Time Delay Relays

- Time Cubes®
- Multifunction Time Delay Modules
- Time Delay Relays
- Pulse Shapers
- Step-on Step-off Relays
- Power Relays
- Socket
- Accessories
### Delay functions

<table>
<thead>
<tr>
<th>Delay Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On delay</td>
<td>S (\rightarrow) R on with delay</td>
</tr>
<tr>
<td>Off delay</td>
<td>S (\rightarrow) R on</td>
</tr>
<tr>
<td>On and off delay</td>
<td>S (\rightarrow) R on with delay (t1)</td>
</tr>
</tbody>
</table>

### Shot timing modes

<table>
<thead>
<tr>
<th>Shot Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One shot leading edge</td>
<td>S (\rightarrow) R on for t</td>
</tr>
<tr>
<td>One shot trailing edge</td>
<td>S (\rightarrow) R off for t</td>
</tr>
<tr>
<td>One shot leading and trailing edge</td>
<td>S (\rightarrow) R on for t1</td>
</tr>
</tbody>
</table>

### Pulse shaping

<table>
<thead>
<tr>
<th>Pulse Shaping</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulse shaping</td>
<td>S (pulse or continuous contact) (\rightarrow) R on for t</td>
</tr>
<tr>
<td>Pulse shaping, retrigger</td>
<td>S (pulse or continuous contact) (\rightarrow) R on for t</td>
</tr>
<tr>
<td>Pulse shaping</td>
<td>S OFF (\rightarrow) R on for t</td>
</tr>
</tbody>
</table>

### Blinker functions

<table>
<thead>
<tr>
<th>Blinker Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinker, pulse start</td>
<td>S (\rightarrow) R on/off periodically according to t</td>
</tr>
<tr>
<td>Blinker, pulse start, trailing pulse</td>
<td>S (\rightarrow) R on/off periodically according to t</td>
</tr>
<tr>
<td>Blinker, interval start</td>
<td>S (\rightarrow) R off after t on/off periodically according to t</td>
</tr>
</tbody>
</table>

### Repeat cycle timer

<table>
<thead>
<tr>
<th>Repeat Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeat cycle timer, pulse start</td>
<td>S (\rightarrow) R on/off periodically according to t1 and t2</td>
</tr>
<tr>
<td>Repeat cycle timer, interval start</td>
<td>S (\rightarrow) R off after t1 (t2) on/off periodically according to t2 and t1</td>
</tr>
</tbody>
</table>

### Special functions

<table>
<thead>
<tr>
<th>Special Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Star-delta timer</td>
<td>S (\rightarrow) on for t</td>
</tr>
<tr>
<td>Restart delay</td>
<td>S (\rightarrow) R on.</td>
</tr>
</tbody>
</table>

### Stop/Reset

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>tSTOP (\rightarrow) S OFF</td>
</tr>
<tr>
<td>Reset</td>
<td>tRESET (\rightarrow) S OFF</td>
</tr>
</tbody>
</table>

### Pulse sequence monitoring

<table>
<thead>
<tr>
<th>Sequence Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| S1/S2 \(\rightarrow\) P (tr) | Pulse separation is smaller than the time \(t_P\) \>
| S1/S2 \(\rightarrow\) P (tr) | Pulse separation is larger than the time \(t_P\) \> |

Stop with \(S1\) without start-up short-out \(t_A\) \>
Start with \(S2\) with start-up short-out \(t_A\) \>
\(tv\) = settable alarm delay (\(t_A = tv\))
TF-60

The TF60 time setting method 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)

△ t2 = t1
▲ t2 = 0.5s
Plug-in Time Cubes for Industrial Relays

8-/11-pole plug-in time delay relay system
The simplest time delay relay system worldwide, fitting all 8 or 11-pin relay sockets (octal/sub-magnalite).
Original time cubes® are simply placed between socket and relay without rewiring.
In this way, even as a retrofit, all industrial relays can be provided with the required timing functions without additional space being required. The contact connections of the relay on the socket remain trough-connected.

The Comat CT System

The time delay relays and monitoring relays consist of the plug-in CT time function modul and 11-pole CT output relay and the system socket C12B. Both system components can be combined freely with one another. This allows the equipment to be selected optimally for specific use.
Subsequent modifications, for example a change from mechanical contacts to solid-state outputs, are possible at any time by simple reconnection.
This provides the user a complete, universal system, the high flexibility of which is unique throughout the world.
## Plug-in Time Delay Relays

### Table: Time Delay Relays

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Socket Type</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C81</td>
<td>0.2s-30min</td>
<td></td>
<td>8A</td>
<td>67</td>
</tr>
<tr>
<td>C82</td>
<td>0.5s-60min</td>
<td></td>
<td>8A</td>
<td>67</td>
</tr>
<tr>
<td>C83</td>
<td>50ms-60h</td>
<td></td>
<td>8A</td>
<td>67</td>
</tr>
<tr>
<td>C84</td>
<td>0.1s-20min</td>
<td></td>
<td>5A</td>
<td>67</td>
</tr>
<tr>
<td>C85</td>
<td>2x 50ms-60h</td>
<td></td>
<td>8A</td>
<td>67</td>
</tr>
<tr>
<td>CS1</td>
<td>50ms-60min</td>
<td></td>
<td>8A</td>
<td>68</td>
</tr>
<tr>
<td>CS2</td>
<td>50ms-60h</td>
<td></td>
<td>8A</td>
<td>68</td>
</tr>
<tr>
<td>CS3</td>
<td>50ms-60h</td>
<td></td>
<td>6A</td>
<td>68</td>
</tr>
<tr>
<td>CS6</td>
<td>50ms-60h</td>
<td></td>
<td>6A</td>
<td>68</td>
</tr>
<tr>
<td>C64</td>
<td>0.1s-20min</td>
<td></td>
<td>5A</td>
<td>69</td>
</tr>
<tr>
<td>CS5/66</td>
<td>1-6min</td>
<td></td>
<td>6A</td>
<td>69</td>
</tr>
<tr>
<td>C52</td>
<td>0.1s-60min</td>
<td></td>
<td>8A</td>
<td>70</td>
</tr>
<tr>
<td>C53</td>
<td>0.1s-60h</td>
<td></td>
<td>8A</td>
<td>70</td>
</tr>
<tr>
<td>C53.3</td>
<td>0.1s-60h</td>
<td></td>
<td>0.5A</td>
<td>70</td>
</tr>
<tr>
<td>C53.4</td>
<td>0.1s-60h</td>
<td></td>
<td>2A</td>
<td>70</td>
</tr>
<tr>
<td>C55</td>
<td>0.01s-60days</td>
<td></td>
<td>5A</td>
<td>70</td>
</tr>
<tr>
<td>C55.3</td>
<td>0.01s-60days</td>
<td></td>
<td>0.5A</td>
<td>70</td>
</tr>
<tr>
<td>C55.4</td>
<td>0.01s-60days</td>
<td></td>
<td>2A</td>
<td>70</td>
</tr>
<tr>
<td>C56</td>
<td>0.01s-60days</td>
<td></td>
<td>5A</td>
<td>70</td>
</tr>
</tbody>
</table>

This edition replaces all previous issues. Availability, errors and specification subject to change without notice.

- Series: Plug-in Time Delay Relays
- Time range: Time range of the relay
- Socket Type: Type of socket required
- Contact: Rated contact capacity
- Page: Page number for more information
### Time Delay Relays

<table>
<thead>
<tr>
<th><strong>RS Serie</strong></th>
<th><strong>Series</strong></th>
<th><strong>Time range</strong></th>
<th><strong>Socket Type</strong></th>
<th><strong>Contact</strong></th>
<th><strong>Page</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifunctional Time Delay Relay, 5 functions</td>
<td>RS121</td>
<td>10ms-100h</td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Multifunctional Time Delay Relay, 5 functions</td>
<td>RS121.P</td>
<td>10ms-100h</td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Multifunctional Time Delay Relay 5 functions with t-stop- and t-reset-function</td>
<td>RS121.R</td>
<td>10ms-100h</td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Universal Cycle Timer</td>
<td>RS122-</td>
<td>0,1s-30h</td>
<td></td>
<td></td>
<td>75</td>
</tr>
<tr>
<td>Digital Multifunctional Time Delay Relay, 5 functions</td>
<td>RS321</td>
<td>10ms-99.9h</td>
<td></td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>Digital Multifunctional Time Delay Relay with digital display of elapsing time, 5 functions</td>
<td>RS521</td>
<td>10ms-99.9h</td>
<td></td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>Economy Multifunctional Time Delay Relay, 5 functions</td>
<td>RS41-M</td>
<td>0,1s-15min</td>
<td></td>
<td></td>
<td>76</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>C Serie</strong></th>
<th><strong>Series</strong></th>
<th><strong>Time range</strong></th>
<th><strong>Socket Type</strong></th>
<th><strong>Contact</strong></th>
<th><strong>Page</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Multifunctional Time Delay Relay with digital display of elapsing time, 5 functions</td>
<td>CPX519</td>
<td>0,01s-999min</td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Digital Cycle Timer</td>
<td>CTI519</td>
<td>2x 0,01s-999min</td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Digital Multifunctional Time Delay Relay, 2 functions</td>
<td>CEA-226</td>
<td>0,1s-990min</td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Multifunctional Time Delay Relay, 5 functions</td>
<td>CPX129</td>
<td>0,1s-15h</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Time Delay Relay with 3 double functions (t1/t2 individual)</td>
<td>CFG126</td>
<td>2 x 0,1s-5min</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Cycle Timer</td>
<td>CTI129</td>
<td>2 x 0,1s-15h</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Multifunctional Time Delay Relay, 2 functions</td>
<td>CEA-126</td>
<td>0,1s-15min</td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Single Shot Relay 3 functions</td>
<td>CWR-102</td>
<td>0,1-1,5s</td>
<td></td>
<td></td>
<td>79</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>CX Serie</strong></th>
<th><strong>Series</strong></th>
<th><strong>Time range</strong></th>
<th><strong>Socket Type</strong></th>
<th><strong>Contact</strong></th>
<th><strong>Page</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifunctional Time Delay Relay 3 functions</td>
<td>CX38</td>
<td>2x 0,1s-15h</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>Star-delta Timer ON.. with instantaneous contact</td>
<td>CX39</td>
<td>1-100ms 0,1s-15h</td>
<td></td>
<td></td>
<td>80</td>
</tr>
</tbody>
</table>
# Time Delay Relays

## DIN Time Delay Relays

### Mono function Time Delay Relay

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRE1</td>
<td>0.5s-30min</td>
<td>6A 13</td>
<td>82</td>
</tr>
<tr>
<td>CRA1</td>
<td>0.3s-30min</td>
<td>6A 13</td>
<td>82</td>
</tr>
<tr>
<td>AE2</td>
<td>0.8s-12min</td>
<td>10A 17.5</td>
<td>82</td>
</tr>
<tr>
<td>AA2</td>
<td>0.8s-12min</td>
<td>10A 17.5</td>
<td>82</td>
</tr>
<tr>
<td>CY1</td>
<td>0.5-60s</td>
<td>6A 17.5</td>
<td>82</td>
</tr>
</tbody>
</table>

### Extra slim 13mm

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRE1</td>
<td>0.5s-30min</td>
<td>6A 13</td>
<td>83</td>
</tr>
<tr>
<td>CRV1</td>
<td>0.5s-30min</td>
<td>6A 13</td>
<td>83</td>
</tr>
<tr>
<td>CRV2</td>
<td>50ms-60h</td>
<td>6A 13</td>
<td>83</td>
</tr>
<tr>
<td>CRV3</td>
<td>50ms-60h</td>
<td>6A 13</td>
<td>83</td>
</tr>
<tr>
<td>CRT3</td>
<td>50ms-60h</td>
<td>6A 13</td>
<td>83</td>
</tr>
</tbody>
</table>

### DIN A (Installation distribution panel)

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM1</td>
<td>0.5s-60min</td>
<td>10A 17.5</td>
<td>84</td>
</tr>
<tr>
<td>AM2</td>
<td>0.5s-60min</td>
<td>10A 17.5</td>
<td>84</td>
</tr>
<tr>
<td>AM3</td>
<td>0.5s-60min</td>
<td>10A 17.5</td>
<td>84</td>
</tr>
<tr>
<td>CIM1</td>
<td>0.6s-60h</td>
<td>16A 7.5</td>
<td>84</td>
</tr>
</tbody>
</table>

### DIN C (Industry)

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM1</td>
<td>50ms-12h</td>
<td>6A 17.5</td>
<td>85</td>
</tr>
<tr>
<td>CM2</td>
<td>0.3s-12h</td>
<td>6A 35</td>
<td>85</td>
</tr>
<tr>
<td>CM3</td>
<td>50ms-60h</td>
<td>6A 17.5</td>
<td>85</td>
</tr>
<tr>
<td>CNR1</td>
<td>0.1s-12min</td>
<td>5A 17.5</td>
<td>86</td>
</tr>
<tr>
<td>CT1</td>
<td>0.1s-30h</td>
<td>6A 17.5</td>
<td>86</td>
</tr>
</tbody>
</table>

### 22.5mm mounting series

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO31</td>
<td>0.5s-20min</td>
<td>6A 22.5</td>
<td>87</td>
</tr>
<tr>
<td>ECO32</td>
<td>0.1s-12h</td>
<td>6A 22.5</td>
<td>87</td>
</tr>
</tbody>
</table>

### Extra slim 13mm

<table>
<thead>
<tr>
<th>Series</th>
<th>Time range</th>
<th>Contact</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO31</td>
<td>0.5s-20min</td>
<td>6A 22.5</td>
<td>87</td>
</tr>
<tr>
<td>ECO32</td>
<td>0.1s-12h</td>
<td>6A 22.5</td>
<td>87</td>
</tr>
<tr>
<td>Series</td>
<td>Time range</td>
<td>Socket Type</td>
<td>Contact</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Cascade Relay</td>
<td>0,1s-30min</td>
<td>DIN 35</td>
<td>4 x 6A</td>
</tr>
<tr>
<td>Multifunctional Time Delay Relay</td>
<td>0,1s-30min</td>
<td>DIN 35</td>
<td>8A</td>
</tr>
<tr>
<td>Universal Timer Module</td>
<td>0,01s-300min</td>
<td>32 x</td>
<td>32mm PNP 120mA</td>
</tr>
<tr>
<td>Amplifier Relay, Switching Amplifier</td>
<td>Amplifier for 3 wire and Namur Sensors. Potential free contacts.</td>
<td>5A</td>
<td>92</td>
</tr>
<tr>
<td>Amplifier Relay, Switching Amplifier</td>
<td>Amplifier for 3 wire and Namur Sensors. Potential free contacts.</td>
<td>6A</td>
<td>92</td>
</tr>
<tr>
<td>Amplifier Blinker</td>
<td>For direction indication blinkers in vehicles. High life expectancy.</td>
<td>10A DC</td>
<td>93</td>
</tr>
<tr>
<td>Switching Amplifier</td>
<td>For high switching numbers.</td>
<td>10A DC</td>
<td>93</td>
</tr>
<tr>
<td>Single Channel Pulse Shaper</td>
<td>4 functions</td>
<td>5 - 600ms</td>
<td>DIN 17,5</td>
</tr>
<tr>
<td>Double Channel Pulse Shaper</td>
<td>4 functions</td>
<td>50/200ms</td>
<td>DIN 17,5</td>
</tr>
<tr>
<td>Preset Counters</td>
<td>Switching after the preset number of pulses are reached, max. 999</td>
<td>6A</td>
<td>95</td>
</tr>
<tr>
<td>Preset Counters with display</td>
<td>Switching after the preset number of pulses are reached, max. 999</td>
<td>6A</td>
<td>95</td>
</tr>
</tbody>
</table>
Time Delay Relays

