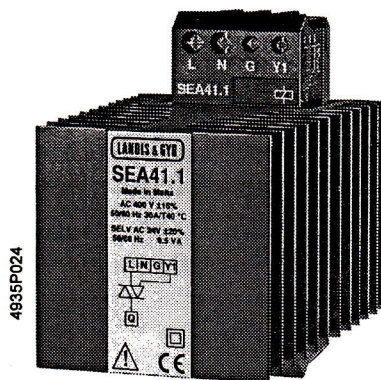


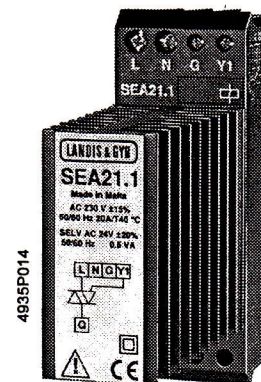
## Current Valves

for AC 24 V pulse/pause control  
of electric loads up to 36 kW

## SEA21.1 SEA41.1



SEA41.1



SEA21.1

### Use

The current valves are used for the control of electric heating elements in HVAC plants, for example:

- Electric air heater batteries
- Fan coil units
- Induction units
- Electric radiators
- Electric underfloor and ceiling heating systems
- Reheaters in fan coil units and supply air ducts
- Convectors and heating panels

The current valves are designed to switch resistive loads in the range 0.35 kW (1 x AC 230 V) to 36 kW (3 x AC 400 V).

### Type summary

Type reference	Operating voltage	Minimum switching capacity <sup>1)</sup>	Maximum switching capacity <sup>2)</sup>
<b>SEA21.1</b>	1 x AC 230 V	0.35 kW	4.6 kW
<b>SEA41.1</b>	1 x AC 400 V	1.0 kW	12 kW

1) Used for sizing the load; has nothing to do with controllability

2) The maximum switching capacity applies to single-phase applications. For greater switching capacities, refer to connection diagrams 1 to 4.

### Ordering

When ordering, please give name and type reference, e.g. current valve **SEA21.1**.

### Equipment combinations

The current valves can be controlled by any device operating on AC 24 V and delivering one of the following types of control signals:

- Pulse/pause control signal AC 24 V
- Continuous control signal DC 0...10 V<sup>1)</sup>
- On/off control signal DC 0/10 V<sup>1)</sup>

1) Must be converted to an AC 24 V pulse/pause control signal with the help of the SEM61.4 signal converter (refer to data sheet 5102)

The cooling body must not be earthed (double insulated against the load circuit).



The cooling body becomes hot (>60 °C) under normal operating conditions. Do not touch during operation or just after!

**Note**

Connection diagram 4 in section "Diagrams" may be used only when replacing current valve types SEL61.31 and SEL61.32. It is not in compliance with EMC directive EN 50 081-1 covering emissions.

**Fitting and installation notes**

Mounting location: on a wall or in a ventilated control panel.

Mounting method: snaps on DIN mounting rails.

The current valve must always be mounted such that the cooling fins are vertical.

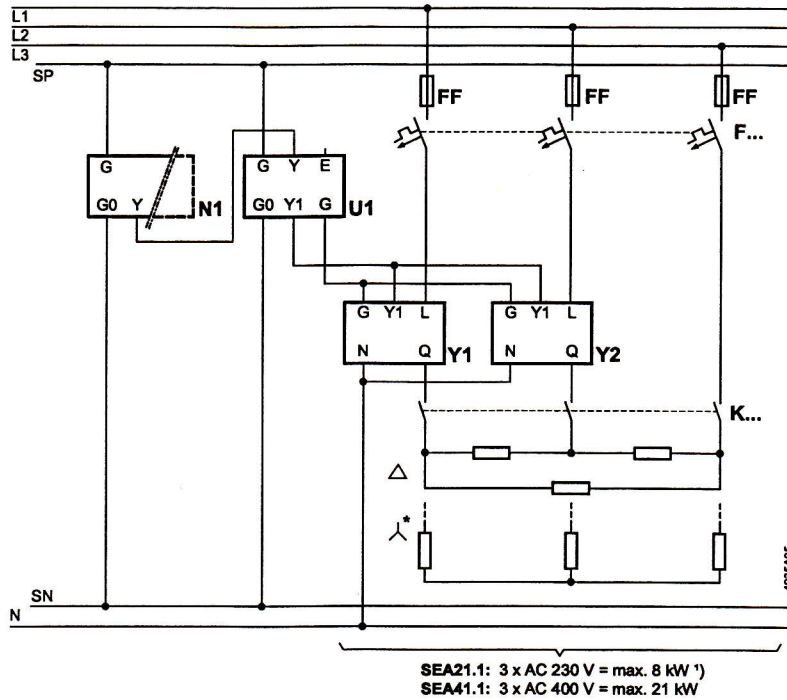
The local electrical regulations must be complied with.

