



## Differential relays

### **Delta D2**

2 module housing



### **Delta D4**

4 module housing



### **Delta 48**

48x48 mm flush mounting housing



### **Delta 72**

72x72 mm flush mounting housing



### **Delta 96**

96x96 mm flush mounting housing



### **Del**

closed-core toroid for differential relays



### **Del A**

open-core toroid for differential relays





Model	Delta D2-L	Delta D2-s	Delta D4-s
Codes	RD1A...	RD3A...	RD1B....
Ordering codes see page:	05	05	05
1 alarm	•	•	
2 or 1 alarm + pre-alarm 50%			•
19 ranges 0,03...30A	•	•	•
Intervention time (t) 0/0,15/0,25/0,5/1/2,5/5s	•	•	•
Electric block t=0 to 30mA	•	•	•
Display I Δn on LED bar		•	•
Filter for harmonics	•	•	•
1 relay SPDT output	•	•	
2 relay SPDT output			•
Relay status	field-selectable positive/negative	field-selectable positive/negative	field-selectable positive/negative
Test	manual/automatic permanent	manual/automatic permanent	manual/automatic permanent
Reset	manual or automatic (3 restart, 1 every 60s)	manual or automatic (3 restart, 1 every 60s)	manual
A.C. auxiliary supply	24 - 48 - 115 - 230 - 240 - 400Va.c.	24 - 48 - 115 - 230 - 240 - 400Va.c.	24 - 48 - 115 - 230 - 240 - 400Va.c.
D.C. auxiliary supply	20...150Vd.c.	20...150Vd.c.	20...150 - 10...36Vd.c.
2 wire Del - DelA connections	•	•	•
Dimensions	2 module DIN	2 module DIN	4 module DIN
Technical note	NT544	NT597	NT647
Price			
Extra price d.c. auxiliary supply and 48Va.c.	•	•	•
Extra price auxiliary supply 24Va.c.	•	•	•



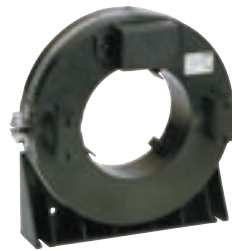
Model	Delta 48-s	Delta 72-s		Delta 72-h	Delta 96-s
Codes	RD1D...	RD1EP...	RD1E2...	RD3E...	RD1G2...
Ordering codes see page:	05	05	05	05	06
1 alarm	•				
1 alarm + 1 pre-alarm 50%		•			
2 or 1 alarm + pre-alarm 50%			•	•	•
19 ranges 0,03...30A	•	•	•	•	•
Intervention time (t) 0/0,15/0,25/0,5/1/2,5/5s	•	•	•	•	•
Electric block t=0 to 30mA	•	•	•	•	•
Display I Δn on LED bar		•	•		•
Display I Δn on LED display				•	
Filter for harmonics	•	•	•	•	•
1 relay SPDT output	•				
1 relay SPDT+SPST output				•	
2 relay SPDT output		•	•		•
Relay status	field-selectable positive/negative	field-selectable positive/negative	field-selectable positive/negative	field-selectable positive/negative	field-selectable positive/negative
Test	manual/automatic permanent	manual/automatic permanent	manual/automatic permanent	manual/automatic permanent	manual/automatic permanent
Reset	manual or automatic (3 restart, attempts 1 every 60s)	manual or automatic (3 restart, attempts 1 every 60s)	manual	manual	manual
A.C. auxiliary supply	24 - 48 -115 - 230 - 240 - 400Va.c.	24 - 48 -115 - 230 - 240 - 400Va.c.	24 - 48 -115 - 230 - 240 - 400Va.c.	24 - 48 -115 - 230 - 240 - 400Va.c.	24 - 48 -115 - 230 - 240 - 400Va.c.
D.C. auxiliary supply	20...150Vd.c.	20...150Vd.c.	20...150Vd.c.	20...150Vd.c.	20...150Vd.c.
2 wire Del - DeIA connections	•	•	•	•	•
Dimensions	48x48x102mm	72x72x75mm	72x72x75mm	72x72x78,2mm	96x96x92mm
Technical note	NT556	NT552	NT692	NT649	NT691
<b>Price</b>					
Extra price d.c. auxiliary supply and 48Va.c.	•	•	•	•	•
Extra price auxiliary supply 24Va.c.	•	•	•	•	•