Plug-in Time Cubes and Time Delay Modules

Time Cubes®: CT2 and CT3

CT-System: CT30, CT32, CT33, CT36
Plug-in Time Cubes

8-/11-pole Plug-in Time Delay Relay System
The simplest time delay relay system worldwide, fitting all 8 or 11-pin relay sockets (octa/sub-magnalite).
Original time cubes are simply placed between socket and relay without rewiring.
In this way, even as a retrofit, all industrial relays can be provided with the required timing functions without additional space being required. The contact connections of the relay on the socket remain through-connected.

Ordering example

Time cubes CT2-300/-H
Socket EC-8 or C5-8
Relay C2...:

Time cubes CT3-300/-H
Socket EC-11 oder C11A
Relay C3...:

Triggering
Function
2 = 8-pole
3 = 11-pole

Order no.
Using examples
CT2-300/-H
Order no.
CT3-300/-H

On delay
S ⇒ R on with delay
S OFF ⇒ R off

Off delay
S ⇒ R on
S OFF ⇒ R off with delay

One shot leading edge
S ⇒ R on for t
S OFF ⇒ R off (pulse clipping)

Pulse shaping
S (pulse or continuous contact)
S ⇒ R on for t
S ⇒ no influence on R and t

Blinker, pulse start
S ⇒ R on/off periodically according to t
S OFF ⇒ R off

S = Triggering
R = Output circuit
⇒ = switches...

Wiring diagram
Industrial relay
CT2/3
Socket
EC-8
EC-11

This edition replaces all previous issues.
Availability, errors and specification subject to change without notice.
The Comat CT System is modular. The time delay relays and monitoring relays consist of the plug-in CT electronic module and an 11-pole CT output relay. Both system components can be combined freely with one another. This allows the equipment to be selected optimally for specific use. Subsequent modifications, for example a change from mechanical contacts to solid-state outputs, are possible at any time by simple reconnection. This provides the user a complete, universal system, the high flexibility of which is unique throughout the world.

The system socket C12B0 serves as a basis for the vibration-free reception of the electronic module. It has a 4-pole module slot in which the CT-module – also without output relay – locks in such a way that it is vibration-free, contact-free. Contact is via twin knife contacts which ensure optimal contact reliability. With the A2-connector C-A2 plug-in flush in the socket, the neutral conductor (N / –) can be connected as a 10A bus from socket to socket. This considerably reduces wiring work.

Robust terminals for cross-sections up to 4mm² and generous labellingfacilities are other advantages of this practical comat system socket. As variants to the standard socket C12B0, two identical sockets, but with printed device diagram, are available (C12B1/2). By clearly identifying the connections, these sockets ensure rapid, error-free and therefore economical wiring. When a service is required, they facilitate fault location.

The CT module demonstrates comat’s practical experience in the area of control electronics. All control and display elements are arranged on the front and are labelled in a self-explanatory manner for international use. The values set are also clearly legible when the module has been installed.

Printed diagrams explain the function and the connection scheme directly indicates the appropriate terminals in the system socket.

A transparent front cover provides protection from unauthorized misadjustment and additionally locks the module onto the output relay.

Triggering is performed with the operating voltages (L1 or +). Hence, no potential-free contacts are required. Triggering complies with the machine standards. A parallel connection of other users to B1 is admissible in exceptional circumstances.

The solid-state relays are used instead of mechanical contacts. In the standard version .5, the relay has a potential-free output which switches an AC or DC load in the same way as a mechanical contact. However, if functions without bounce or wear, withstands overloads, has short-circuit protection and has a practically unlimited life even with full output load.

Preferred applications are high switching frequency, for example as repeat cycle timers, flashing bars with delay circuits, motors, etc.

Note on use

According to the standards «Safety of machines» e.g. EN 60204-1, EN 292-2, triggering with A2-potential (N→+) is only admissible in exceptional circumstances. For that reason the comat CT modules are triggered by A1-potential (L→+). This makes them unrestrictedly suitable also for use in machines and systems which must conform with machine or CE guidelines or directives.

**Multifunction Time Delay Relays, Modular**

<table>
<thead>
<tr>
<th>Timer module</th>
<th>Function/triggering</th>
<th>Time range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT30</td>
<td>Economy timer</td>
<td>0.25s - 30min</td>
</tr>
<tr>
<td>CT31</td>
<td>Universal timer</td>
<td>0.15s - 60min</td>
</tr>
<tr>
<td>CT32</td>
<td>Universal timer</td>
<td>30s - 60h</td>
</tr>
<tr>
<td>CT33</td>
<td>Universal timer</td>
<td>2x 50s - 60h</td>
</tr>
</tbody>
</table>

**Triggering**

- CT30: Economy timer
- CT31: Universal timer
- CT32: Universal timer
- CT33: Universal timer

**Function page:**
- CT30: page 51
- CT31: page 51
- CT32: page 51
- CT33: page 51

**Order no.** for individual module (without output relay):

- UC110-240V
- UC115V-230V
- UC115V-UC230V
- UC110-240V
- UC24-48V
- UC24-48V
- UC24-48V
- UC24-48V

**Order no.** for individual module (with output relay):

- UC110-240V
- UC115V-230V
- UC115V-UC230V
- UC110-240V
- UC24-48V
- UC24-48V
- UC24-48V
- UC24-48V
The Time Relays CT30.., CT32.., CT33.. and CT36.. consist of modules (incl. cover) and output relays. The socket has to be ordered separately.

The modules can also be combined with other Comat relays. In this case the relays and the modules have to be ordered separately.

Please refer to chapter Industrial Relays for relay datas.
Time Delay Relays

Plug-in Time Delay Relays

• Multifunction Time Delay Relays
• Restart Delay Relays
Multifunctional Time Delay Relays

22.5 mm Plug-in Time Delay Relay System for all delay, shot timing and blinking functions. Double functions, repeat cycle timing and functions without auxiliary voltage.