**Technical data**

Control side	System voltage (SELV) (terminal G)	AC 24 V ±20 %	
	Frequency	50 or 60 Hz	
	Power consumption (AC 24 V)	0.5 VA	
	Control signal voltage (pulse/pause) (terminal Y1)	AC 24 V	
Load side		<b>SEA21.1</b>	<b>SEA41.1</b>
	Mains voltage (terminals L, N, Q)	AC 230 V ±15%	AC 400 V $\begin{matrix} +10 \\ -15 \end{matrix}$ %
	Frequency	50 or 60 Hz	50 or 60 Hz
	Current $I_{\text{off}}$ at 40 °C		
	max.	20 A	30 A
	min.	1.5 A	2.5 A
	Switching capacity	0.35...4.6 kW	1.0...12 kW
Loss of power at triac	3...25 W	5...39 W	
General data	Switching characteristic	zero-voltage switch	
	Perm. line length (terminals G, Y1) Copper cable 0.6 mm dia.	300 m	
	Connection terminals for	1 x 2.5 mm <sup>2</sup> and 2 x 6 mm <sup>2</sup> or 1 x 10 mm <sup>2</sup>	
	Insulation strength "control circuit - load circuit"	AC 4 kV	
	Degree of protection of housing	IP 20 to EN 60 529	
	Insulation class	II to EN 60 730	
	Ambient conditions		
	Operation	to IEC 721-3-3	
	Climatic conditions	class 3K5	
	Temperature	-5...+50 °C	
	Humidity (non-condensing)	5...95 % r. h.	
	Transportation	to IEC 721-3-2	
	Climatic conditions	class 2K3	
	Temperature	-25...+70 °C	
	Humidity	<95 % r. h.	
	Mechanical conditions	class 2M2	
	Electromagnetic compatibility		
Emissions	EN 50 081-1		
Immunity	EN 50 082-2		
CE conformance to			
EMC directive	89/336/EWG		
Low voltage directive	73/23/EWG		
Product standards			
Automatic electrical controls for household and similar use	EN 60 730		
Weight (excl. packing)			
SEA21.1	0.460 kg		
SEA41.1	0.770 kg		

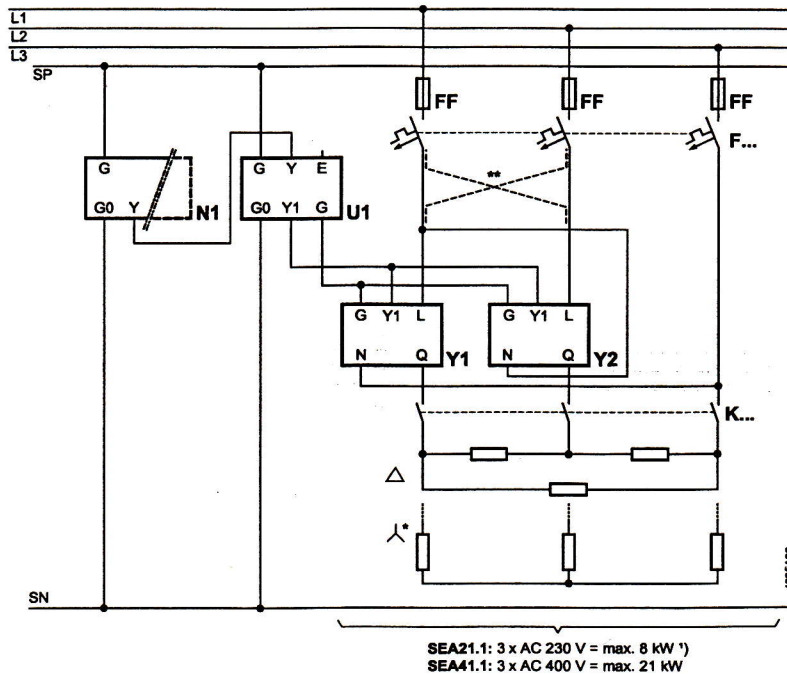
Connection diagram 3

**SEA21.1/SEA41.1 with signal converter:** three-wire connection and neutral conductor in an AC 230 V or AC 400 V network (symmetric loading of phases)



Connection diagram 4

**SEA21.1/SEA41.1 with signal converter:** used only when replacing SEL61.31 or SEL61.32! Three-wire connection in an AC 230 V or AC 400 V network (symmetric loading of phases)



**Legend**

- N1 Control unit (e.g. controller) with DC 0...10 V or DC 0/10 V output signal
- N2 Control unit (e.g. controller) with AC 24 V pulse/pause output signal
- U1 Signal converter SEM61.4
- Y1...Y5 Current valve SEA21.1 or SEA41.1
- K... Safety chain, e.g. safety limit thermostat or overtemperature cut-out
- FF Super-fast fuse
- F... Over-current release

\*) Do not connect star point to ground or N

\*\*) If there is an asymmetric amperage loading of the phases and the resistive loading is symmetric, the connections must be exchanged

1) Can be used only when the voltage across the conductors is AC 230 V!



**Stromventil  
Current valve  
Vanne de courant  
Tyristordon  
Stroomregelaars**

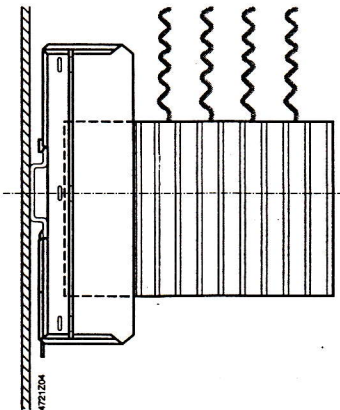
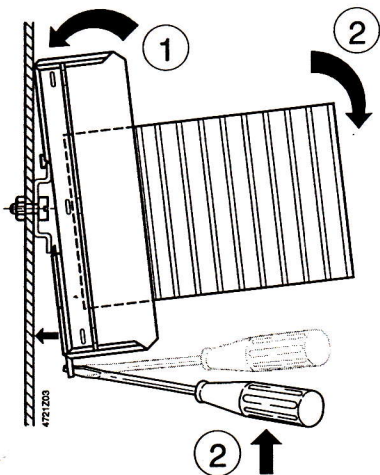
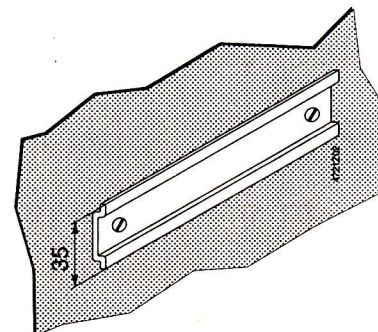
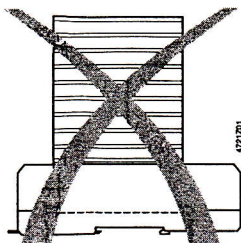
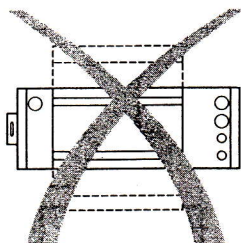
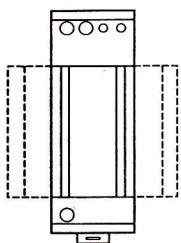
**Unità di comando-Tyristore  
Tyristori säädin  
Valvula de corriente  
Tyristor**

**SEA21.1  
SEA41.1**

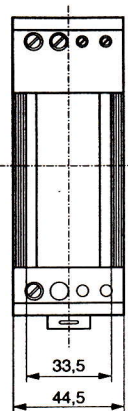
**de** Montageanleitung  
**en** Mounting instructions  
**fr** Instruction de montage

