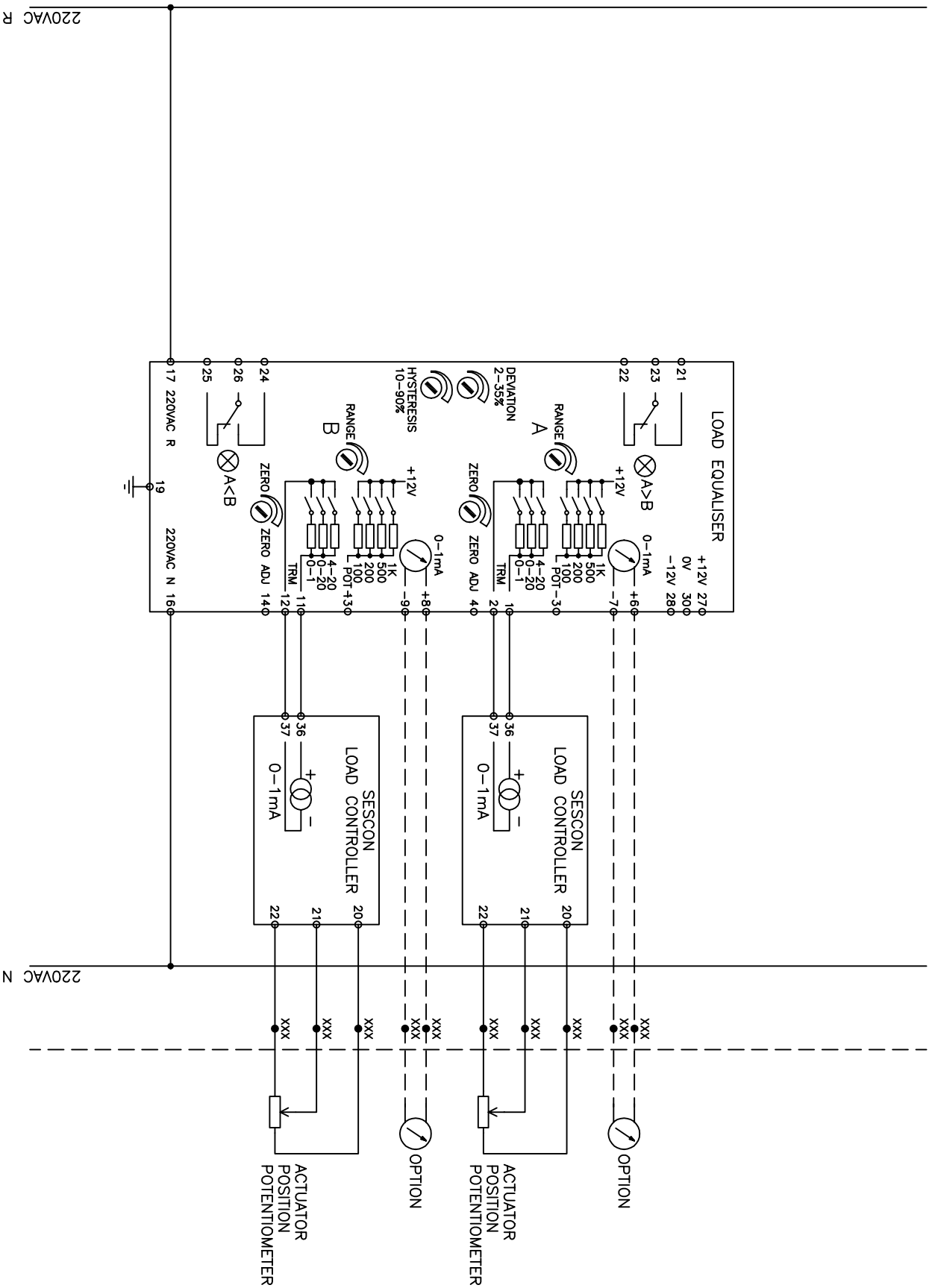
xxx

xxx

xxx

xxx

xxx



Anmärkingar/Remarks

Sista Ändring/
Last revision

Best nr/Order No.