**Function Page:** 52; **TF-60 setting:** Page 53; **Socket and Accessories:** Page 97

### C80

- **Timer C83/UC24-240V**
- **Socket CS18**

### C81
- Economy Time Delay Relay on delay or blinking, voltage controlled, output-LED.
- Time range: 0.2 s - 30 min, 0.2 - 3 s - 30 min
- **Ordering no.**

### C82
- Economy Time Delay Relay on delay, off delay, one shot leading edge, pulse shaping K, voltage controlled, output-LED.
- Time range: 0.5 s - 60 min, 0.5 - 6 s - 60 min
- **Ordering no.**

### C83
- Universal Multifunctional Time Delay Relay
  - 12 functions + ON (Test), voltage controlled.
  - Time lapse display (double blinking = t2)
  - Input-LED (24-240 V)
  - Output-LED
  - Seismc approved.
- **Ordering no.**

### C84
- Time Delay Relay, no auxiliary voltage
  - Off delay
  - One shot trailing edge
  - Triggering display
  - Minimum triggering time 150 ms only
  - Seismc approved.
- **Ordering no.**

### C85
- Double Time Delay Relay and Repeat Cycle Timer
  - 6 functions + test
  - t1/t2 separately settable
  - Time lapse display (double blinking = t2)
  - Input-LED (24-240 V)
  - Output-LED
  - Seismc approved.
- **Ordering no.**

### Ordering Example
- **Timer C83/UC24-240V**
- **Socket CS18**

### System socket CS-18
- Figure: with inserted retaining clips (standard delivery with relay)

### Time Delay Range
- **TF-60 setting** (page 53)

### Availability, errors and specification subject to change without notice.
**Multifunctional Time Delay Relays**

**CS1**
- Economy Time Delay and Blinker Relay
- With additional connection for remote potentiometer SP-01/1M (up to 50m).
- Replaces fully compatible CSE2, CSB2

**CS2**
- Universal Multifunctional Time Delay Relay like CS1, but with 7 functions and delay times up to 60 hours.
- Replaces fully compatible CS2, CSK2, CSN2

**CS3**
- Universal Multifunctional Time Delay Relay like CS2, but with 2nd contact instead of Z1-Z2 (terminal 6-5-7).
- Replaces fully compatible CS3, CSN3

**C63**
- Universal Multifunctional Time Delay Relay like CS3, but with 2nd contact on terminal 1-4-3.
- Replaces fully compatible CX3, CX36

**System socket C11A**
- Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

**Ordering example**
- Timer CS2/UC110-240V
- Socket C11A

---

**Ordering no.** 6A 250V~
**Triggering**

<table>
<thead>
<tr>
<th>Function Page</th>
<th>TF60 setting</th>
<th>Socket and Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2</td>
<td>53</td>
<td>Page 97</td>
</tr>
</tbody>
</table>
### C64

**Time Delay Relay without auxiliary voltage**

True off delay or one shot trailing edge after cut off power supply. Minimum triggering time 150ms only. Seismic approved.

Replaces RS124, CSR2

- **Function (page 52)**
  - Triggering

**Ordering no.**

- Timer C64/UC110-240V
- Socket C11A

---

### C65, C66

**Restart Delay Relay**

The C65 (50Hz) and C66 (60Hz) are special timers with no auxiliary voltage to guarantee a minimum OFF time after removal of supply. After the interruption of supply, the device will not reclose before the set time (1-6mins.) has elapsed, even if there has been a new command to switch ON.

Typical application:
After a mains failure it is not possible to restart (close contacts) before the machine is at rest. Example: Motor (see diagram on the left).

**Ordering example**

- Timer C65/AC230V
- Socket C11A

---

**Function Page: 52; TF-60 setting: Page 53; Socket and Accessories: Page 97**

Availability, errors and specification subject to change without notice.
Multifunctional Time Delay Relays

### Universal Multifunctional Time Delay Relay
- C52: 2 functions
  - 0.1s-60min (quartz)
  - 1 change-over contact
- C53 (C53.3, C53.4): 10 functions
  - 0.1s-60h (quartz)
  - 1 change-over contact
  - Alternatively solid-state output .3 or .4

### Universal Multifunctional Time Delay Relay
- C55 (C55.3, C55.4): 15 functions incl. Puls sequence monitoring (U/V)
  - 0.01s-60 days (quartz)
  - Setting step up to 60s:1ms
  - t-STOP and t-RESET input
  - 2 changeover contacts
  - Alternatively solid-state output .3 or .4
  - Seismic approved
- C56: Like type C55, but with potential free triggering of START, STOP and RESET (insulation from 2-10: 2kV)

### 11-pole Plug-in Time Delay Relay System
For all timing modes from 10ms up to 60 days. Extremely accurate due to quartz time base.

Digital functions and residual time display.

Front panel mounting with FZ-50. Test function "T".

---

**Function (page 9)**

**Ordering no.**

- C52: \[ …V \]
- C53: \[ …V \]
- C55: \[ …V \]
- C56: \[ …V \]

**Ordering example**

Timer C53/UC110-240V

Socket C11A

- Function Page: 52
- TF-60 setting: Page 53
- Socket and Accessories: Page 97

---

**System socket C11A**

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

---

**Time range**

Partial ranges

- 0.1s-60min
- 0.01s-60days
- 0.1s-60h
- 0.01-60s...0,1h-60days
- 0.01s-60min...0,1min-60h
- 0.01s-60days
- 0.0 1-60s...0, 1h-60days

---

**Triggering**

- AC 50/60Hz
- UC AD/DC
- DC -10%

---

**Universal Multifunctional Time Delay Relay like type C55, but with potential free triggering of START, STOP and RESET (insulation from 2-10: 2kV).**

---

**Universal Multifunctional Time Delay Relay**

- C53/UC1 10-240V
- Socket
- and otheres: www.comat.ch

---

**THE MASTERS**
This edition replaces all previous issues.
Availability, errors and specification subject to change without notice.

Option*

Solid-state output for C53, C55
(instead of contact)

C53.3
C55.3
For AC or DC load
0,5 A 10-265 V

C53.4
C55.4
For DC load
2 A 24 V

Solid-state output

For AC or DC load

0,5 A 10-265 V

UC110-240 V
UC24–60 V

For DC load

2 A 24 V

C53.3 / 24 V
C55.3 / 24 V

C53.4 / 24 V
C55.4 / 24 V
Comat products comply with different international standards and are certified accordingly. A detailed list can be found on our web page: www.comat.ch
Time Delay Relays

Plug-in Time Delay Relays

• RS Series
• C Series
• CX Series
**Time Delay Relays**

Field proven since many years. The plug-in timer series from comat for highest quality requirements and unattained versatile operation.

### Multifunctional Time Delay Relay

- 5 functions
- 2 change-over contacts
- Potential-free triggering or sensor PNP/NPN
- With connection for remote potentiometer

### Diagram

**Connection with socket C11A**

- **AC 50/60Hz**
- **UC AC/DC**
- **DC ≥10%**

### Ordering no.

- **RS 121/...**
- **RS 121.P/...**
- **RS 121.R/...**

### Built-in potentiometer SP-01/1M

- **1MΩ**
- Max. 50 m

### Ordering example

**Timer RS 121/ATX**

**Socket C11A**

- Function: Page 52
- TF: 60 setting: Page 53
- Socket and Accessories: Page 97

### System socket C11A

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).
Repeat Cycle Timer multicomat

Cycle Timer
Field proven since many years. The plug-in timer series from comat for highest quality requirements and unattained versatile operation.

Triggering

1 2
A2 A1 3 1 3 A2 A1

Time range

Universal Cycle Timer
• pulse or interval start
• Time range: 0,1s-30min
• 2 change-over contacts

Universal Cycle Timer
• pulse or interval start
• Time range: pulse 0,1s-30min
• interval 0,1min-30h
• 2 change-over contacts

Universal Cycle Timer
• pulse or interval start
• Time range 0,1min-30h
• 2 change-over contacts

Diagram
Connection with socket C11A

Ordering no.

