

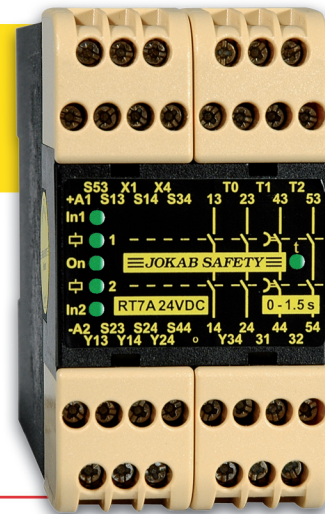
Flexible Universal Safety Relays

Safety Facts

Meeting Existing Standards

“A fault in the control circuit logic, or failure of or damage to the control circuit must not lead to dangerous situations.”

This is the declaration of the EU's Machinery Directive and EN 292-2: 1991 under the heading 1.2.7. *“Failure of the control circuit”*. The directive implies that no person should be put at risk if for example, a relay sticks or if a transistor or two electrical conductors short-circuit.



Supervise Safety Devices

A safety relay will fulfill these requirements with inputs that are checked for short-circuits and dual redundant circuits that are checked at each operation. This can be compared to the dual brake circuits in a car. If one of the circuits is faulty the other will stop the car. In a safety relay there is an additional function which only allows a machine to start if both circuits are ok.

The safety standard describes various safety categories depending on the level of risk and application. One single universal relay with selectable safety categories solves this.



Light Beams



Light Curtains



3-Position Devices



2-Hand Devices



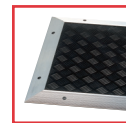
Safety Interlock Switches



Emergency Stop Buttons



Safety Strips and Bumpers



Safety Guard Mats

Safe Stops and Reliable Restarts



Dual stop signals when the gate is opened...

Entering or putting a hand or limb into a hazardous area, must cause all machines that can cause a personal injury to stop safely. Many serious accidents occur when machinery is believed to have stopped but is in fact only pausing in its program sequence. The safety relay monitors the gate interlock switch, the cables and gives dual stop signals.



Timed reset when you cannot see the entire risk area...

Sometimes a double reset function is necessary to make sure that no one is left behind in the risk area. First, after ensuring no other person is inside the hazardous area, the pre-reset button must be activated, followed by the reset button outside the risk area within an acceptable time period e.g. 10 seconds. A safety timer and a safety relay can provide this function.



Supervised reset when there can be a person within the risk area...

Make sure that nobody is within the restricted area when activating the reset button. A supervised reset button must be pressed and released before a reset can occur. Many serious accidents have been caused by an unintentional and unsupervised reset.



Automatic reset for small hatches...

Where body entry is not possible through a hatch, the safety circuit can be automatically reset.

The safety relays are reset immediately when the hatch interlock switch contacts are closed.

VISION + VERSATILITY = VALUE

JOKAB SAFETY

A MEMBER OF THE ABB GROUP

The Smallest and Most Flexible Safety Relays on the Market

VISION + VERSATILITY = VALUE

We have the most flexible safety relays on the market. Our first universal relay was developed nearly 20 years ago. Today the flexibility is even greater and the size has been reduced by 85%.

A universal relay is a safety relay with various input options for various safety devices and risk levels. Internally, the safety relay is of the highest safety level (category 4 according to EN 954-1/ EN ISO 13849-1). A machine supplier can therefore, with one single safety relay, select the input configuration that best suits his customer's safety requirements. In addition, our safety relays have detachable connector blocks for ease of replacement and testing.

We recommend the selection of one of our latest universal relays in the RT-series. These are both practical and cost effective. To facilitate the choice of safety relay or combinations of safety relays, please see the table below dividing the safety relays into application fields.

Is a universal relay expensive? No, our latest patented construction is extremely simple and the number of major components is less compared to our previous universal relays. This means that our safety relays are even more reliable and economical than before.

Which Safety Relay should you choose?	Safety Relays								Safety Timers		Expansion Relays			
	RT6	RT7	RT9	JSBRT11	JSBR4	JSBT4	BT50T/BT51T	BT50/BT51	JSH1A/B	JSH2A/B/C	E1T	JSR1T	JSR2A	JSR3T
Application Fields														
Interlocking Switch/Gate/Hatch	•	•	•	•	•	•	•	•						
Light Curtains	•	•	•	•										
Light Beams	•	•	•	•										
Safety Mats	•	•	•		•	•								
Contact Strips	•	•	•		•	•								
Two-Hand Control Device					•									
Emergency Stop	•	•	•	•	•	•	•	•						
Hold to Run/Enabling Device	•	•	•	•	•	•				•				
Foot Control Device	•	•	•	•	•	•				•				
Area Supervision	•	•	•	•	•	•								
Time Resetting									•					
Time Bypassing									•	•				
Inching										•				
Output Expansion	•	•	•	•		•	•	•			•	•	•	
Delayed Output		•					•				•	•		•

Unparalleled Advantages

- Universal relays
- Excellent reliability
- Approved in Europe, USA, Canada
- Supervised reset
- Time reset
- Small and compact
- Detachable connector blocks
- