

700 Series

CURRENT RELAY

VOLTAGE RELAY

- *Proven Digital Technology (PROCOM Series)*
- *Robust withdrawable case for flush mounting or mounted in a 19" C.E.E. rack*
- *Operating on RMS value*
- *Programmable dependent or independent time curves*
- *High power output units*
- *Serial communications*
- *Interchangeability with C.E.E. analogue technology relays*



The ultimate in power network supervision

GENERAL CHARACTERISTICS

- Robust R2 withdrawable case with short-circuiters on the current inputs - bases rear or front connection
- 2 high power output units with 2 output contacts each + 1 “watchdog” relay
- Programming with the assistance of 4 keys and an illuminated digital display
- Permanent display of the supervised quantity (in primary value)
On tripping, flashing display of the quantity causing the trip (until reset)
- Ease of use: wide setting range of thresholds and time delays
Programmable choice of type of time curve
- Compatible with our PROSATIN Supervision-Control systems
Communication by current loop 0-20 mA - Modbus - Operating speed 1 200 - 2 400 or 4 800 Bauds
Data available on communication network:
Permanently:
 - Primary value of each input and their mean value (3 phases versions)
 - Setting valuesUnder fault conditions:
 - Phase concerned and threshold reached
- Wide range of operation between temperatures - 10° to + 55°C
- Auxiliary voltage: dc or ac
48 V - 60 V - 110 V - 125 V
for other values please consult us
Burden: 6 watts at 48 volts
- Complies with Standard IEC and CE marking according to EN 50081-2 and 50082-2
Susceptibility and Emission
- Insulation:
 - . Dielectric withstand: 2 KV - 50 Hz - 1 min
 - . Insulation resistance: > 10 000 MΩ at 500 volts
 - . Impulse voltage withstand: 5 kV - 1.2/50 μsec

RMS 700

- RMS711 single phase or zero sequence
- RMS761 three phases
- RMS771 two phases + zero sequence
- RMS791* three phases + zero sequence

- Characteristic quantity: phases inputs: RMS current
zero sequence inputs: fundamental RMS current
- Rated Current IN = 1A or 5A
 - Burden on phases input <0,2VA at IN
 - on zero sequence input <1VA at IN
 - Recommended current transformers, including a loop resistance of 0,1Ω (5A) ou 2Ω (1A) 5VA 5 P20

	Low setting	High setting
Phases Inputs	0.5 to 4IN (step 0,1IN)	1 to 25 IN (step 0.5IN)
Zero sequence Inputs	0.05 to 0.4IN (step 0,01IN)	0.1 to 2.5IN (step 0.5IN)
	On toroidal (100/1)	
	1 to 8A (step 0.5A) or 5 to 40A (step 1A)	5 to 40A (step 1A) (other possibilities) or 10 to 250A (step 5A)

- Operating Values
 - independant time 100 % of setting
 - dependant time 110 % of setting
- Drop-off > 95 %
- Operating Curves (low setting) according to IEC255-3: independent or dependent time:

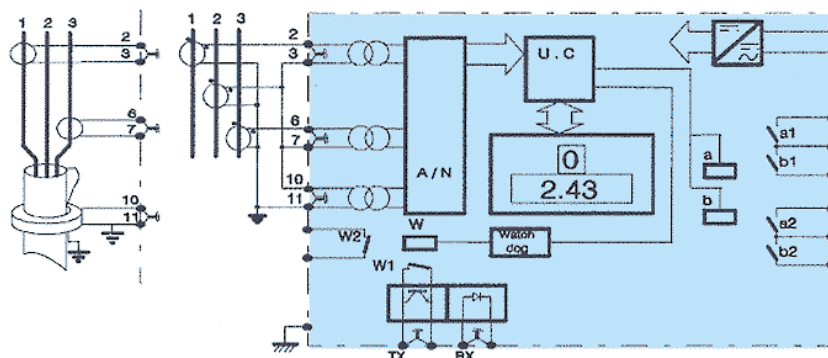
$$t(s) = \frac{T}{(I)^{\alpha}} \times \text{set value}$$