**sv** Monteringsanvisning  
**nl** Montage-aanwijzing  
**it** Istruzioni di montaggio

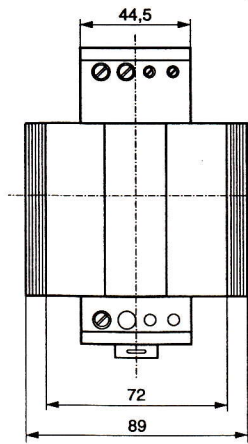
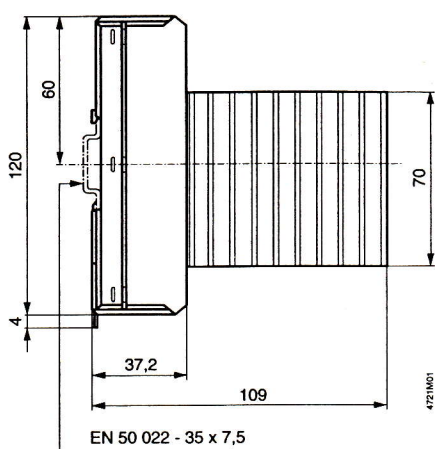
**fi** Asennusohje  
**es** Instrucciones de montaje  
**da** Monteringsvejledning



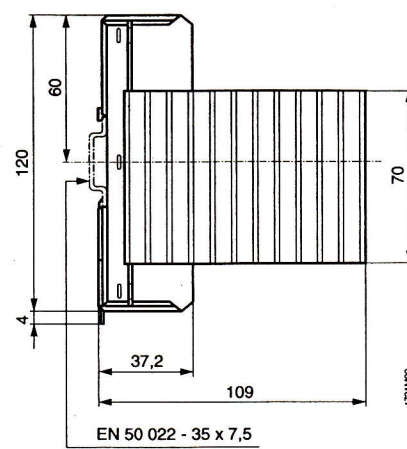
**Kühlkörper kann heiss werden. Nicht berühren!!**  
**Cooling fins may become hot. Do not touch!!**  
**Le radiateur peut chauffer. Ne pas toucher!!**  
**Kylflänsen kan bli het - vidrör ej!!**  
**Koellichaam kan warm worden. Nieet aanra-  
ken!!**  
**Le alette di raffreddamento possono surriscal-  
darsi. Non toccare!!**  
**Jäähdytysrivat voivat kuumentua. Älä koske!!**  
**Las aletas de disipación con temperatura alta  
¡No tocar!**  
**Køleribber kan blive varme. Må ikke berøres!!**



**SEA21.1**



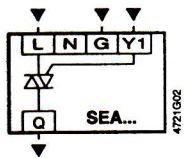
**SEA41.1**



Maße in mm  
Dimensions in mm  
Dimensions en mm

Måt i mm  
Dimensioni in mm  
Åfmetingen in mm

Mitat (mm)  
Medidas en mm  
Mål i mm



**deutsch**

- G Systempotential (SELV) AC 24 V
- Y1 Puls-Pause-Steuersignal AC 24 V
- L Lasteingang (Phase)
- Q Lastausgang
- N Neutralleiter

**english**

- G System potential (SELV) AC 24 V
- Y1 Pulse/pause control signal AC 24 V
- L Load input (phase)
- Q Load output
- N Neutral

**français**

- G Potentiel du système 24 V.
- Y1 Signal de commande impulsions/pauses 24 V.
- L Phase (pour la charge)
- Q Signal de commandede la charge
- N Neutre du réseau

**svenska**

- G Systempotential (SELV) AC 24 V
- Y1 Puls-paus-styrsignal AC 24 V
- L Lastingång (fas)
- Q Lastutgång
- N Nollledare

**nederlands**

- G systeempotential (SELV) AC 24 V
- Y1 puls-pauze-besturingssignaal AC 24 V
- L belastingsingang (phase)
- Q belastingsuitgang
- N netnul