RS 122-M/ATX

RS 122-MH

RS 122-H

System socket C11A
Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

Ordering example

Timer RS 122-M/ATX
Socket C11A

- FOR PLUG-IN MODULES (M4)

- FS-23

- 38x72cm

- 92-72cm

- 18-16cm

- 15-28cm

- 30-72cm

- 20-92cm

- 75-38cm

- 204-162cm

- 4

- C-A2

- 31-6

- 22-25

- 28-26

- 21-18

- 16-15

- 18-16

- 15-28

- 26-25

- 22-21

- 34-31

- 9875

- +16

- +10

- AC

- DC

- UC

- ATX

- ANP

- UFK

- UCB

- DNX

- MAX

- 5A 250V~

- 5A 250V~

- 5A 250V~
**Plug-in Time Delay Relay multi**

**RS 321, 521**

**RS 41-M**

---

**Time Delay Relay**


---

**Triggering**

- Function (page 53)

---

**Diagram**

Connection with socket C11A

---

**Ordering no.**

- RS 321/ATX
- RS 521
- RS 41-M

---

**Ordering example**

- Timer RS 321/ATX
- Socket C11A

---

**System socket C11A**

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

---

**Specifications**

- RS 321
  - 5 functions
  - 2 change-over contacts
  - Potential-free triggering
  - Digital Multifunctional Time Delay Relay

- RS 521
  - Digital time elapse display
  - Time stop function
  - 2 change-over contacts
  - Potential-free triggering

- RS 41-M
  - 5 functions
  - 1 change-over contact
  - Potential-free triggering
  - With front cover

---

**Technical Details**

- Operating Life: 10,000,000 cycles
- Power Consumption: 4 W
- Ambient Temperature: -20°C to +55°C

---

**Additional Information**

- www.comat.ch
- CE Marking and other certifications.
Time Delay Relay
Field proven since many years.
The plug-in timer series from comat for highest quality requirements and unattained versatile operation.

Triggering

1. Triggering Function (page *)

Time range
Partial range

μ MAX

2. 0.01 s - 999 min

3. Time Delay Relay

- Digital Multifunctional Time Delay Relay
  - with digital time elapsed display
  - 5 functions
  - 2 change-over contacts
  - potential-free triggering

- Digital Cycle Timer
  - Rest interval can be set separately
  - digital time elapsed display
  - 2 change-over contacts
  - potential-free triggering

- Time Delay Relay
  - 2 change-over contacts
  - potential-free triggering

System socket C11A
Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

Ordering example
Timer CPX-519/ANX
Socket C11A

Ordering no. CPX-519/... CTI-519/... CEA-226/...
Plug-in Time Delay Relay **multicomat**

**Time Delay Relay**
Field proven since many years. The plug-in timer series from comat for highest quality requirements and unattained versatile operation.

**Triggering**

1. E-Triggering Function (page 52)
2. F-Triggering
3. PNP
4. PNP

**Time Delay Relay**

**CPX-129**
- Multifunctional Time Delay Relay
- 5 functions
- 2 change-over contacts
- Potential-free triggering

**CFG-126**
- Multifunctional Time Delay Relay with 3 double functions
- Individual setting of t1/t2
- 2 change-over contacts
- Potential-free triggering

**CTI-129**
- Multifunctional Cycle Timer
- Reset interval can be set separate
- 2 change-over contacts

**Triggering**

1. E-Triggering Function (page 52)
2. F-Triggering
3. PNP
4. PNP

**Time range**

**Partial range**

A. 0,1s - 15h
B. 2x 0,01s - 15 min
C. 2x 0,1s - 15 min

**Diagram**

Connection with socket C11A

**Ordering no.**

CPX-129/...
CFG-126/...
CTI-129/...

**System socket C11A**

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

**Ordering example**

Timer CPX-129/ATX
Socket C11A

- Function Page: 52
- TF-60 setting: Page 53
- Socket and Accessories: Page 97
Plug-in Time Delay Relay

CEA-126
Multifunctional Time Delay Relays
- on delay or off delay
- 2 change-over contacts
- potential-free triggering

CWR-102
Single Shot Relay
- 3 functions
- function t1 = t2
- 2 change-over contacts
- potential-free triggering

Time Delay Relays
Field proven since many years.
The plug-in timer series from comat
for highest quality requirements and
unattained versatile operation.

Triggering
1. Triggering Function (page ✹)

Time range
Partial range
0,1s-15min
0,1-1,5s

Diagram
Connection with socket C11A

Ordering no.
CEA-126/...     CWR-102/...

System socket C11A
Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

Ordering example
Timer CEA-126/ATX
Socket C11A

EF-3 W

Max

AC 220-240V
ATX
AT10-120V
ANP
UC24-48V
UFK
UC12V
UCB
DC110-240V
DNX

AC220-240V
ATX
AT10-120V
ANP
UC24-48V
UFK
UC12V
UCB
DC110-240V
DNX

System socket C11A
Figure: with plug-in neutral conductor connector C-A2 (standard delivery).
**Time Delay Relays**
Electronic Timer Relay with mains triggering and 2 change-over contacts. Digital timing generated with RC-Oscillator and frequency conductor with LED indication of relay function.

**CX 38**
- **Multifunctional Time Delay Relays**
  - 3 functions
  - delay time ranges can be set individually
  - 2 change-over contacts
  - mains triggering

**CX 39**
- **Star-Delta Timer**
  - adjustable \( \Delta \) change-over pause.
  - On delay with instantaneous contacts (R1 = immediately / R2 = \( t \))
  - 2 change-over contacts

---

### Ordering example

**Timer CX 38/ATX**  
**Socket C11A**

Function Page: 52;  TF-60 setting: Page 53; Socket and Accessories: Page 97
Time delay Relays

DIN Time Delay Relays

- Multifunction Time Delay Relays
- Extra slime Time Delay Relays 13 mm
- DIN-A (Installation, distribution panel)
- DIN-C (Industry)
- 22.5mm Series
DIN Time Delay Relays (mono-function)

Economy Time Delay Relays
Only 13 or 17,5 mm wide. Ideal for applications with a fixed function E, A or Y. For snap-on installation in accordance with DIN 43880.

<table>
<thead>
<tr>
<th>CRE1</th>
<th>CRA1</th>
<th>AE2</th>
<th>AA2</th>
<th>CY1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy time delay relay</td>
<td>Economy time delay relay</td>
<td>Economy time delay relay</td>
<td>Economy time delay relay</td>
<td>Star-delta time delay relay</td>
</tr>
<tr>
<td>on delay</td>
<td>off delay</td>
<td>on delay</td>
<td>off delay</td>
<td>with adjustable ( \triangle ) interval</td>
</tr>
<tr>
<td>voltage controlled</td>
<td>voltage controlled</td>
<td>voltage controlled</td>
<td>voltage controlled</td>
<td>Safety locking of the ( \triangle ) output</td>
</tr>
<tr>
<td>LED for R.</td>
<td>LED for R.</td>
<td>1 changeover contact</td>
<td>1 changeover contact</td>
<td></td>
</tr>
<tr>
<td>0,5s-30min</td>
<td>0,3s-30min</td>
<td>AE2 0,8s-1,5min</td>
<td>AE2M 0,1-12min</td>
<td>0,5-60s</td>
</tr>
<tr>
<td>0,3s-30min</td>
<td>0,1-12min</td>
<td>AE2M 0,1-12min</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Triggering

- DIN Time Delay Relays  (mono-function)
- Ordering no.
- Ordering example

Function (page 52); TF60 setting (page 53); Socket and Accessories: Page 97
Multifunctional Time Delay Relays

Extra slim 13mm Time Delay Relay System for all timing functions from 50ms up to 60 hours. With only 13mm fitting width especially suited for use in the industrial interface sector.

