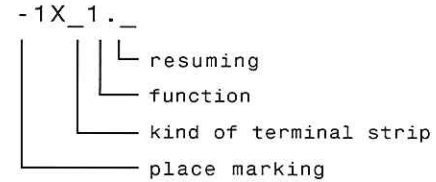


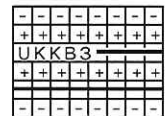
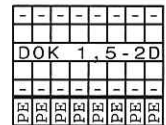
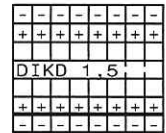


Carbolite Gero GmbH & Co. KG
 Hesselbachstr.15
 75242 Neuhausen · Germany
 Phone. +49(0)7234/9522-0
 Fax. +49(0)7234/9522-99
 E-Mail info@carbolite-gero.de
 Internet www.carbolite-gero.de

marking of terminal strips



multistory terminal



order data

customer: Verder Scientific Inc.
 plant: F70-750/13-3_REST-E 208/6-3_V03
 furnace type: F70-750/13-3
 controller: REST-E 208/6-3
 commission number: 20140943
 parts list number: 00039853

place marking:

- control cabinet
- 0 door of control cabinet
- 1 exit to terminal box
- >1 external

kind of terminal strip:

- serial terminal strip
- S terminal plug

function terminal

- 0 power supply
- 1 main circuit
- 2 control voltage 230V AC
- 3 control voltage < 48V AC/DC
- 4 analog signal
- 5 external voltage
- 6 interfaces
- 7 motors
- 8 safety circuits:
- 9 thermistor
- 10 measuring lines

resuming:

- .1 plc-input
- .2 plc-output

Technical Specifications

operating voltage: 208V/60Hz
 connecting power: 5KVA
 nominal current: 28A
 back-up fuse: 35A

marking of conductors

load circuit:	black
load current circuits befor main switch	short-circuit proof yellow
ground wire (PE)	green-yellow
neutral wire (N)	blue
control voltage AC	red
control voltage DC	dark blue
control voltage external	orange
measuring lines	white

desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		



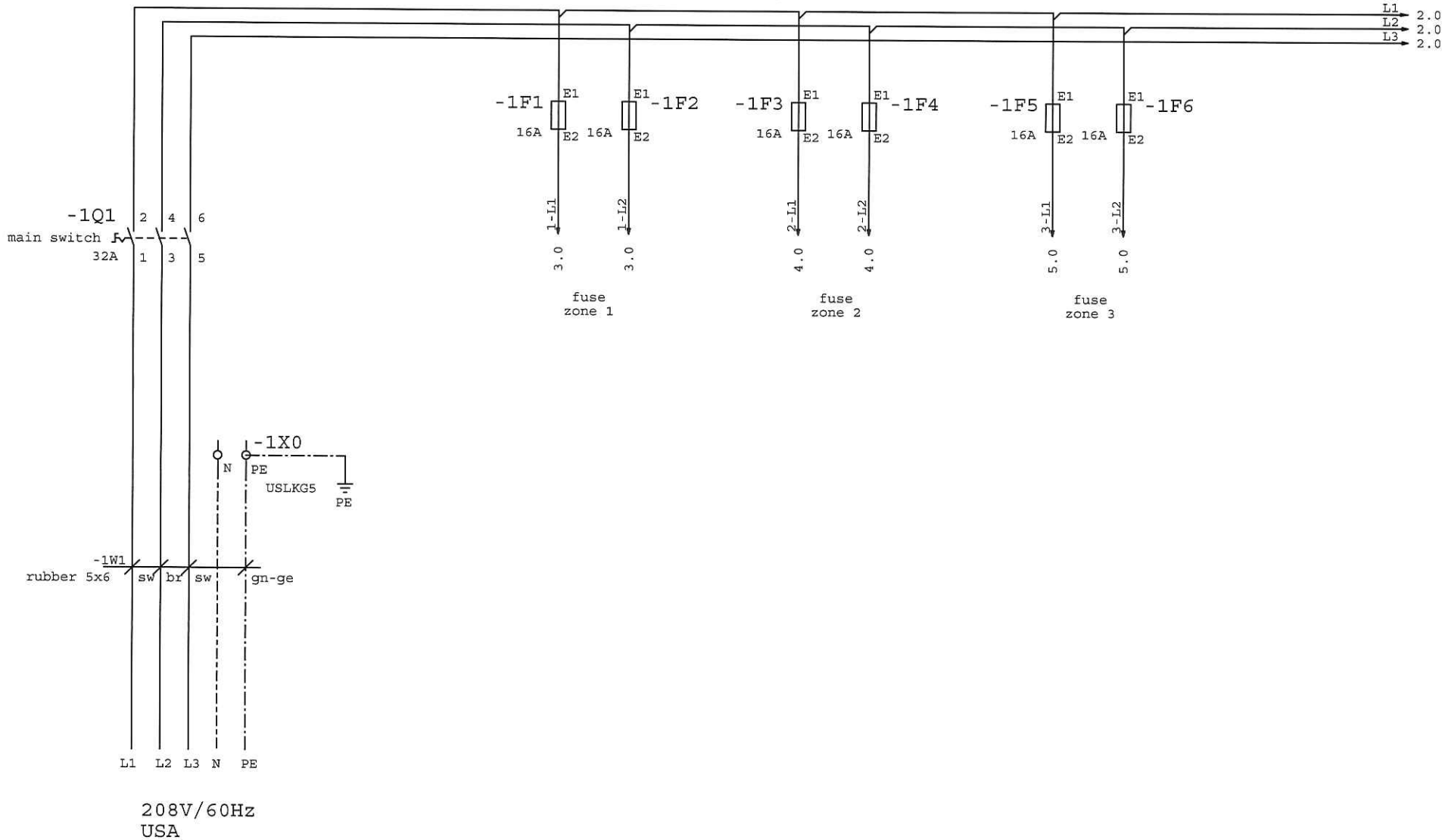
Hesselbachstr.15
 D-75242 Neuhausen
 Ph:07234/9522-0
 Fax:07234/9522-99

