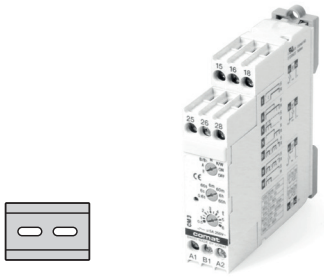
CM3

Multifunction | 12 … 24 V DC | 24 … 48 V DC, 24 … 240 V AC | 2 CO



Time data

Timing functions	fig. 1 1: E 2: A, K, N, B1 3: B, W
Timing range	50 ms … 0.6 s / 0.5 s … 6 s / 5 s … 60 s / 0.5 min … 6 min / 5 min … 60 min / 0.5 h … 6 h / 5 h … 60 h
Timing scale	0.6 s / 6 s / 60 s / 6 min / 60 min / 6 h / 60 h

Main circuit

Number of contacts	2 CO
Contact material	AgNi
Rated voltage	250 V
Rated current	5 A
Minimum load	10 mA, 10 V
Inrush current	10 A, 10 ms
Rated load DC	fig. 2
Rated load AC-1	1250 VA
Mechanical endurance (cycles)	15 000 000
Electrical endurance at rated load AC-1 (cycles)	fig. 3

Control circuit

Nominal voltage	12 … 24 V DC	24 … 48 V DC / 24 … 240 V AC
Operating voltage range	9.6 … 28.8 V DC	19 … 250 V AC / 19 … 60 V DC
Power consumption AC / DC	- / 1.2 W	15 VA / 1.2 W
Current consumption on supply A1-A2 AC / DC	- / < 45 mA	< 40 mA / < 40 mA
Current consumption on input control B1 AC / DC	- / < 13.8 mA	< 6 mA / < 6 mA
Threshold voltage on input control B1 AC / DC	- / 5.8 … 6.5 V	11 … 13 V / 13 … 18 V
Rated frequency	-	0; 45 … 63 Hz

Insulation

Rated test voltage control / main circuit	2.5 kV rms / 1 min
Rated test voltage main / main circuit	2.5 kV rms / 1 min
Rated test voltage open contact	1 kV rms / 1 min
Pollution degree	2
Overvoltage category	III

General data

Ambient temperature storage (no ice)	-40 … 85 °C
Ambient temperature operation	-25 … 60 °C
Conductor cross section	2.5 mm², 2 x 1.5 mm²
Nominal screw torque	0.4 Nm
Dimensions	fig. 4
Weight	72 g
Protection degree	IP 20
Housing material	PC

Product reference

Description	Type	12-24	24-48 / 24-240
DC supply	CM3/DC…V	✓	
UC supply	CM3/DC…V/AC…V		✓

Other voltages on request. Please contact support@comatreleco.com.
«…» list control circuit voltage to complete product references.

fig. 1. Wiring diagram

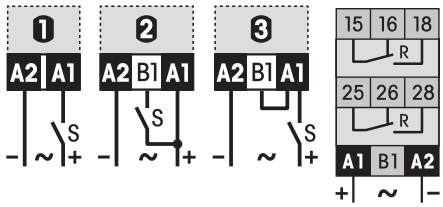


fig. 2. DC load limit curve

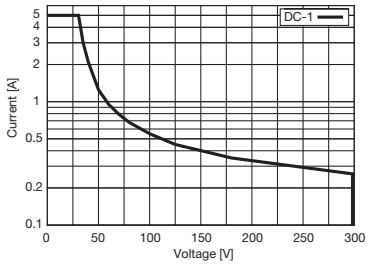


fig. 3. AC voltage endurance

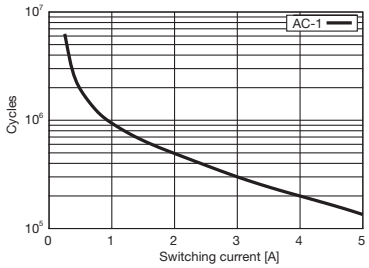
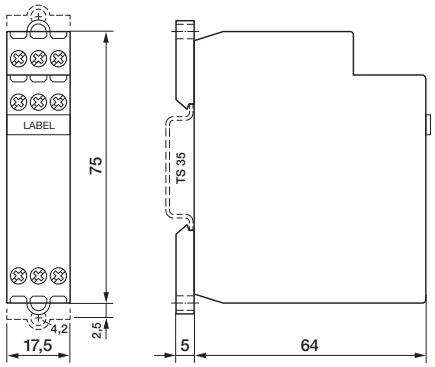


fig. 4. Dimensions (mm)