E-触发 Function (page 6)

Time range ★ TF60 setting (page 6)

0,5s-30min 0,05s-60h 8ms-10h t1: 50ms-60h t2: 50ms-60h

6A 250V~ 6A 250V~ 1,5A 24V= 6A 250V~ 6A 250V~

Economy Time Delay and Blinker Relay
- 3 functions
- voltage controlled
- LED for R

Universal Multifunctional Time Delay Relay
- 2 delay functions
- 2 shot timing modes
- pulse shaping K
- LED for B1 and R

CRV1  CRV2  CSV2  CRV3  CRT3

Multifunctional Time Delay Relay
like CRV2, but with solidstate output and connection for remote potentiometer.

Double Time Delay Relay
- F (E and A) or Q (W and N)
- t1/t2 separately settable
- LED for B1 and R
- Function switch at the right side of the device

Universal Repeat Cycle Timer
- Pulse or pause start
- t1/t2 separately settable
- LED for A1 and R
- Function switch at the right side of the device

Ordering example
Timer CRV1/AC230V


Ordering no.

AC 50/60Hz
UC AC/DC
DC >10%

Built-in potentiometer SP-01/100k (page 9)

CRV, CSV  CRT

Function: I/P
Function: F/Q
Function: L/P
Function: L/Q

CRV1 CRV2 CSV2 CRV3 CRT3

Function Page: 52; ★ TF-60 setting: Page 53; Socket and Accessories: Page 97

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This edition replaces all previous issues. Availability, errors and specification subject to change without notice.

83 AAT 2008
Multifunctional Time Delay Relays
Universal Function Relay

AM1
Economy Time Delay and Blinker Relay
- on delay
- off delay
- one shot leading edge
- two shot leading edge
- pulse shaping K
- voltage controlled
- Output-LED

AM2
Universal Time Delay Relay
- on delay
- off delay
- one shot leading edge
- pulse shaping K
- voltage controlled
- Output-LED

AM3
Universal Time Delay Relay
- on delay
- off delay
- one shot leading edge
- pulse shaping K
- voltage controlled
- Output-LED

CIM1
Universal Function Relay
- 9 functions
- stepping switch (S)
- staircase lighting timer (LS)
- 1 change-over contact
- hand function switch for maintenance functions (ON/OFF)

Ordering no.
AM1 / ... V
AM2 / ... V
AM3 / ... V
CIM1 / ... V

Ordering example
Universal function relay
CIM1/UC24-240V

Function Page: 52; ★ TF-60 setting: Page 53; Socket and Accessories: Page 97
Multifunctional Time Delay Relays

CM1
Universal Time Delay Relay
- on delay
- off delay
- one shot leading edge
- pulse shaping K
- voltage controlled
- LED for B1 and R

CM1L
Universal Time Delay Relay like type CM1, but with extended time range.

CM2
Universal Time Delay Relay
- 7 functions
- Maintenance switch ON/OFF
- 2 separate change-over contacts
- supply voltages: DC12-24V or DC24-48/AC24-240V

CM3
Universal Time Delay Relay
- 7 functions
- Maintenance switch ON/OFF
- 2 separate change-over contacts
- supply voltages: DC12-24V or DC24-48/AC24-240V

17.5 mm Time Delay Relay System in compact design.
(For snap-on installation in accordance with DIN 43 880, see series DINA and C13.)

Function Page: 52; TF-60 setting: Page 53; Socket and Accessories: Page 97
**Multifunctional Time Delay Relays**

**CNR1**
- Time Delay Relay, no auxiliary voltage
- Function runs after cut off power supply
- Minimum triggering time 150 ms only

**CT1**
- Universal Repeat Cycle Timer
- Pulse or pause start
- $t_1$/$t_2$ separately settable
- LED for A1 and R

**CT1L**
- Universal Repeat Cycle Timer
- Like CT1 but with extended time range.

### Specifications
- **Function** (page 52)
- **TF-60 setting**: Page 53
- **Socket and Accessories**: Page 97
- **Ordering example**: Timer CIM1/UC24-240V

### Ordering no.
- **CNR1**
- **CT1**
- **CT1L**

- **Time range**
  - Partial ranges
  - $t_1$: 0,1s-12min
  - $t_2$: 0,5s-60min
  - $t_1$: 0,3min-30h
  - $t_2$: 0,5s-60min

- **Triggering**
  - No auxiliary voltage

- **Max**
  - 5A 250V~
  - 6A 250V~

- **Ordering example**
  - Timer CIM1/UC24-240V

### CE and others: www.comat.ch
Multifunctional Time Delay Relays

ECO 31

Economy Time Delay and Blinker Relay
• 3 functions
• voltage controlled
• LED for R

ECO 32

Multifunctional Time Delay Relay
• 2 delay functions
• 2 shot timing modes
• blinker pulse shaping K
• LED for R

Multifunctional Time Delay Relays 22.5 mm for timing functions from 0.1s up to 12 hours.

Triggering

Time range
★ TF60 setting (page ♦)

Time range

Ordering example
Timer ECO31/AC230V

Function Page: 52; ★ TF-60 setting: Page 53; Socket and Accessories: Page 97

ECO32 / ....VECO31 / ....V
Time Delay Relays

Specially Time Delay Relays

- CN Series
- SFR Serie Amplifier Relays,
  Switching Amplifier
- SBV Amplifier Blinker
- CPF Pulse Shaper
- CCX Preset Counters
Industrial Time Delay Relays

CNS-4
Cascade Relay
• ON cascades
• ON/OFF cascades
• 4 outputs
• detachable terminals

CNS-4

Time range
Partial range

Trigerring

On delay

Off delay

AC 50/60Hz
UC AC/DC

Ordering example
Cascade Relay CNS-4/ATX

Specially Time Delay Relays
• 2 functions
• connections for external potentiometer
• 4 outputs
• detachable terminals
• seismic approved according IEE 323 and IEE 344

Ordering example
Specially Time Delay Relay CN 135

Built-in potentiometer
SP-01/1MΩ (page *)
Universal Timer Module

CU23

Universal Timer Module for Print Mounting
- the time module for industrial application
- 5 functions
- t-stop
- PNP/NPN output

Ordering example
Timer module CU23/DC12-24V

Example for external wiring

Time range
Partial range
0.01s - 300 min
s, min
120 mA 24V

Triggering
Programming

Wiring (view from the back)

Built-in potentiometer (page *)
SP-O1/100k
SP-O1/1MΩ

Time stop (t-STOP) = the elapsing time is interrupted
Amplifier Relay
Supply unit with integrated switching amplifier for 3-wire PNP sensors, NAMUR as per DIN 19234 as well as for contact triggering also with external power supply. The input wiring is specifically suitable for long feed wires.