customer:
 Verder Scientific Inc.
 designation:
 cover site

order no.:
 20140943
 Norm: DIN
 =

furnace type: F70-750,
 controller type: REST-E 20
 cover site
 page: 1
 from: 1

0 1 2 3 4 5 6 7 8 9



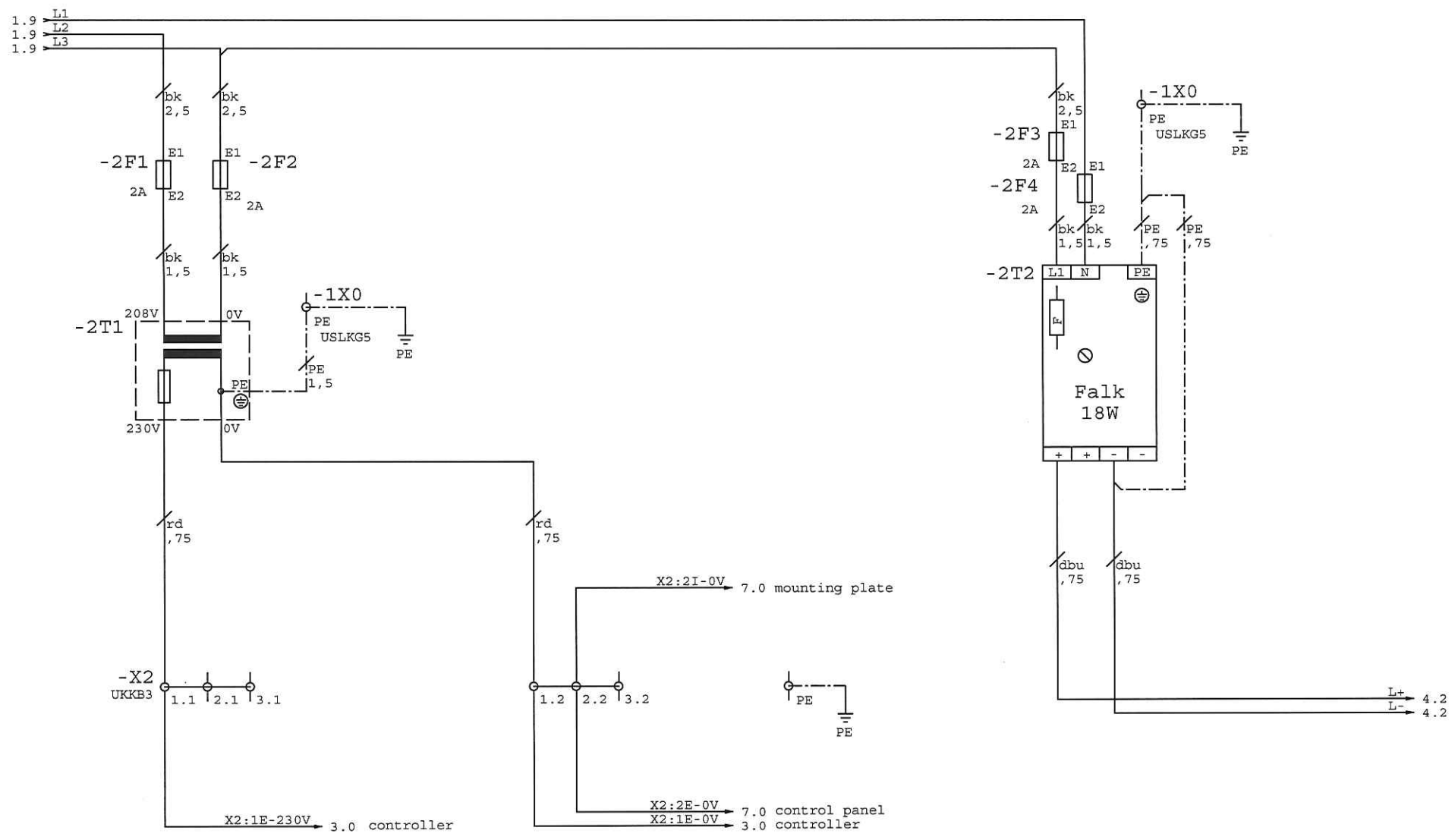
desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

CARBOLITE
IGERO 30-3000°C
Hesselbachstr. 15
D-75242 Neuhausen
Ph: 07234/9522-0
Fax: 07234/9522-99

customer:
Verder Scientific Inc.
designation:
power supply

order no.:
20140943
Norm: DIN
=

furnace type: F70-750/
controller type: REST-E 208
circuit diagram page: 1
+ from: 7



desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

CARBOLITE
IGERO 30-3000°C

Hesselbachstr.15
D-75242 Neuhausen
Ph: 07234/9522-0
Fax: 07234/9522-99

customer:
Verder Scientific Inc.