$\frac{1}{(I)^{\alpha}} - 1$ inverse time $\alpha : 0.02$ T: 0.0466
 very inverse time $\alpha : 1$ T: 9
 extremely inverse time $\alpha : 2$ T: 99

- Time setting Range
 - Low setting - independant time 0.1 to 30s (step 0,05s up to 3s and 0,5s upper)
 - dependant time 0.1 to 3s at 10 time the setting (step 0,5s)
 - High setting: independant time 0.1 to 3s or instantaneous (step 0,05s)
- Overshoot \approx 30ms

- Accuracy
 - Phases Setting 5% of the set value or 0.5% of IN
 - Zero Sequence Setting 0.5% of the set value or 0.5% de IN
- Time
 - independent class 5% or \pm 30ms
 - dependent class 5% or 30msec for inverse or very inverse curves
class 7.5% or 30msec for extremely inverse curves

- User allocation of the outputs units



Connection diagram RMS771

* Case type R3

TMS 700

- TMS711 single phase: 2 maxi or mini settings
- TMS761 three phases: 2 maxi or mini settings
- TMS714 zero sequence single phase

- Characteristic Quantity: RMS fundamental value
- Rated voltage: (identical to V.T.s secondary nominal voltage)

TMS 711	{	100/√3 - 110/√3 - 120/√3 volts
TMS 761		100 - 110 - 120 volts
		230 volts
TMS 714	{	100/3 - 110/3 - 120/3 volts
		100/√3 - 110/√3 - 120/√3 volts
- Rated frequency: 50Hz or 60Hz
- Primary rated voltage:

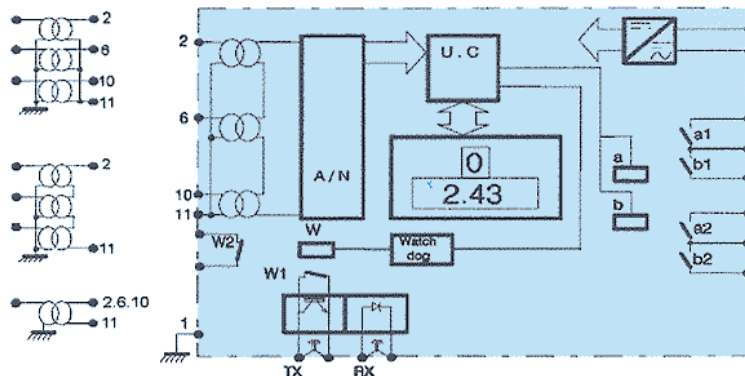
TMS711-761	TMS714
100V to 240Kvolts	100/√3 V to 240/√3 KV
- Setting Range:

15 to 150% of VN (step 1%)	3 to 60% of VN (step 1%)
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- Each setting can be selected in Max. or mini function
- Operating Curves:
 - . Independant Time - Maxi and mini: 50msec to 99sec step 10msec to 3sec
step 0.5sec upper
 - . Dependant Time
 - function Max: extremely inverse 0.1 to 3sec to 2 Vsetting step 0.05sec
 - function mini: inverse 0.1 to 3sec to 0,2 Vsetting step 0.05sec
- Drop-off:
 - . function mini: 102% < V < 104%
 - . function maxi: 96% < V < 98%
- Accuracy:
 - Operatin levels..... 1% of VN in frequency range FN ± 5%
 - Time delays
 - independant time..... 2% or ±30ms
 - dependant time 5% or ±30msec
- Continous withstand:

TMS 711 - TMS 761	1.9 Vn
TMS 714	3 Vn

• Inhibition : (TMS 761)

The TMS761 can be programmed to inhibit the operation of the minimum settings on simultaneous disappearing of the 3 phases inputs (<10 %)