# Toroids for differential relays



Model	Del						
Codes	TDGA2	TDGB2	TDGH2	TDGC2	TDGD2	TDGE2	TDGF2
Ordering codes see page:	06	06	06	06	06	06	06
Close-core toroids Ø	28mm	35mm	60mm	80mm	110mm	140mm	210mm
Lowest current I Δn	0,03A	0,03A	0,03A	0,03A	0,1A	0,3A	0,3A
Technical note	NT641						
Price							



Model	Del A		Del A
Codes	TDAA2	TDAB2	TDAC2
Ordering codes see page:	06	06	06
Open-core toroids Ø	110mm	150mm	300mm
Lowest current I Δn	0,5A	0,5A	1A
Technical note	NT641		
Price			

**Delta D2-L****1 threshold differential relay****2 module**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD1AF11B	24Va.c.	1 alarm	manual or automatic	
RD1AF12B	115Va.c.	1 alarm	manual or automatic	•
RD1AF13B	230Va.c.	1 alarm	manual or automatic	•
RD1AF14B	240Va.c.	1 alarm	manual or automatic	
RD1AF15B	400Va.c.	1 alarm	manual or automatic	
RD1AF1HB	20...150Vd.c. + 48Va.c.	1 alarm	manual or automatic	•

**Delta D2-s****1 threshold differential relay****2 module**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD3AF11B	24Va.c.	1 alarm	manual or automatic	
RD3AF12B	115Va.c.	1 alarm	manual or automatic	
RD3AF13B	230Va.c.	1 alarm	manual or automatic	•
RD3AF14B	240Va.c.	1 alarm	manual or automatic	
RD3AF15B	400Va.c.	1 alarm	manual or automatic	
RD3AF1HB	20...150Vd.c. + 48Va.c.	1 alarm	manual or automatic	

**Delta D4-s****2 threshold differential relay****4 module**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD1B211B	24Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1B212B	115Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1B213B	230Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•
RD1B214B	240Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1B215B	400Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1B21DB	10...36Vd.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1B21HB	20...150Vd.c. + 48Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	

**Delta 48-s****1 threshold differential relay****48x48mm**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD1DF11B	24Va.c.	1 alarm	manual or automatic	
RD1DF12B	115Va.c.	1 alarm	manual or automatic	•
RD1DF13B	230Va.c.	1 alarm	manual or automatic	•
RD1DF14B	240Va.c.	1 alarm	manual or automatic	
RD1DF15B	400Va.c.	1 alarm	manual or automatic	
RD1DF1HB	20...150Vd.c. + 48Va.c.	1 alarm	manual or automatic	•

**Delta 72-h****2 threshold differential relay****72x72mm**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD3E211B	24Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD3E212B	115Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD3E217B	230 - 240Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•
RD3E218B	400 - 415Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD3E21HB	20...150Vd.c. + 48Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•

**Delta 72-s****2 threshold differential relay****72x72mm**

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD1EP11B	24Va.c.	1 alarm + 1 pre-alarm	manual and automatic	
RD1EP12B	115Va.c.	1 alarm + 1 pre-alarm	manual and automatic	•
RD1EP13B	230Va.c.	1 alarm + 1 pre-alarm	manual and automatic	•
RD1EP14B	240Va.c.	1 alarm + 1 pre-alarm	manual and automatic	
RD1EP15B	400Va.c.	1 alarm + 1 pre-alarm	manual and automatic	
RD1EP1HB	20...150Vd.c. + 48Va.c.	1 alarm + 1 pre-alarm	manual and automatic	•
RD1E211B	24Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1E212B	115Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1A213B	230Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1A214B	240Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1A215B	400Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD1A21HB	20...150Vd.c. + 48Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	

## Delta 96-s

### 2 threshold differential relay

96x96mm

Ordering code	Auxiliary supply	Relay	Reset	Stock
RD 1 G 2 1 1 B	24Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD 1 G 2 1 2 B	115Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•
RD 1 G 2 1 3 B	230Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•
RD 1 G 2 1 4 B	240Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD 1 G 2 1 5 B	400Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	
RD 1 G 2 1 H B	20...150Vd.c. + 48Va.c.	1 alarm + 1 pre-alarm or 2 alarms	manual	•