designation:
control voltage 230VAC

order no.:
20140943

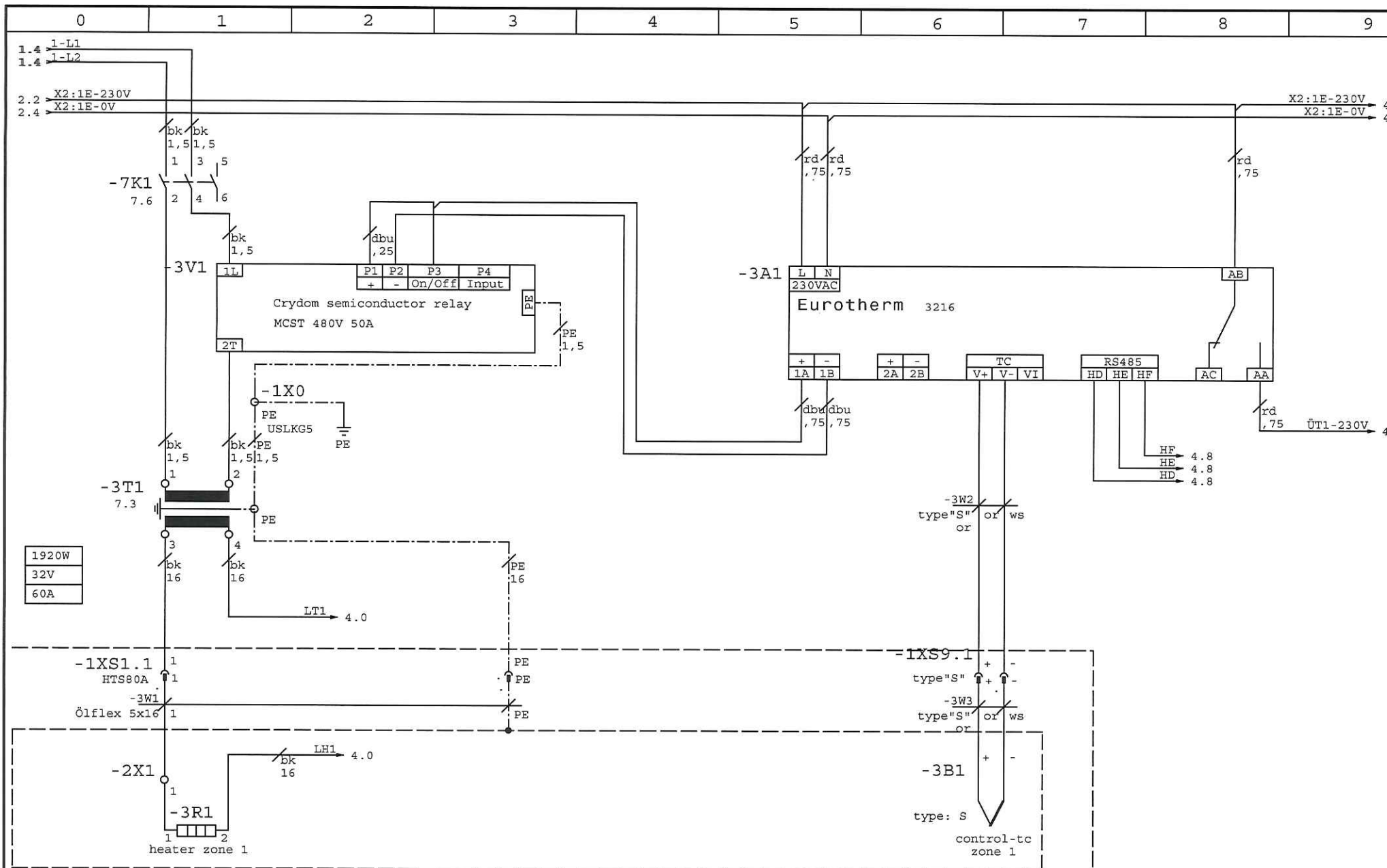
Norm: DIN
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furnace type: F70-750