Connection diagram TMS714

RMS700

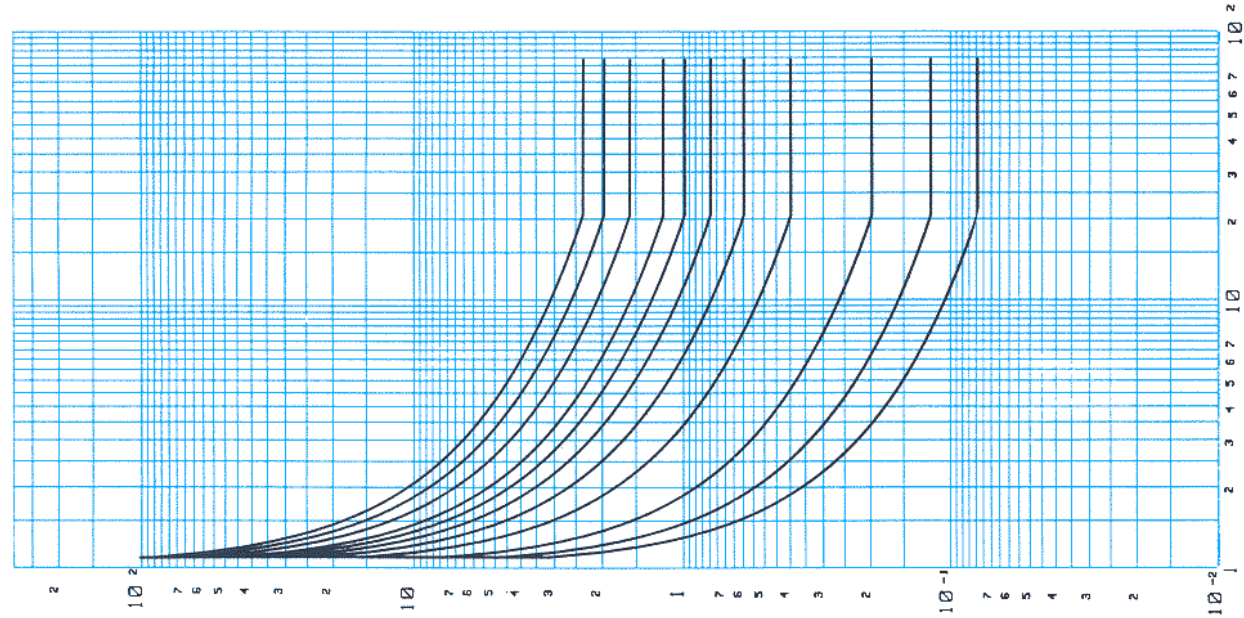


Fig. 1 - Inverse time curves
- IEC 255-4

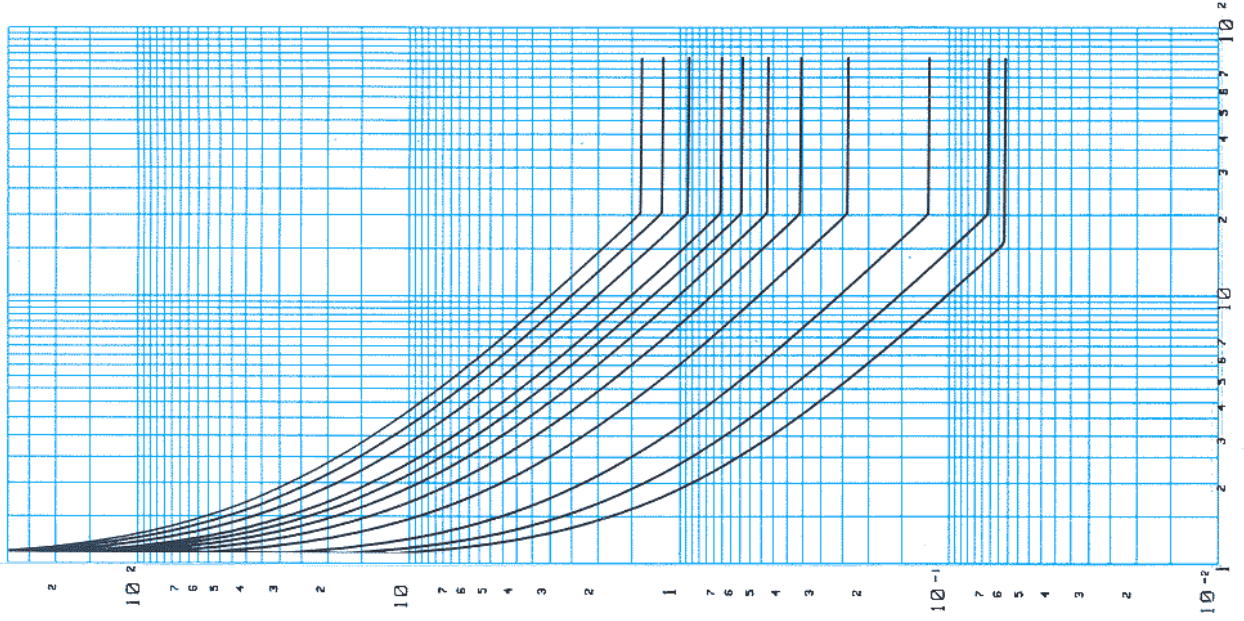


Fig. 2 - Very inverse time curves
- IEC 255-4

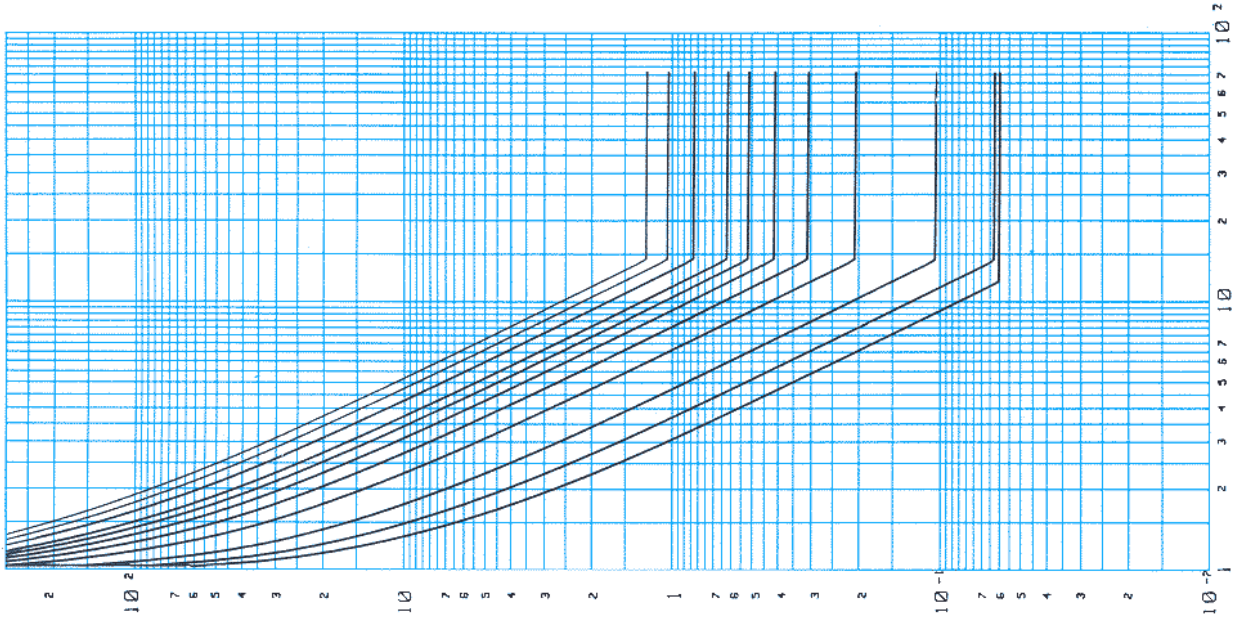