Anläggning/Plant

SESEQUAL

Designation

EXTERNAL WIRING

S.F.S. Scandinavian
Electronics AB

Jmt rthn/See drawing

Forts/Next sh

Littera

Antal/Tot sh

Blad/Sheet

Ritning nr/Drawing No.

31-2298

Stor/Size

A3

Konstr./Design

0 - 1 mA INPUT

Godk./Approv

Ersätter/Replaces

Datum/Date

9 109 10

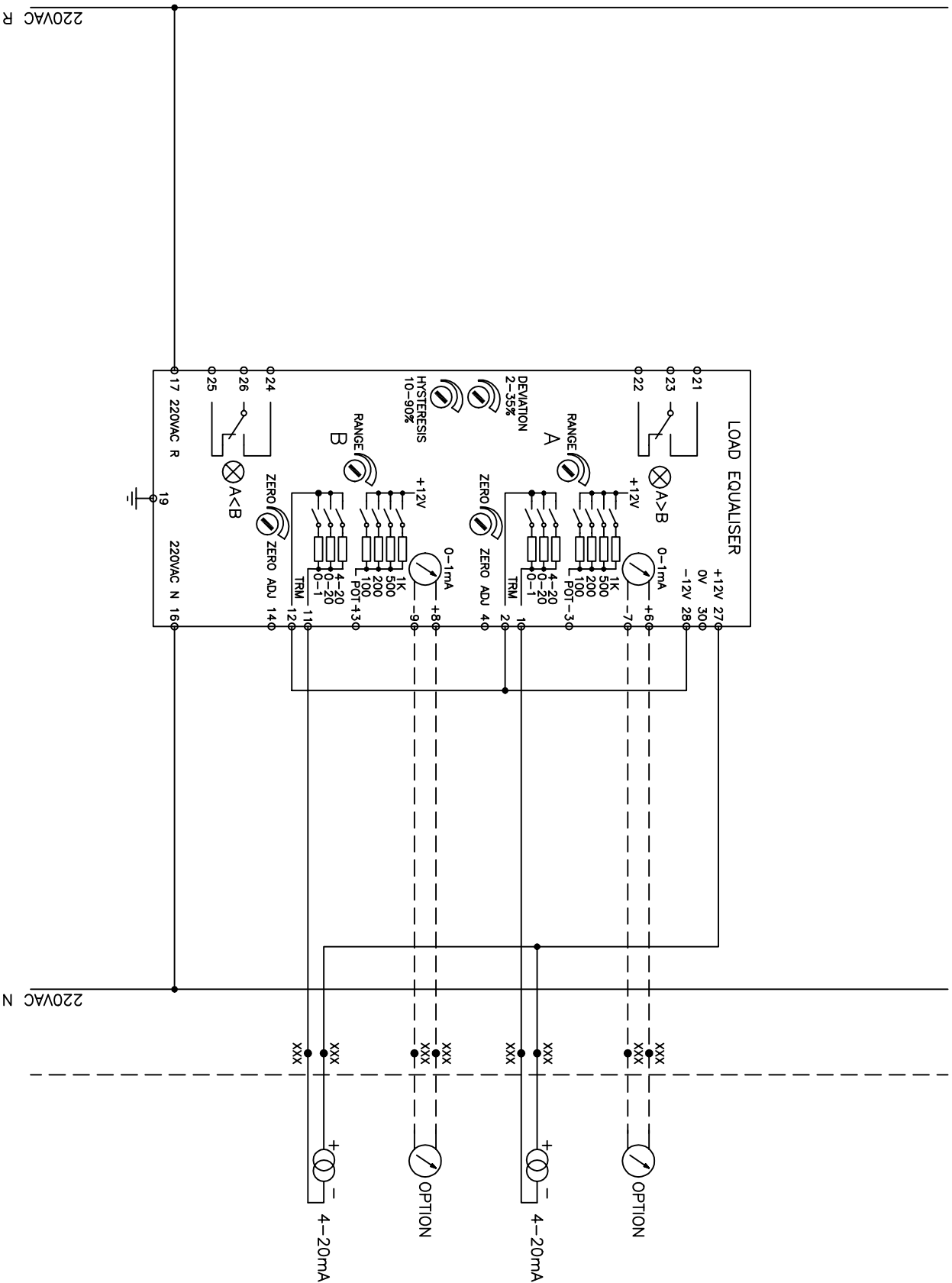
Gransk./Check

31229802

Fi nr/File No.