Amplifier Relay
- switching amplifier for:
  - PNP 3 wire sensors
  - NAMUR sensors
- potential-free contact
- integrated sensor supply voltage 24 V
- The input wiring is specifically suitable for long connection lines

Amplifier Relay
- switching amplifier for:
  - PNP 3 wire sensors
  - NAMUR sensors
- potential-free contact
- integrated sensor supply voltage 14 V
- The input wiring is specifically suitable for long connection lines

Diagram
Connection with socket C11A

Output supply
DC output supply
Output voltage
Output current max.

Triggering
NAMUR sensor
Not damped
Damped
Wire break

PNP three-wire sensor

External power supply/contact
On-signal
Off-signal
Triggering current
Parallel load energy

Galvanic isolation
>2kV (switching to supply and output)
>2kV (switching to supply and output)

Ordering no.
Ordering example
Amplifier Relay SFR1/AC 220-240 V
Socket C11A

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).

Amplifier Relay SFR1
- Switching amplifier for:
  - PNP 3 wire sensors
  - NAMUR sensors
- Potential-free contact
- Integrated sensor supply voltage 24 V
- The input wiring is specifically suitable for long connection lines

Amplifier Relay SFR2
- Switching amplifier for:
  - PNP 3 wire sensors
  - NAMUR sensors
- Potential-free contact
- Integrated sensor supply voltage 14 V
- The input wiring is specifically suitable for long connection lines

Output supply
DC 22...25 V
100 mA

Triggering
NAMUR sensor
Output active
Output inactive

PNP three-wire sensor

External power supply/contact
On-signal
DC +18...+30 V
7 mA bei DC 24 V
100 V 10 ms/1 Hz

Off-signal
DC –30...+7,5 V
7 mA bei DC 24 V
100 V 10 ms/1 Hz

Triggering current
7 mA bei DC 24 V

Parallel load energy
100 V 10 ms/1 Hz

Galvanic isolation
>2kV (switching to supply and output)
>2kV (switching to supply and output)

Ordering no.
Ordering example
Amplifier Relay SFR1/AC 220-240 V
Socket C11A

Figure: with plug-in neutral conductor connector C-A2 (standard delivery).
Amplifier Relays

SBV11
Amplifier-Blinker
With solid state output.
Adjustable electronic flasher for 60–90 pulses/min.
Switching voltage 10–45V DC and switching loads up
to 10A. The short circuit limiter and the overload proof
design allows free switching of filament lamps in
general but as well as all ohmic, inductive and capacitive
loads.
Triggering supply is indicated by LED.

60–90 l/min
10A 10–45V

SSV11
Switching Amplifier
With solid state output.
For applications in automation where high switching
cycles and loads up to 10A at 10–45V DC are required.
For example for solenoids, magnetic clutches and other
ohmic inductive or capacitive loads. With built-in short
circuit limiter and over-load protection circuit, this amplifier
switches wear free and guarantees high service life.
LED display for trigger signal.

10A 10–45V

Blinker and Amplifier
Relay with solid state output specially suitable for
frequent switching cycles.

Ordering example
Amplifier relay SBV11/DC 10–45V
Socket CS11

Comat AG • Bernstrasse 4 • CH-3076 Worb • Schweiz
www.comat.ch Tel. +41 (0)31 838 55 77 • Fax. +41 (0)31 838 55 99 • info@comat.ch

This edition replaces all previous issues.
Availability, errors and specification subject to change without notice.
CPF Pulse Shapers

with the timing functions K, L and A are specialist devices for the lengthening or the limitation of control pulses. In this fully electronic design with the facility for also connecting NAMUR sensors they are the ideal interface modules in modern control systems. Always there where fast processes, high rotations, i.e. the briefest pulses, are to be evaluated, the cost-effective solution is: CPF Pulse shapers.

**Function (page ✹)**

**Time range**

<table>
<thead>
<tr>
<th>NAMUR sensor</th>
<th>Three-wire sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>15…32V</td>
<td>15…32V</td>
</tr>
<tr>
<td>E1</td>
<td>CPF</td>
</tr>
<tr>
<td>S</td>
<td>CPF</td>
</tr>
</tbody>
</table>

| Ordering no. | CPF11/DC24V | CPF22/DC24V |

**Single Channel Pulse Shaper**
- Input reversible (E-E)
- Input and output times separately settable
- 3 (6) functions to choose
- Additional free wheel diode 1A
- LED display for E and Q

**Double Channel Pulse Shaper**
- Input/output galvanically isolated 4kV
- Input and output times separately settable
- 2 functions to choose
- LED output display for each channel

**Ordering example**

Pulse shaper CPF11/DC24V

**Function Page: 52; TF-60 setting: Page 53; Socket and Accessories: Page 97**
Preset Counters

CCX-350

Electronic pre-select counter with 2 change-over contacts.
Digital value display with LED function indication.
Suitable for front panel mounting.

Function

Preselection

Count frequency

Diagram

Connection with socket CS11

Ordering example

Counters CCX-350
Socket CS11

Functions

Q is active after reaching the preselected number of pulses.
Q and C can be reset with the reset button.

Q is active during the preselected number of pulses and can only be reactivated after a reset.
Q and C can be reset with the reset button.

Q is active for 175 ... 125 ms on the preselected pulse.
The cycle starts again at the beginning.
Q and C can be reset with the reset button.

Ordering number

Preset Counters

CCX-350

Switching after the preset number of pulses are reached.
Triggering:
- potential-free contact
- NAMUR sensor
- PNP

Preset Counters with display

Switching after the preset number of pulses are reached.
- 7 digit LED display
Triggering:
- potential-free contact
- NAMUR sensor
- PNP
Comat products comply with different international standards and are certified accordingly.
A detailed list can be found on our web page:
www.comat.ch
Time Delay Relays

Sockets and Accessories for Time Delay Relays

Sockets for Time Delay Relays
- Economy Sockets
- System Sockets
- Chassis Sockets
- Accessories pour Sockets

Accessories for Time Delay Relays
- External Potentiometer
- Surface Mounting Case
- Divers
## Socket for Time Delay Relays

The image shows various socket types for time delay relays, each with a description and diagram. The sockets are labeled as follows:

- **C11A**: System socket 11-pole, with white cover and plug-in connector C-A2. (standard delivery)
- **EC11**: Economy socket 11-pole
- **CS11**: Socket 11-pole, snapped cover sheet with wiring diagram. (backside neutral white)
- **EC8**: Economy socket 8-pole
- **CS8**: Socket 8-pole
- **C12B1**: System Socket 11-pole, like C12B, but with imprinted contact diagram for 3 pole industrial relays.
- **C12B0**: System Socket 11-pole, similar to C12B, prepared for CT system (without SD-3, SD-1).
- **CS18**: Socket 8-pole for time delay relays C81...C85 series.
- **11 PGL**: Socket 11-pole for chassis mounting with soldering pins.

### Socket Types

<table>
<thead>
<tr>
<th>Socket Type</th>
<th>Suitable for Product Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>C11A</td>
<td>System-Socket</td>
</tr>
<tr>
<td>EC11</td>
<td>Economy-Socket</td>
</tr>
<tr>
<td>CS-11</td>
<td>Socket</td>
</tr>
<tr>
<td>C12B</td>
<td>System Socket</td>
</tr>
<tr>
<td>C12B1</td>
<td>System Socket</td>
</tr>
<tr>
<td>C12B0</td>
<td>System Socket</td>
</tr>
<tr>
<td>CS-8</td>
<td>Socket</td>
</tr>
<tr>
<td>EC-8</td>
<td>Economy Socket</td>
</tr>
<tr>
<td>11 PGL</td>
<td>Chassis Socket</td>
</tr>
</tbody>
</table>

### Connection Layout

The connection layout is shown from left to right, with terminal numbers indicating where to connect specific components for the different socket types.