**italiano**

- G fase del sistema (SELV) AC 24 V
- Y1 segnale di comando pausa/impulso AC 24 V
- L ingresso fase per utenza
- Q utenza resistenze elettriche
- N neutro del carico

**suomeksi**

- G järjestelmän jännite (SELV) 24 VAC
- Y1 pulssi/tauko-ohjausviesti 24 VAC
- L kuorman sisäänmeno (vaihe)
- Q kuorman ulostulo
- N verkkonolla

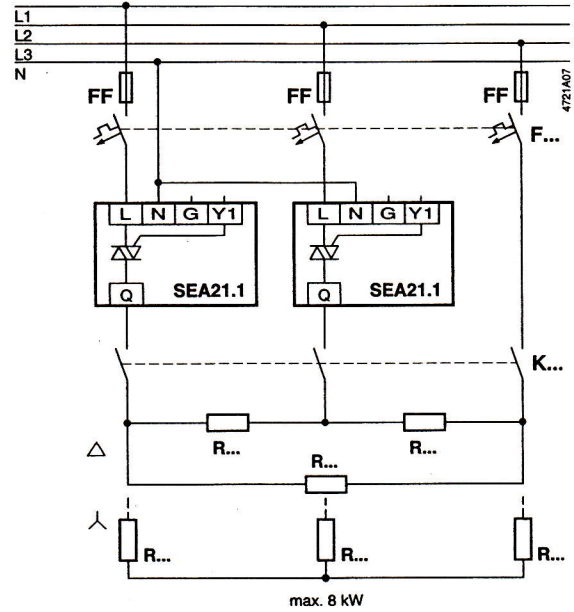
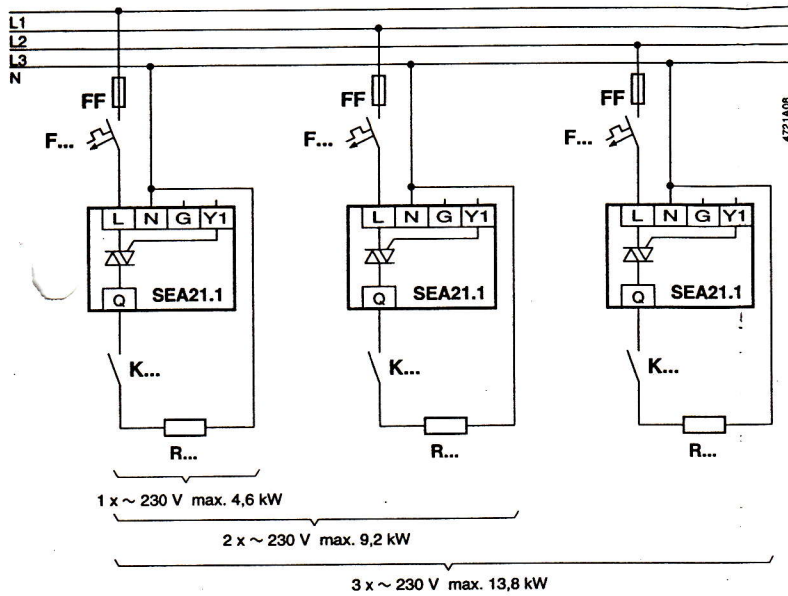
**español**

- G Potencial del sistema (SELV) 24 Vac
- Y1 Señal de mando pulso/pausa 24 Vac
- L Potential del sistema (fase)
- Q Salida de carga
- N Neutro