Standards and approvals

Standards IEC/EN 60947

Approvals

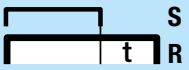
Time functions

Delay functions

E **On delay**

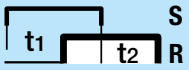
S ⇒ **R** on with delay
SOFF ⇒ **R** off

A **Off delay**



S ⇒ **R** on
SOFF ⇒ **R** off with delay

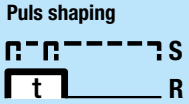
F **On and off delay**



S ⇒ **R** on with delay (**t**1)
SOFF ⇒ **R** off with delay (**t**2)

Puls shaping

K **Puls shaping**



S (pulse or continuous contact)
⇒ **R** on for **t**
S ▬ no influence on **R** and **t**

L **Pulse shaping,** retrigger (subsequ.time operation from 0)

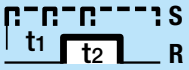
S (pulse or continuous contact)
⇒ **R** on for **t**
S on for **t** = **t**RESET

M **Puls shaping**

SOFF ⇒ **R** on for **t**
S ▬ no influence on **R** and **t**

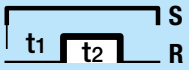
Delayed pulse

G **On delay single shot**



S (pulse or continuous contact)
⇒ **R** after **t**1 on for **t**2
S ▬ no influence on **R** and **t**

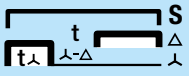
H **On delay single shot**



S ⇒ **R** after **t**1 on for **t**2
SOFF ⇒ **R** off

Special functions

Y **Star-delta timer**



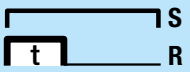
S ⇒ ⅄ on for **t**⅄
⅄**OFF** ⇒ △ on with delay for **t**⅄-△
SOFF ⇒ △ off

X1 **Restart delay**

S ⇒ **R** on
SOFF ⇒ **R** off and starts **t**
S ⇒ **R** restart only after **t**

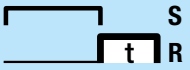
Shot timing modes

W **One shot leading edge**



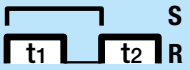
S ⇒ **R** on for **t**
SOFF ⇒ **R** off
(pulse clipping)

N **One shot trailing edge**



SOFF ⇒ **R** on for **t**
S on for **t** ⇒ **R** off

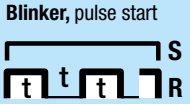
Q **One shot leading and trailing edge**



S ⇒ **R** on for **t**1
SOFF ⇒ **R** on for **t**2
SOFF off for **t**1 ⇒ **R** off

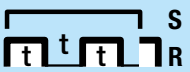
Blinker functions

B **Blinker,** pulse start



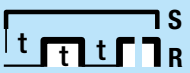
S ⇒ **R** on/off periodically
according to **t**
SOFF ⇒ **R** off

B1 **Blinker,** pulse start, trailing pulse



S ⇒ **R** on/off periodically
according to **t**
SOFF: last pulse = **t**

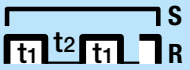
B2 **Blinker,** interval start



S ⇒ **R** after **t** on/off periodically
according to **t**
SOFF ⇒ **R** off

Repeat cycle timer

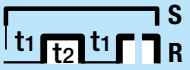
I **Repeat cycle timer,** pulse start



S ⇒ **R** on/off periodically
according to **t**1 and **t**2
SOFF ⇒ **R** off

P **Repeat cycle timer,** interval start

C55, CT1: $t_2 \sqcap t_1$



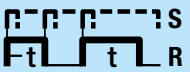
S ⇒ **R** after **t**1 (**t**2) on/off peri-
odically according to **t**2 and **t**1
SOFF ⇒ **R** off

Special functions

S **Step-on / Step-off switch**

S ⇒ **R** on/off

LS **Step-switching** (staircase lighting timer), with time lapse



S ⇒ **R** on and starts **t**
S on for **t** ⇒ **R** off

Stop / Reset

tSTOP **S**STOP interrupts **t**
(**t**-addition)

tRESET **S**RESET reset **t**
t restarts immediately

T **t** is stopped
▬ ⇒ **R** on/off

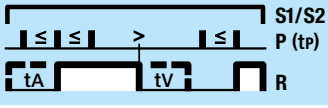
T **Test**

S = Triggering
R = Output circuit
⇒ = switches…

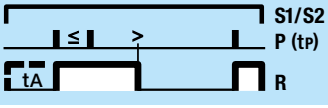
ON OFF

Pulse sequence monitoring

U



V



S1/S2 = Monitoring start
P = Pulse sequence
tP = Pulse separation

≤: Pulse separation is **smaller** than the time **t**P
>: Pulse separation is **larger** than the time **t**P