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**Function Page**: 52; **TF-60 setting**: Page 53; **Socket and Accessories**: Page 97

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**This edition replaces all previous issues.**

**Availability, errors and specification subject to change without notice.**
## Socket accessories and dimensions

### Sockets

<table>
<thead>
<tr>
<th>Socket accessories</th>
<th>Description</th>
<th>C11A</th>
<th>EC-11</th>
<th>CS-11</th>
<th>C12B</th>
<th>C12B0</th>
<th>C12B1</th>
<th>EC-8</th>
<th>CS-8</th>
<th>CS-18</th>
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</thead>
<tbody>
<tr>
<td>CA-11</td>
<td>Coding ring (VE 5 pieces)</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA-8</td>
<td>Coding ring (VE 5 pieces)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-A2</td>
<td>Neutral connector bridge (VE 5 or 50 pieces)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SC-3</td>
<td>A1-Connector (VE 10 pieces)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>LH-1</td>
<td>Marking label holder (VE 5 pieces)</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>SL-36</td>
<td>Marking label holder (VE 5 pieces)</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>SP-36</td>
<td>Marking label strips (VE 5 pieces)</td>
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<td></td>
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<tr>
<td>PS-W</td>
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<tr>
<td>L-16</td>
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<td>SD-1</td>
<td>Cover lid transparent (VE 5 pieces)</td>
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<td>SD-1W</td>
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</tr>
<tr>
<td>SS-T</td>
<td>Cover transparent</td>
<td>●</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS-W</td>
<td>Cover white</td>
<td>●</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA-0</td>
<td>Wall bracket</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Socket accessories and dimensions

<table>
<thead>
<tr>
<th>Sockets</th>
<th>Socket accessories</th>
<th>Description</th>
<th>C11A</th>
<th>EC-11</th>
<th>CS-11</th>
<th>C12B</th>
<th>C12B0</th>
<th>C12B1</th>
<th>EC-8</th>
<th>CS-8</th>
<th>CS-18</th>
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<tbody>
<tr>
<td>TS 35</td>
<td>CA-11</td>
<td>Coding ring (VE 5 pieces)</td>
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<td>CA-8</td>
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<td></td>
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<tr>
<td></td>
<td>C-A2</td>
<td>Neutral connector bridge (VE 5 or 50 pieces)</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>SC-3</td>
<td>A1-Connector (VE 10 pieces)</td>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LH-1</td>
<td>Marking label holder (VE 5 pieces)</td>
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<tr>
<td></td>
<td>SP-36</td>
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<td>PS-W</td>
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</tr>
<tr>
<td></td>
<td>L-16</td>
<td>Marking label strips (VE 5 pieces)</td>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>SD-1</td>
<td>Cover lid transparent (VE 5 pieces)</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>SD-1W</td>
<td>Cover lid white</td>
<td>●</td>
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<tr>
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<td>SS-W</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>SA-0</td>
<td>Wall bracket</td>
<td>●</td>
<td></td>
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</tr>
</tbody>
</table>

### Diagrams

- **Function Page:** 52  
- **TF-60 setting:** Page 53  
- **Socket and Accessories:** Page 97
Accessories pour Time Delay Relays

External potentiometer

Front panel mounting FZ-50L
Consisting of front frame with cover, retaining clips and socket (11 PGL).

Front panel mounting FZ-23
Consisting of front frame with cover, retaining clips.

Front panel mounting FZ-40
Consisting of front frame with cover, retaining clips.

Marking labels
Large and small for relay system C13.

Transparent covers

Retaining clips
Matching diverse cases and sockets.

Retaining clips
Matching diverse cases and sockets.

Accessories
### Accessories pour Time Delay Relays

#### External potentiometer

<table>
<thead>
<tr>
<th>Type</th>
<th>Time delay relays</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-01/100kΩ</td>
<td>CSV2 CM2</td>
</tr>
<tr>
<td>SP-01/1MΩ</td>
<td>CS1 CS2 RS 121.P CN 135</td>
</tr>
</tbody>
</table>

#### Accessories for time delay relays and AP-surface mounting case

<table>
<thead>
<tr>
<th>Type</th>
<th>Descriptions</th>
<th>Product families</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS13-G</td>
<td>Marking label strip large</td>
<td></td>
</tr>
<tr>
<td>BS13-K</td>
<td>Marking label strip small</td>
<td></td>
</tr>
<tr>
<td>FA-50</td>
<td>Front cover</td>
<td></td>
</tr>
<tr>
<td>FS-23</td>
<td>Front cover</td>
<td></td>
</tr>
<tr>
<td>FS-40</td>
<td>Front cover</td>
<td></td>
</tr>
<tr>
<td>FS-C5</td>
<td>Cover for relay C30</td>
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</tr>
<tr>
<td>FS-R</td>
<td>Cover for relay C20/C30</td>
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</tr>
<tr>
<td>FS-..</td>
<td>Cover for relay C5-..</td>
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<tr>
<td>FZ-23</td>
<td>Front mounting set</td>
<td></td>
</tr>
<tr>
<td>FZ-40</td>
<td>Front mounting set</td>
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</tr>
<tr>
<td>FZ-50L</td>
<td>Front mounting set (incl. Socket 11PGL)</td>
<td></td>
</tr>
<tr>
<td>GC-T</td>
<td>Relay retaining clip transparent</td>
<td></td>
</tr>
<tr>
<td>GC-W</td>
<td>Relay retaining clip white</td>
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</tr>
<tr>
<td>HF-24</td>
<td>Retaining clip</td>
<td></td>
</tr>
<tr>
<td>HF-32</td>
<td>Retaining clip for relay C30</td>
<td></td>
</tr>
<tr>
<td>HF-33</td>
<td>Retaining clip for relay C20/C30</td>
<td></td>
</tr>
<tr>
<td>HF-50</td>
<td>Retaining clip</td>
<td></td>
</tr>
<tr>
<td>S3-C</td>
<td>Retaining clip for relay C3</td>
<td></td>
</tr>
<tr>
<td>S3-CT</td>
<td>Retaining clip for relay C2/C3</td>
<td></td>
</tr>
<tr>
<td>RG</td>
<td>Surface mounting case DIN rail</td>
<td></td>
</tr>
<tr>
<td>RG-D2</td>
<td>Surface mounting case DIN rail</td>
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</tr>
<tr>
<td>RG-C2</td>
<td>Surface mounting incl. Socket CS-8</td>
<td></td>
</tr>
<tr>
<td>RG-C3</td>
<td>Surface mounting incl. Socket CS-11</td>
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</tr>
<tr>
<td>RG-50</td>
<td>Surface mounting incl. Socket CS-11</td>
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</tr>
<tr>
<td>RG-23</td>
<td>Surface mounting incl. Socket CS-11</td>
<td></td>
</tr>
<tr>
<td>RG-40</td>
<td>Surface mounting incl. Socket CS-11</td>
<td></td>
</tr>
</tbody>
</table>

#### Surface Mounting Case with built-in DIN rail or with socket (Screws touch safe)

- Gray polymer with or without window...

<table>
<thead>
<tr>
<th>Type</th>
<th>Socket</th>
<th>W x H</th>
</tr>
</thead>
<tbody>
<tr>
<td>RG</td>
<td>DIN</td>
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