## Del A

### Open-core toroid for differential relay

Ordering code	Inside diameter	Stock
TDAA 2	110mm	•
TDAB 2	150mm	•
TDAC 2	300mm	•

## Del

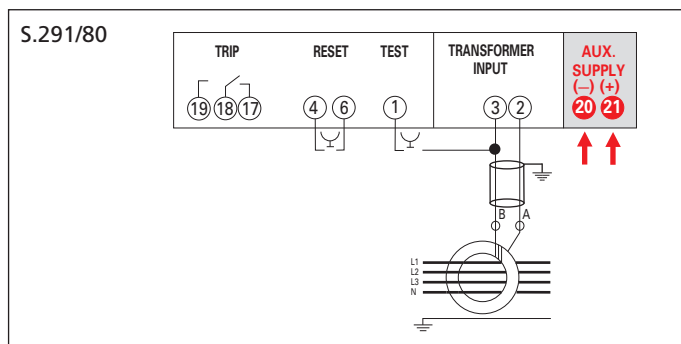
### Closed-core toroid for differential relay

Ordering code	Inside diameter	Stock
TDGA 2	28mm	•
TDGB 2	35mm	•
TDGH 2	60mm	•
TDGC 2	80mm	•
TDGD 2	110mm	•
TDGE 2	140mm	•
TDGF 2	210mm	•

## WIRING CONNECTIONS

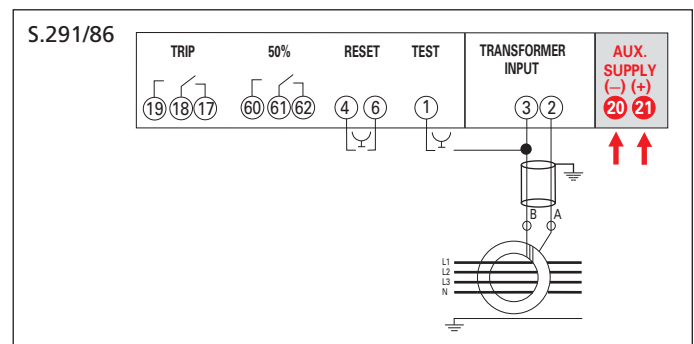
### Delta D2-L / Delta D2-s / Delta 48-S

RD1A... / RD3A... / RD1D...



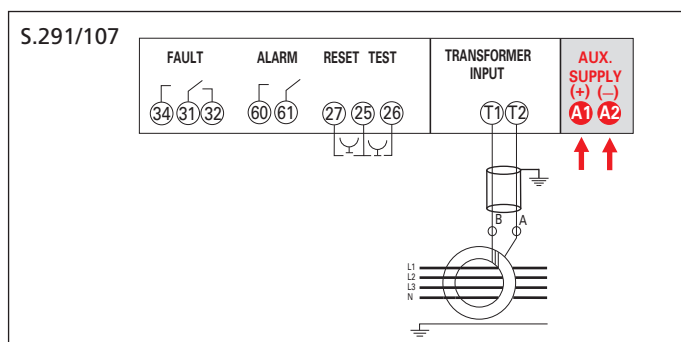
### Delta D4-s / Delta 72-s / Delta 96-s

RD1B... / RD1E... / RD1G...

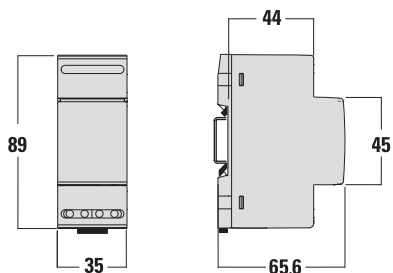


## Delta 72-h

RD3E...