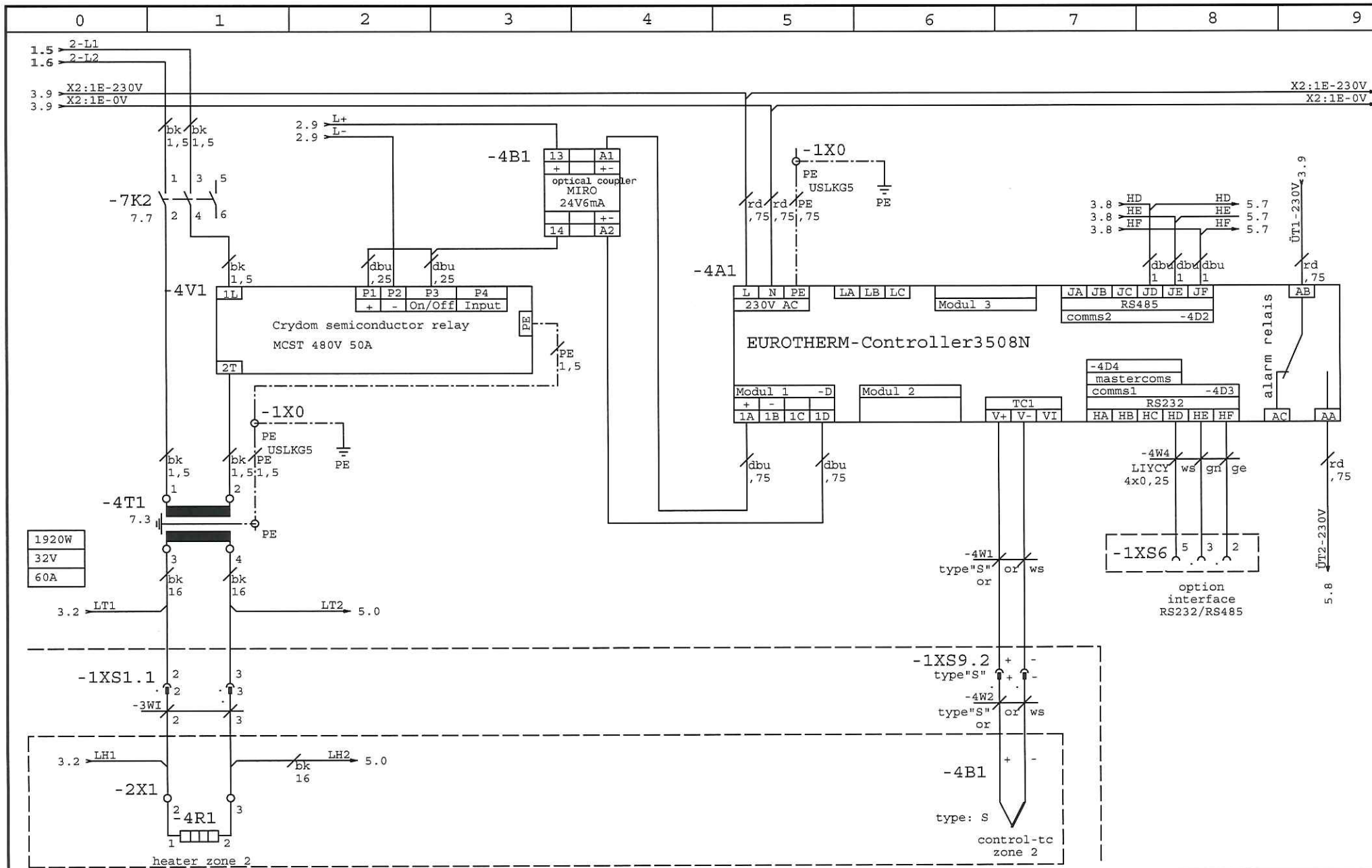
controller type: REST-E 20

circuit diagram
+

page:
from:



desig.	19.02.2015	Efferenn	CARBOLITE IGERO 30-3000°C Hesselbachstr.15 D-75242 Neuhausen Ph: 07234/9522-0 Fax: 07234/9522-99	customer:	order no.:	furnace type:		
rev.1				Verder Scientific Inc.	20140943	F70-750/		
rev.2				designation:	Norm: DIN	controller type:	REST-E 20	
rev.3				zone 1	=	circuit diagram	page:	3
						+	from:	7



desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

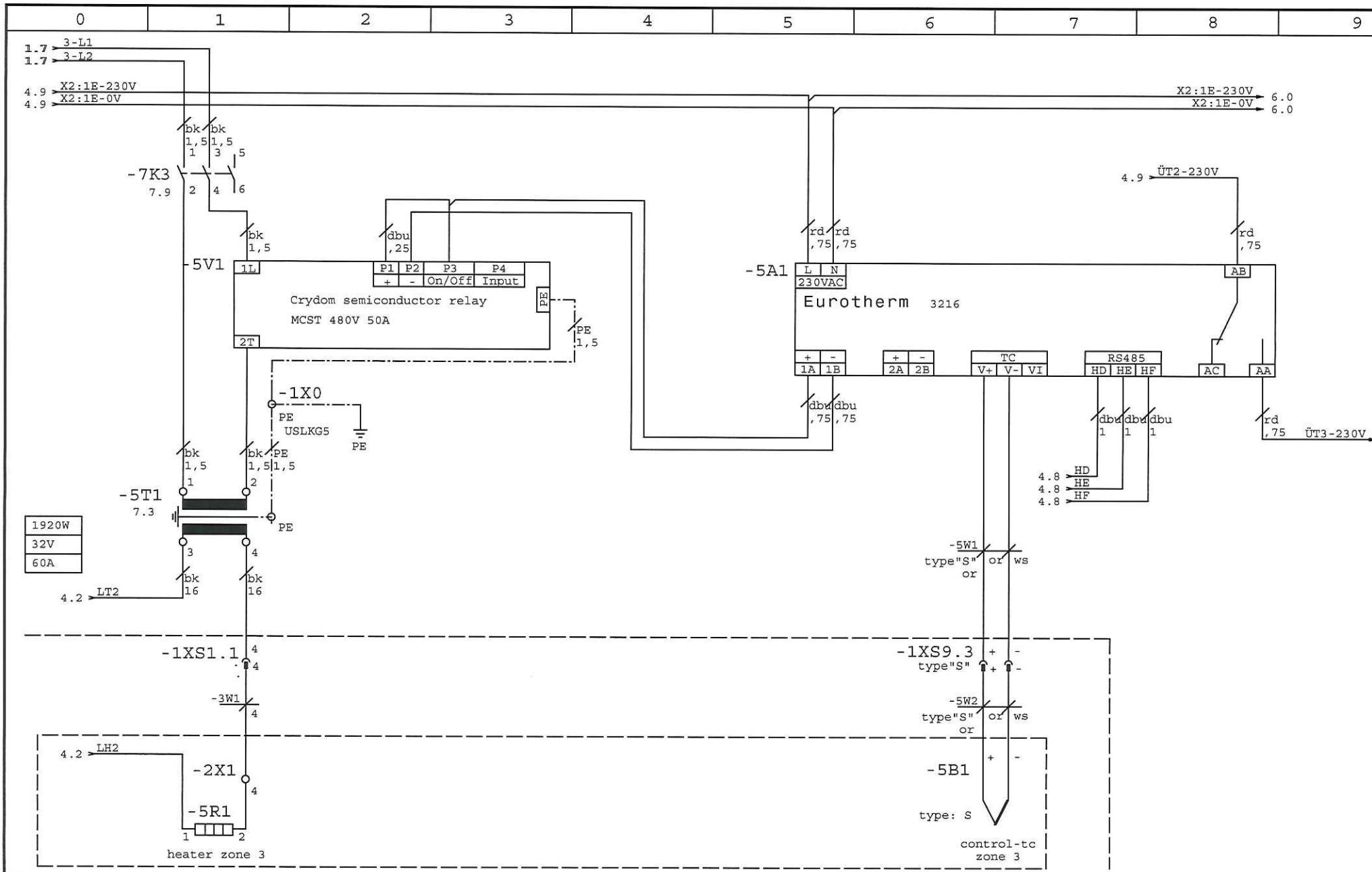
CARBOLITE
IGERO 30-3000°C

Hesselbachstr.15
D-75242 Neuhausen
Ph: 07234/9522-0
Fax: 07234/9522-99

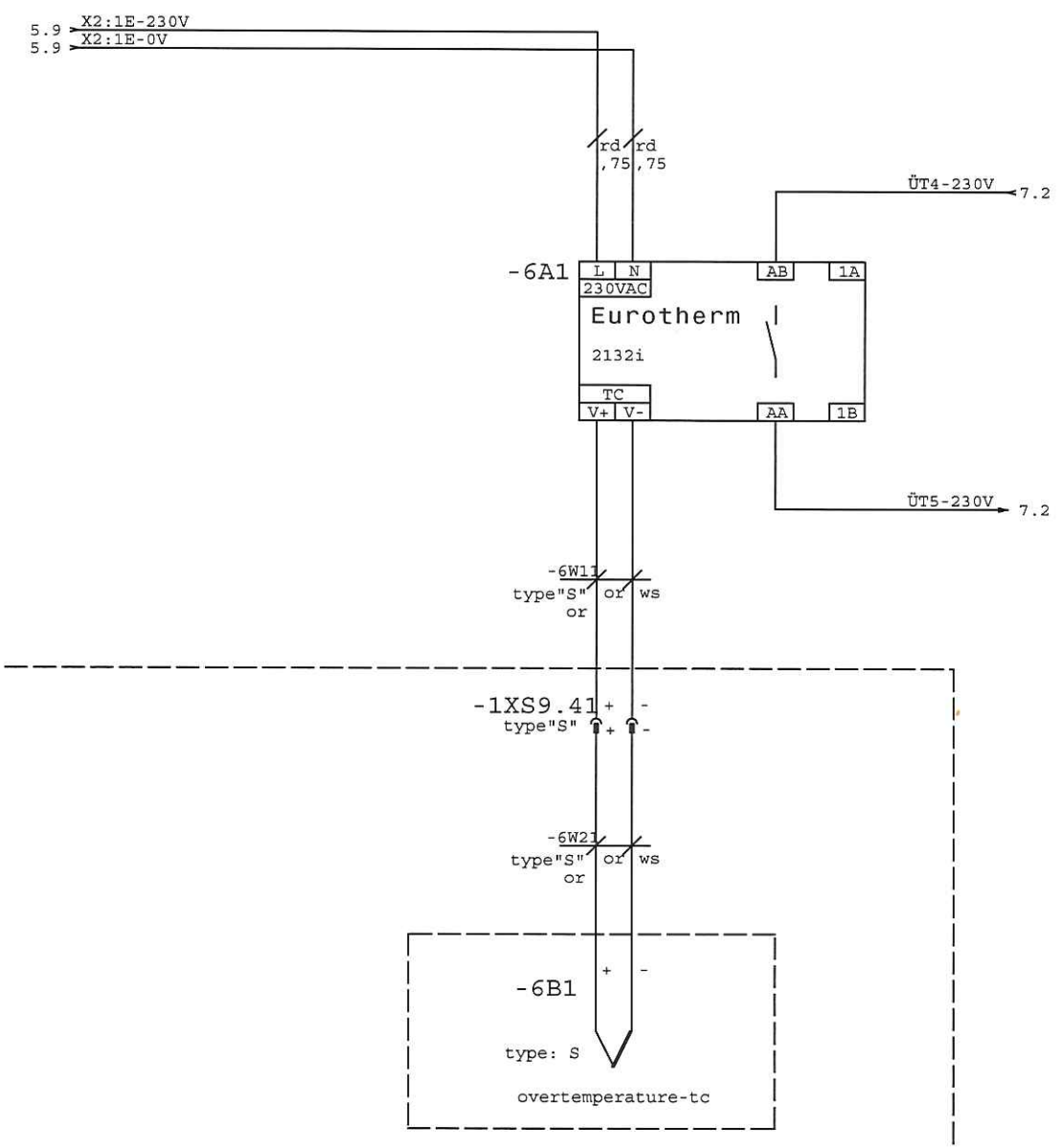
customer:
Verder Scientific Inc.
designation:
zone 2

order no.:
20140943
Norm: DIN
=

furnace type: F70-750
controller type: REST-E 20
circuit diagram page:
from:



desig.	19.02.2015	Efferenn	CARBOLITE IGERO 30-3000°C Hesselbachstr. 15 D-75242 Neuhausen Ph: 07234 / 9522-0 Fax: 07234 / 9522-99	customer:	order no.:	furnace type:	
rev.1				Verder Scientific Inc.	20140943	F70-750,	
rev.2				designation:	Norm: DIN	controller type: REST-E 20	
rev.3				zone 3	=	circuit diagram	page: 5
						+	from: 7



desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

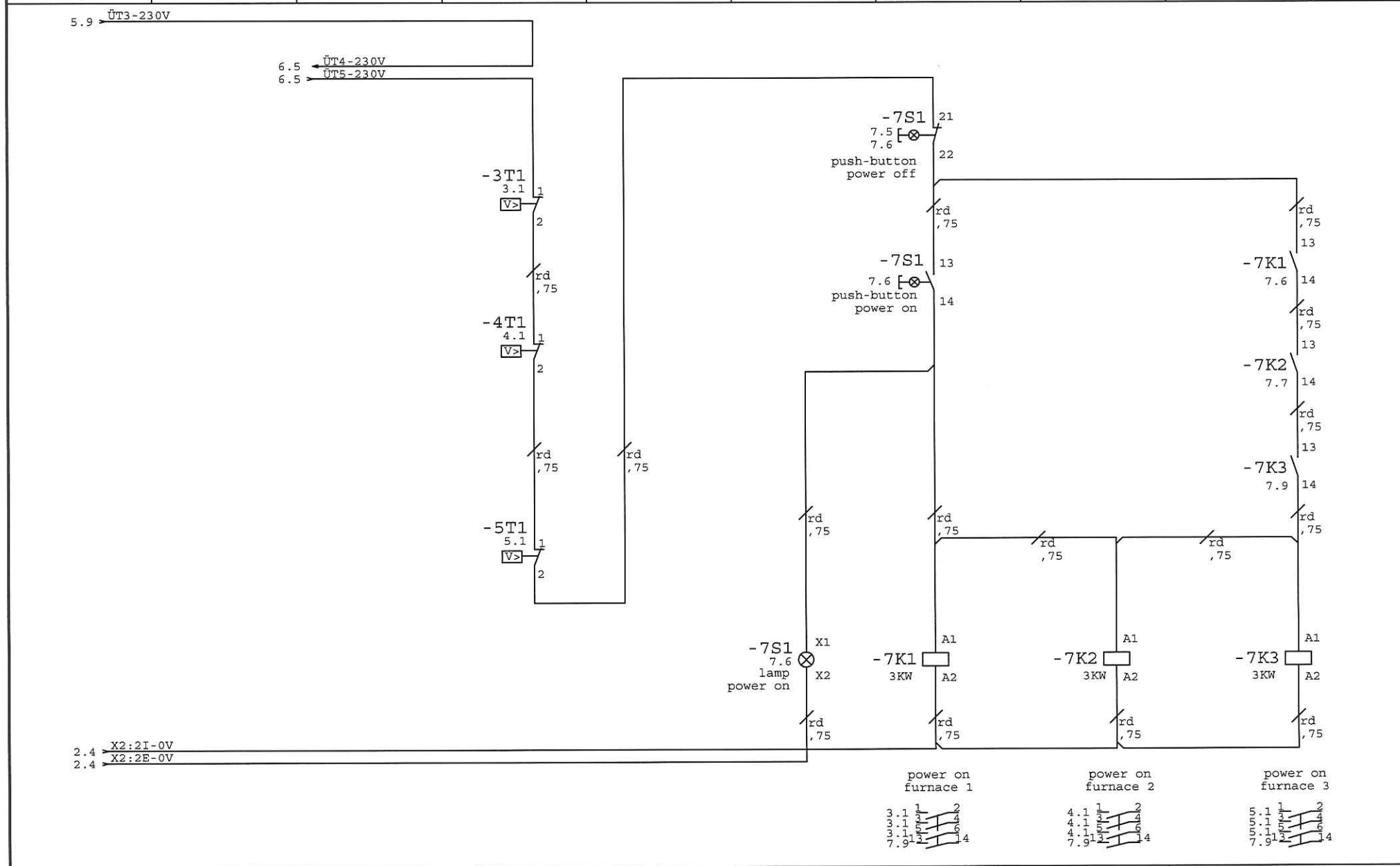
CARBOLITE
IGERO 30-3000°C

Hesselbachstr. 15
D-75242 Neuhausen
Ph: 07234 / 9522-0
Fax: 07234 / 9522-99

customer:	Verder Scientific Inc.
designation:	overtemperature

order no.:	20140943	furnace type:	F70-750
Norm:	DIN	controller type:	REST-E 20
=		circuit diagram	page: 6
		+	from: 7

0 1 2 3 4 5 6 7 8 9



desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

CARBOLITE
GERO 30-3000°C

Hesselbachstr.15
D-75242 Neuhausen
Ph: 07234/9522-0
Fax: 07234/9522-99

customer:
Verder Scientific Inc.