Fig. 3 - Extremely inverse time curves
- IEC 255-4

TMS 711-761

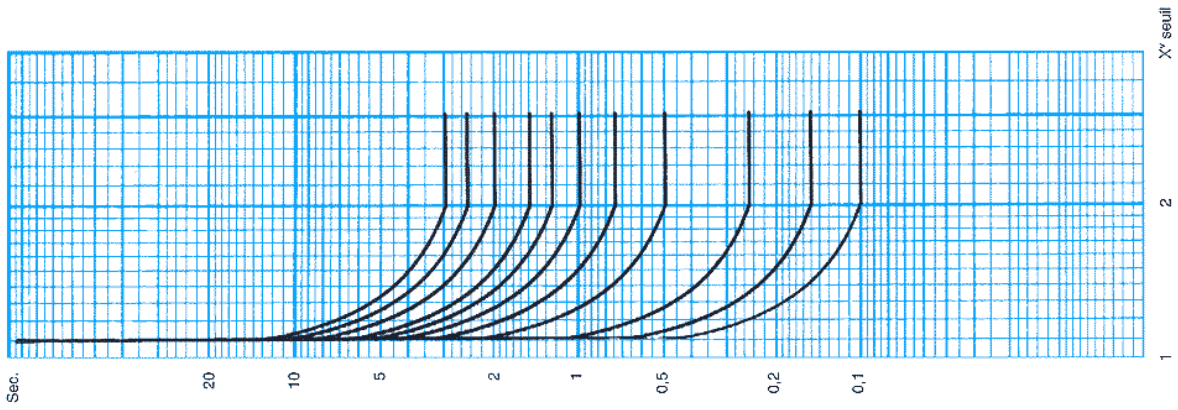


Fig. 5 : TMS - Over voltage
Extremely inverse time curves

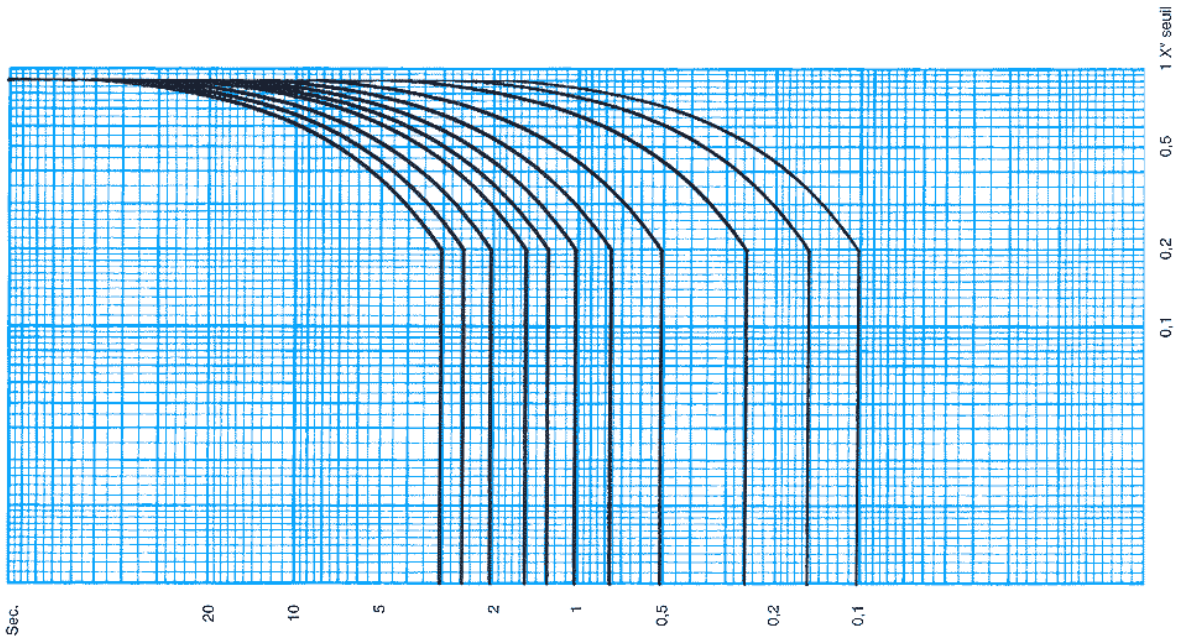


Fig. 4 : TMS - Under voltage
Inverse time curves

		<i>projecting front connection</i>	<i>projecting rear connection</i>	<i>flush rear connection</i>
CASE DIMENSIONS	CONNECTING SCREWS \varnothing M4			
		height width	172 mm R2 = 83 mm R3 = 125 mm	height width