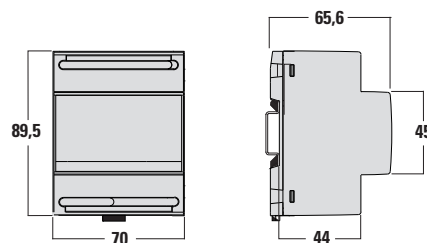


**RD1A... / RD3A...**



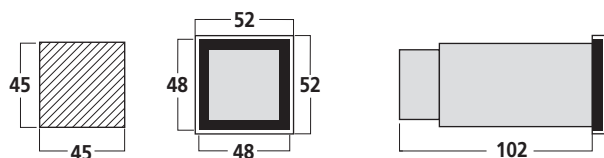
2 Module

**RD1B...**



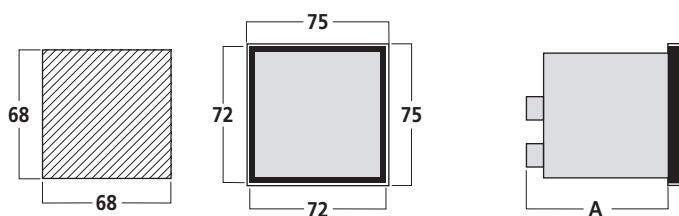
4 Module

**RD1D...**



48x48 flush mounting

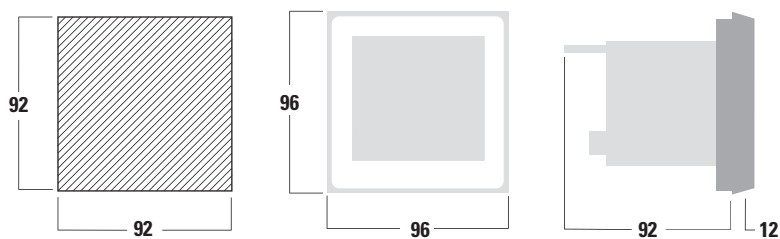
**RD1E... / RD3E...**



72x72 flush mounting

A = 75 RD1E...  
A = 78,2 RD3E...

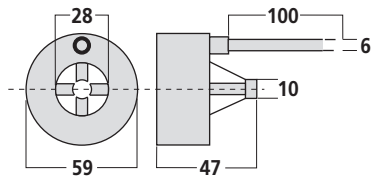
**RD1G...**



96x96 flush mounting

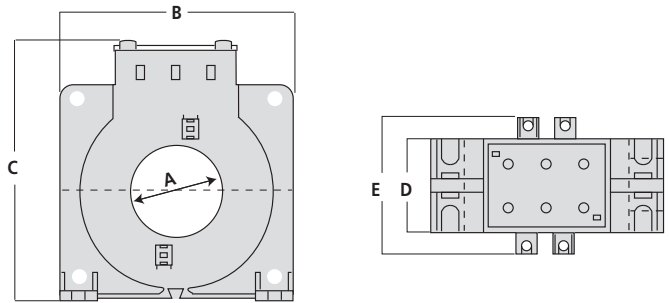
**Del**

**TDGA2**



Weight 150g

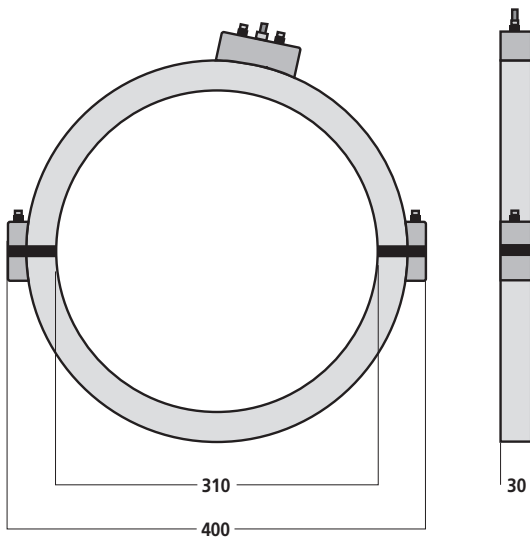
**TDG.2**



Model	A	B	C	D	E	Weight
TDGB2	35	92	113	36	56	250g
TDGH2	60	105	138	36	56	300g
TDGC2	80	125	160	36	56	400g
TDGD2	110	165	198	36	56	560g
TDGE2	140	200	234	36	56	750g
TDGF2	210	290	323	44	64	1280g

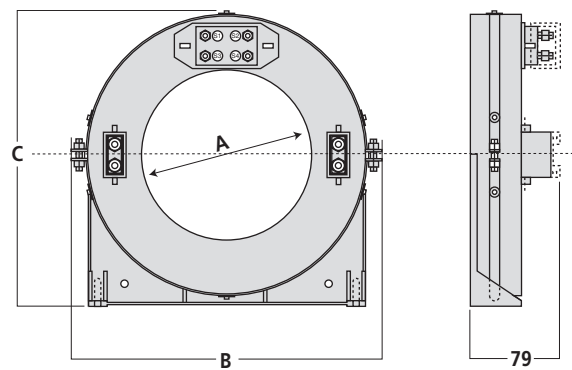
**Del A**

**TDAC2**



Weight 3,8kg

**TDAA2 - TDAB2**



Model	A	B	C	Weight
TDAA2	110	235	219	2,35Kg
TDAB2	150	275	259	2,5Kg

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