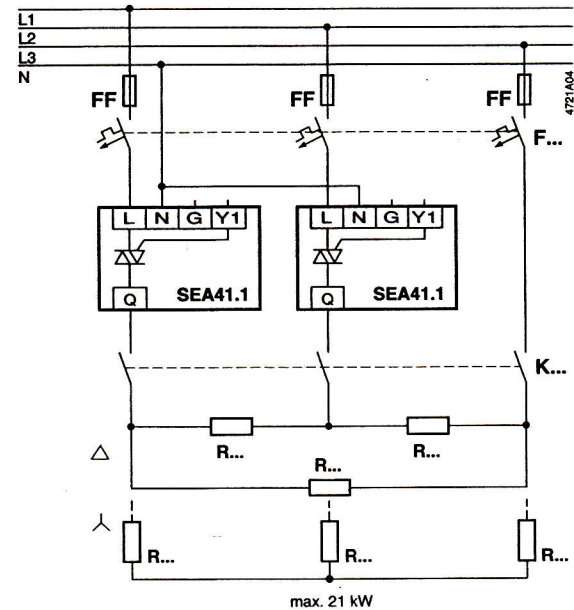
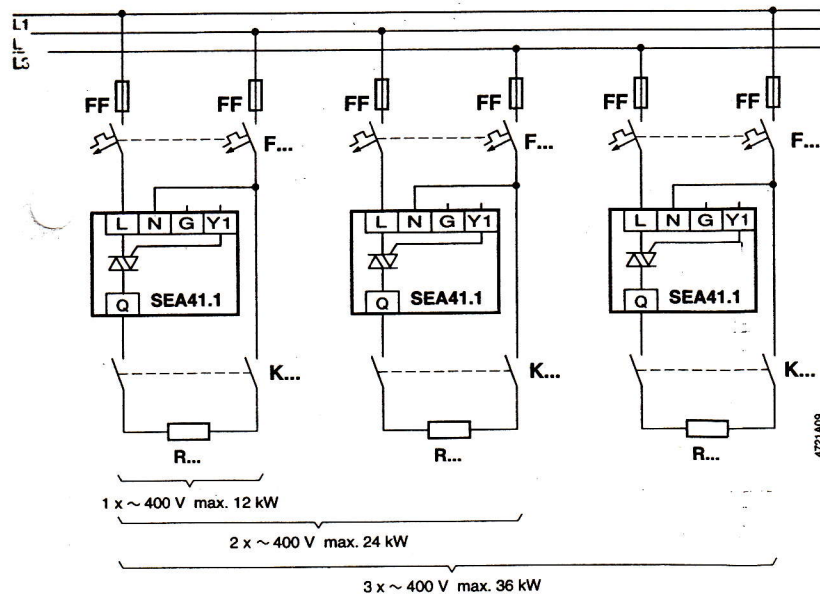
**dansk**

- G Systemfase (SELV) AC 24 V
- Y1 Puls-pause-styrsignal AC 24 V
- L Belastningsindgang (fase)
- Q Belastningsudgang
- N Nulleleder

**AC 230 V (L1 - N, L2 - N, L3 - N):**



**AC 400 V (L1 - L2, L1 - L3, L2 - L3):**



**deutsch**

- F... Überstromauslöser
- FF Superflinke Sicherung
- K... Sicherheitskette (z.B.: Sicherheitsthermostat, Übertemperatursicherung)
- R... Last

**english**

- F... Overcurrent trip
- FF Super-fast fuse
- K... Safety loop (e.g. safety limit thermostat, high limit cut-out)
- R... Load

**français**

- F... Disjoncteur de surintensité
- FF Fusible à fusion instantanée
- K... Dispositif de sécurité (p.ex. thermostat de sécurité, disjoncteur thermique)
- R... Charge

**svenska**

- F... Överströmsutlösare
- FF Supersnabb säkring
- K... Säkerhetskedja (t.ex. säkerhetsthermostat, temperaturvakt)
- R... Last

**nederlands**

- F... thermische schakelaar
- FF supersnelle smeltveiligheid
- K... veiligheidscircuit, bijv. veiligheids(maximaal) thermostaat
- R... belasting

**italiano**

- F... magnetotermico
- FF fusibile di tipo rapido
- K... sicurezza, termostato di massima, ecc.
- R... carico (resistenza)

**suomeksi**

- F... ylivirtasuojia
- FF erikoisnopea sulake
- K... varmuuspiiri (esim. ylikuumentemissuojia)
- R... kuorma

**español**

- F... Magnetotérmico
- FF Fusibles super-rápidos
- K... Dispositivo de seguridad (p.ej. termostato limitador de seguridad, corte por límite alto)
- R... Carga

**dansk**

- F... Overstrømsudløser
- FF Superflink sikring
- K... Sikkerhedsforanstaltninger (fx. sikkerhedsthermostat, overtemperatursikring etc.)
- R... Belastning