designation:
power on

order no.:
20140943

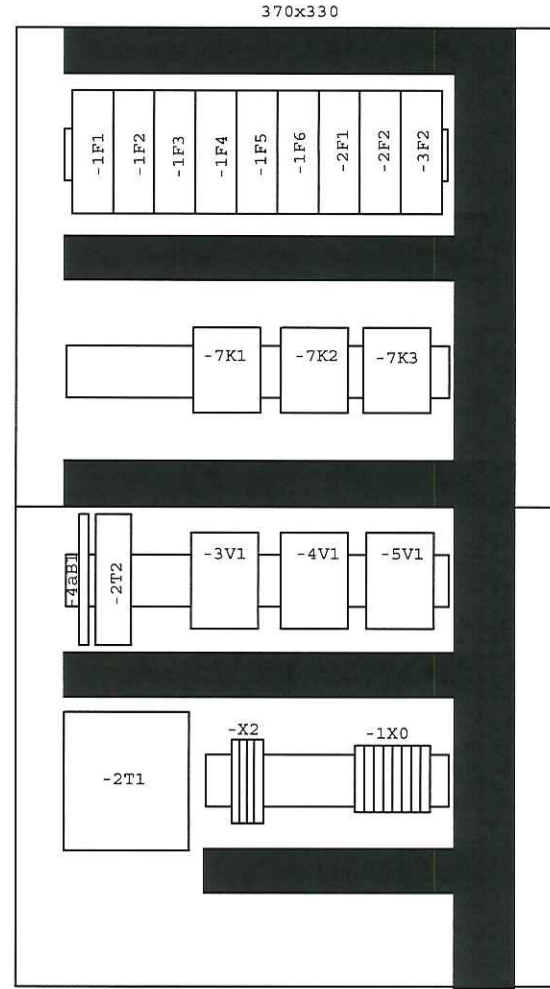
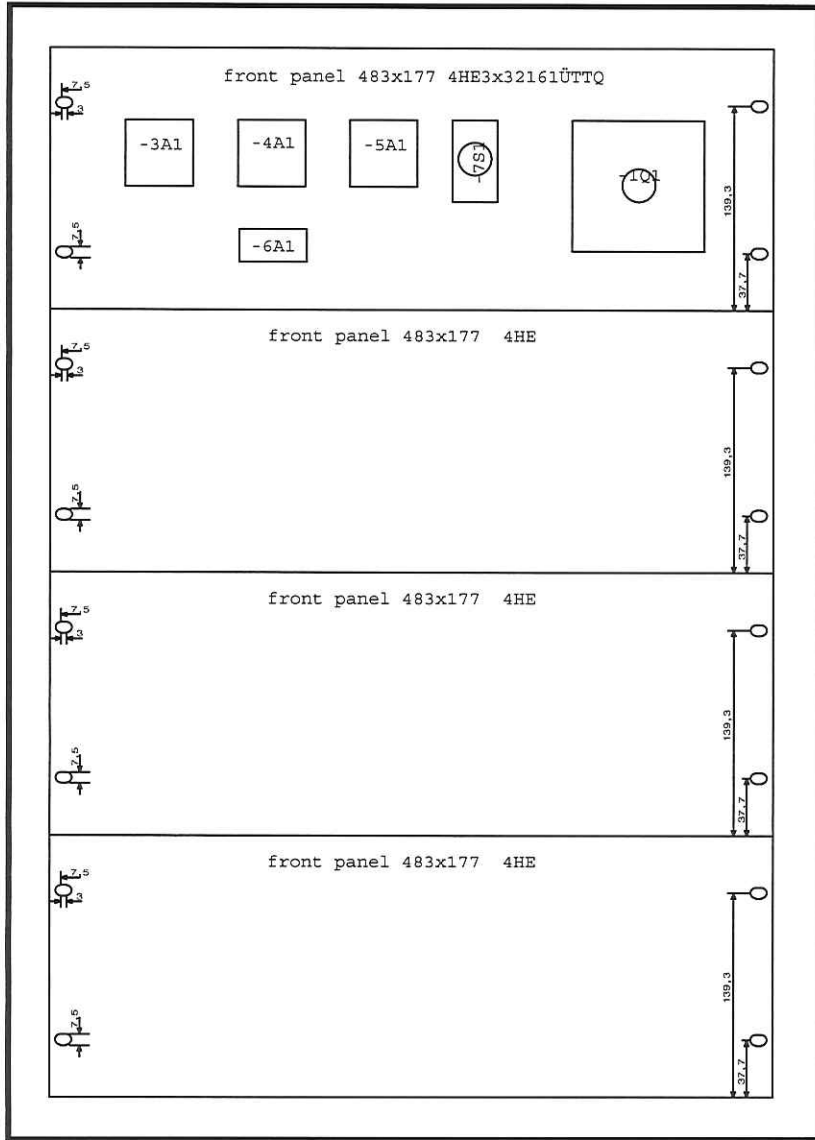
Norm: DIN
=

furnace type: F70-750

controller type: REST-E 2

circuit diagram
+


page:
from:



benchmark 1:

desig.	19.02.2015	Efferenn	Hesselbachstr. 15 D-75242 Neuhausen Ph: 07234 / 9522-0 Fax: 07234 / 9522-99	customer:	order no.:	furnace type:	
rev.1				Verder Scientific Inc.	20140943	F70-750.	
rev.2				designation:	Norm: DIN	circuit diagram	page:
rev.3				structure	=	+	from: 1