Start with **S1** = **without** start-up short-out **t**A
Start with **S2** = start-up short-out **t**A

tV = settable alarm delay
delay (**t**A = **t**V)

Time Cubes

Type	Function																			t- Stop	t-Reset	Ext. Poti	t max.				
	E	A	F	W	N	Q	K	L	M	B	B1	B2	G	H	I	P	S	LS	X1	U	V				sec	min	h	d	Page
CT..-E 30	●																									30			229
CT..-A 30		●																								30			229
CT..-K 30				●			●																			30			229
CT..-B 30										●																30			229

Modular plug-in Time Relays (CT-System)

Type	Function																			t- Stop	t-Reset	Ext. Poti	t max.				
	E	A	F	W	N	Q	K	L	M	B	B1	B2	G	H	I	P	S	LS	X1	U	V				sec	min	h	d	Page
CT32…	●	●		●	●		●			●	●															60*			233
CT33…	●	●	△	●	●	△	●	●		●	●		▲	▲													60*		234
CT36…															●	●											60*		235

Plug-in Time Relays

Type	Function																			t- Stop	t-Reset	Ext. Poti	t max.				
	E	A	F	W	N	Q	K	L	M	B	B1	B2	G	H	I	P	S	LS	X1	U	V				sec	min	h	d	Page
C55	●	●	●	●	●	●	●		●	●			●	●	●	●				●	●	●	●				60	210
C55.3	●	●	●	●	●	●	●		●	●			●	●	●	●				●	●	●	●				60	211
C55.4	●	●	●	●	●	●	●		●	●			●	●	●	●				●	●	●	●				60	212
C56	●	●	●	●	●	●	●		●	●			●	●	●	●				●	●	●	●				60	213
C64		■			■																				20			214
CS2	●	●		●	●		●			●		●										●				60*		217
CS3	●	●		●	●		●			●		●														60*		218
RS 41-M	●	●		●			●			●														15				219

Plug-in Time Relays

Type	Function																			t- Stop	t-Reset	Ext. Poti	t max.				
	E	A	F	W	N	Q	K	L	M	B	B1	B2	G	H	I	P	S	LS	X1	U	V				sec	min	h	d	Page
C83	●	●	△	●	●	△	●	●		●	●		▲	▲													60*		215
C85			●			●							●	●	●	●											60*		216

DIN Time Relays

Type	Function																			t- Stop	t-Reset	Ext. Poti	t max.				
	E	A	F	W	N	Q	K	L	M	B	B1	B2	G	H	I	P	S	LS	Y	U	V				sec	min	h	d	Page
AA2 - AA2M		●																								1,5/12			170
AE2 - AE2M	●																									1,5/12			171
AL1								●																					195
AL3								●									●	●								60			196
AL4								●									●	●								60			197
AL5																	●												198
AM1	●			●						●		●														60			199
AM2	●	●		●			●																			60			200
AM3 [1]	●	●		●			●																			60			201
CM2	●	●		●			●															●	●	●			12		202
CM3	●	●		●	●		●			●	●																60*		203
CMD11 A		●																											168
CMD11 E	●																												169
CIM1	●	●		●	●		●			●	●						●	●									60*		176
CIM12	●	●		●	●		●			●	●						●	●									60*		178
CIM13	●	●		●	●		●			●	●						●	●									60*		180
CIM14	●	●		●	●		●			●	●						●	●									60*		182
CIM2	●	●						●	●			●	●	●													60*		183
CIM22	●	●						●	●			●	●	●													60*		185
CIM23	●	●						●	●			●	●	●													60*		187
CIM3			●			●							●	●	●	●											60*		189
CIM32			●			●							●	●	●	●											60*		191
CIM33			●			●							●	●	●	●											60*		193
CRV4	●	●	△	●	●	△	●	●	●	●	●	●	●	●			●	●						●			60*		205
CSV4	●	●	△	●	●	△	●	●	●	●	●	●	●	●			●	●						●			10*		206
CPF11		●					●	●																	0.6				204
CY1																			●										208

*** TF-60 Setting of long times**

The TF60 time setting methode permits short examination of long delay time settings. Elapsing times of hours can be monitored in the sec. range.

Example for a delay time of 38h:

1. Set range switch to 60sec
2. Set 38sec on the potentiometer (e.g. check 38sec by chronometer)
3. Set range switch to 60h

The delay time now amounts to 38h.

[1] alternatively with instantaneous contact
■ without auxiliary voltage (relay bistable)
☐ without auxiliary voltage (relay monostable)
△ $t_2 = t_1$
▲ $t_2 = 0.5s$