31229802

Low in force protects S.F.S. Scandinavian Electronics AB property
Right to this drawing or its contents must not -
without permission - be published, copied, multiplied,
fabricated or improperly used otherwise.



Anmärkingar/Remarks

Sista Ändring/
Last revision

Best nr/Order No.

Anläggning/Plant

SESEQUAL

Designation

EXTERNAL WIRING

S.F.S. Scandinavian
Electronics AB

Konstr./Design

4-20mA 2-WIRE INPUT

Gransk./Check

Datum/Date

9 109 10

Godk./Approv

31229803

Ersätter/Replaces

Jmt rthn/See drawing

Littera

Antal/Tot sh

Forts/Next sh

4

Ritning nr/Drawing No.

31-2298

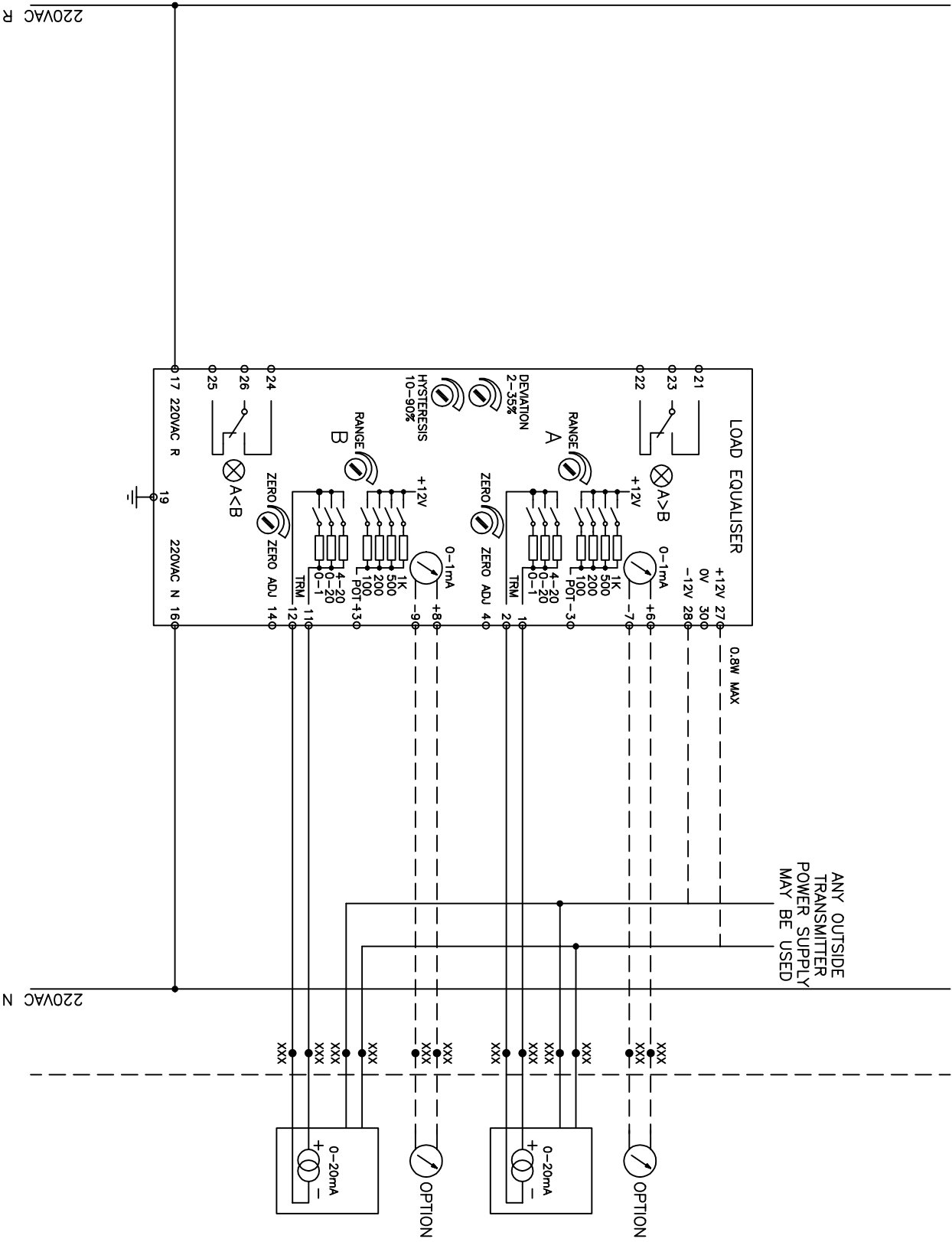
Blad/Sheet

3

Stor/Size

A3

Low in force protects S.F.S. Scandinavian Electronics AB property
Right to this drawing or its contents must not be
fabricated or improperly used otherwise.
Without permission - be published, copied, multiplied.



Anmärkingar/Remarks

Sista Ändring/
Last revision

Best nr/Order No.

Anläggning/Plant

SESEQUAL

Designation

EXTERNAL WIRING

S.F.S. Scandinavian
Electronics AB

Konstr./Design

0-20 mA INPUT

Gransk./Check

Godk./Approv

Ersätter/Replaces

Datum/Date

9 109 10

Fi nr./File No.

31229804

Jmt rthn/See drawing

Littera

Antal/Tot sh

Bild/Sheet

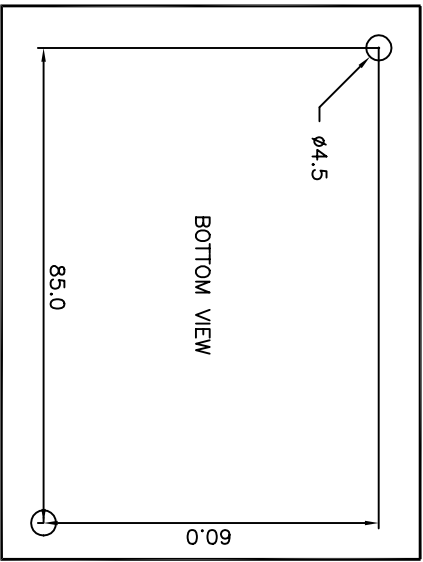
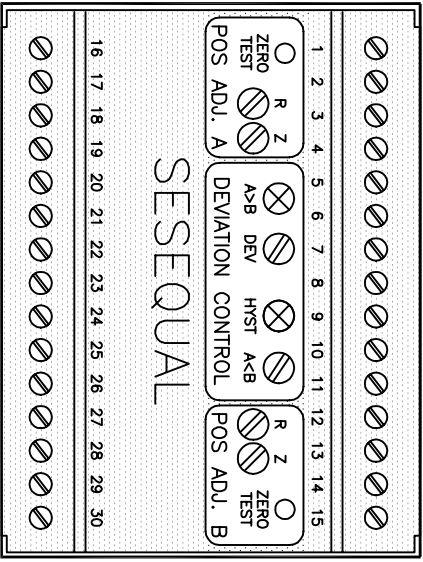
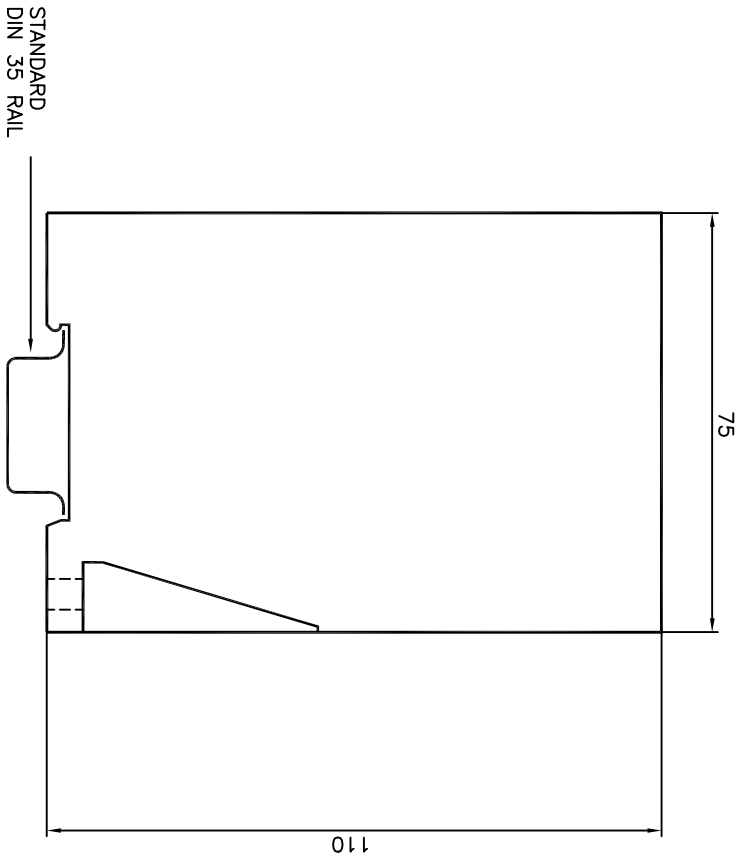
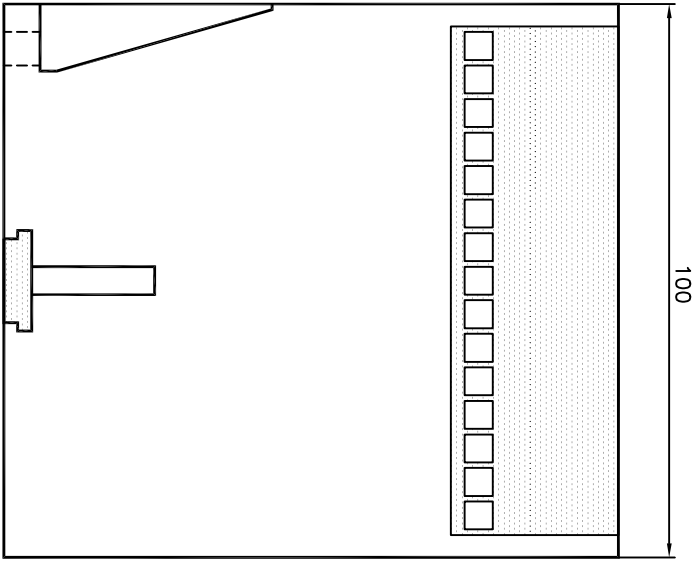
Ritning nr./Drawing No.

31-2298

Stor/
Size

A3

Low in force protects S.F.S. Scandinavian Electronics AB property
Right to this drawing or its contents must not be
fabricated or improperly used otherwise.
Without permission - be published, copied, multiplied.



Anmärkingar/Remarks

Sista Ändring/
Last revision

Anläggning/Plant

Designation

Best nr/Order No.

SESEQUAL LAYOUT

S.E.S. Scandinavian
Electronics AB

Konstr./Design

Gransk./Check

Godk./Approv

Ersätter/Replaces

Datum/Date

9 109 10

Fi nr/File No.

31237201

Jmf rthn/See drawing

Littera

Antal/Tot sh

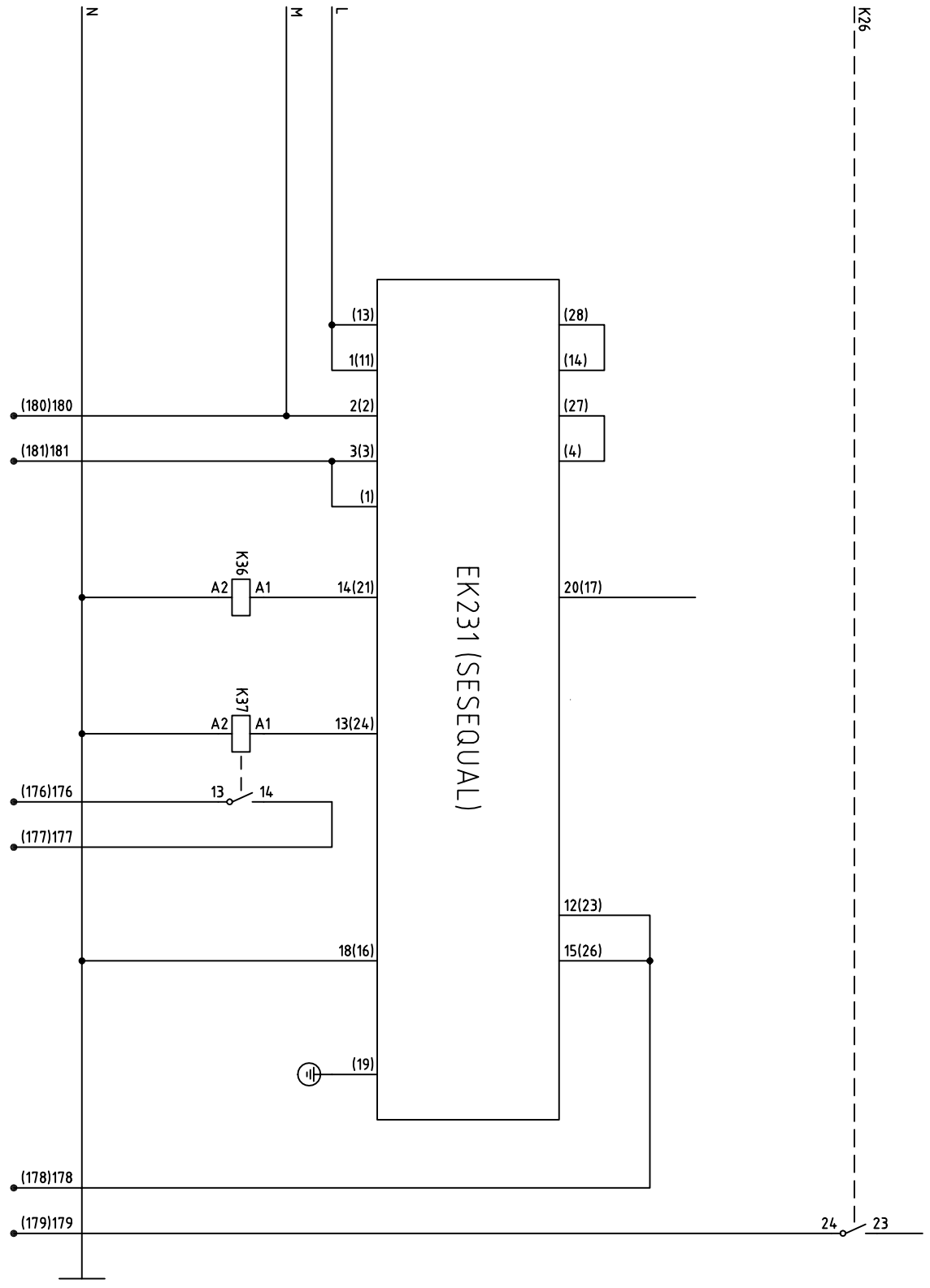
Blad/Sheet

Ritning nr/Drawing No.

31-2372

Stor/
Size

A3



K26

24 23

Anmärkning/Remarks		Senaste Ändring/ Last revision		Anläggning/Plant		Beteckning/Designation		Konstr./Design		Datum/Date		Littera		Jmf rth/See drawing		Forts./Next sh	
EK231 - SESEQUAL CONNECTION WHEN USED WITH S.E.S. C4 OR D4 CONTROLLER.		Best nr/Order No.		EK231 - SESEQUAL CONNECTION		S.E.S. Scandinavian Electronics AB		1992-04-27		1992-04-27		2446-31		2446-31		A3	