parts list								
ser. no.	group number	part number	numb.	name	supplier	producer	article number	reference name
1	100		3	Lasttrafo 1920VA Prim.208V/Sek.32V-60A +-10% 100%E			Trafo10	-3T1, -4T1, -5T1
2	100	00034525	1	3508 upgrade Modbus Mastercoms	Eurotherm	Eurotherm	3504UPG/XX/XX/XX/XX/XX/02	-4D4
3	100	00026552	1	interface RS485 for controler 3508	Eurotherm	Eurotherm	SUB24/EIA485//	-4D2
4	100	00026546	1	interface RS232 for controler 3508	Eurotherm	Eurotherm	SUB24/EIA232///	-4D3
5	100	00026256	2	interface RS485 for 3216	Eurotherm	Eurotherm	SUB32/4CL16	-3D1, -5D1
6	100	00026253	2	controller3216 1A/1B=logik,2A/2B=stetig	Eurotherm	Eurotherm	3216N/CC/VH/LD/XX/R/XXX/G/GE	-3A1, -5A1
7	100	00026259	1	controler 2132i 230VAC	Eurotherm	Eurotherm	2132i/AL/VH/GER///XX/FH/	-6A1
8	100	00034643	3	heat sink for semiconductor relais	Falk	CRYDOM	MKS260-65/AX	
9	100	00034644	3	Crydom clamp cover	Falk	CRYDOM	KS110B	
10	100	00026542	1	controller 3508N 10prog. 50seg.	Eurotherm	Eurotherm	3508N/CC/VH/1/XX/10/1/XXX/G/	-4A1
11	100	00026544	2	logic element for controler 24xx	Eurotherm	Eurotherm	SUB24/LO///	-D
12	100	00034641	3	semiconductor relay 480V 50A soft-start integriert	Falk	CRYDOM	MCST4850CS	-3V1, -4V1, -5V1
13	150	00035361	1	DC-power supply unit 230V sek.24V/18	Falk	Falk	DRA018-24A	-2T2
14	150	00039789	1	Steuertrafo Prim.208-550V/Sec.2x115V/160VA		Murrelektronik	Steuertrafo-0004	-2T1
15	250	00018098	3	power relay 3KW/230V	Siemens	Siemens	3RT1015-1AP01	-7K1, -7K2, -7K3
16	250	00016853	1	optical coupler 24VDC 6mA	MURR	MURR	52515	-4B1
17	250	00017965	1	main switch 25A 3-p. red-yellow	Siemens	Siemens	3LD2154-0TK53	-1Q1
18	250	00017964	1	main switch	Siemens	Siemens	3LD9286-1A	
19	250	00018192	1	push-button (double) rd/gn with lamp	Siemens	Siemens	3SB3101-8DC21	-7S1
20	250	00018185	1	switching element 1NO	Siemens	Siemens	3SB3400-0B	
21	250	00018186	1	switching element 1NC	Siemens	Siemens	3SB3400-0C	
22	250	00026224	1	bulb socket 230VAC white	Siemens	Siemens	3SB3400-1RE	
23	400	00017200	3	double terminal UKKB3	Ratz	Phönix	304192	-X2
24	400	00017162	7	terminal USLKG5	Ratz	Phönix	304054	-1X0
25	400	00017201	1	double terminal UKKB5 PE	Ratz	Phönix	3007123	-X2
26	450	00018386	1	thermocouple plug "S" green	TiTec	TiTec	00018386	-1XS9.3
27	450	00018388	4	thermocouple socket "S" green	TiTec	TiTec	00018388	-1XS9.1, -1XS9.2
								-1XS9.3
								-1XS9.41
28	450	00017031	1	terminal box 16B 35/80A 09300160301	Ratz	Harting	541329	-1XS1.1
29	450	00017039	1	socket 80/16A	Ratz	Harting	541253	
30	450	00019309	1	Sub-D socket 9pin	Ratz	Ratz	541801	-1XS6
31	450	00019308	1	mounting material for Sub-D	Conrad	Conrad	741370-93	
32	500	00020700	2	mounting panel for 19" table box 370x330	RYBU	RYBU	SAMPSEIT	-E, -E
33	500	00016149	4	front panel 483x177 4HE	PolyRack	PolyRack	11401300	-A, -A, -A, -A
34	500	00018619	1	roll box 19" 16HE	Schroff	Schroff	20230-46701002	-E

desig.	19.02.2015	Efferenn	 Hesselbachstr. 15 D-75242 Neuhausen Ph: 07234/9522-0 Fax: 07234/9522-99	customer:	Verder Scientific Inc. designation: parts list	order no.:	20140943 Norm: DIN =	furnace type:	F70-750
rev.1								controller type:	REST-E 20
rev.2								parts list	page:
rev.3								+	from:

parts list

ser. no.	group number	part number	numb.	name	supplier	producer	article number	reference name
35	500	00026583	1	cut for front panel 4HE3x32161ÜTTQ	SNZ	SNZ	4HE3x32161ÜTTQ	
36	550	00016824	930	splint TS35/15	Ratz	Rittal	splint	-E, -E, -E, -E
37	550	00016807	650	cable tunnel (wiring) P 60-40 (heigt 60)	EKV	Quintela	P60-40	-E
38	550	00016806	1211	cable tunnel (wiring) P 60-25 (heigt 60)	EKV	Quintela	P60-25	-E, -E, -E, -E
								-E
39	600	00016202	6	adapter 6A /E14	Ratz	Ratz	311092	
40	600	00016191	6	melting fuse Neozed 6A/E14	Ratz	Ratz	311002	
41	600	00016213	10	screw cap D001/ E14 Neozed	Schiele	Wöhner	31005	
42	600	00018322	10	fuse socket 1-p. E14 D01	Schiele	Wöhner	31286	-1F1, -1F2, -1F3
								-1F4, -1F5, -1F6
								-2F1, -2F2, -3F2
								-3F3
43	600	00016199	4	adapter 2A /E14	Ratz	Ratz	311090	
44	600	00016189	4	melting fuse Neozed 2A/E14	Ratz	Ratz	311000	
45	800	00017652	1	rubber cable 5G2,5	Ratz	Lapp	111583	-1W1
46	800	00016015	4	interconnector typ "S" with shild	M-E-K electric	M-E-K electric	Gero.260.011	-3W2, -4W1, -5W1
								-6W11
47	800	00018374	1	LIYCY 4x0,25	Ratz	Lapp	1501232	-4W4

desig.	19.02.2015	Efferenn
rev.1		
rev.2		
rev.3		

CARBOLITE
IGERO 30-3000°C

Hesselbachstr.15
D-75242 Neuhausen
Ph:07234/9522-0
Fax:07234/9522-99

customer:
Verder Scientific Inc.
designation:

order no.:
20140943
Norm: DIN
=

furnace type: F70-750
controller type: REST-E 2
parts list page:
+ from: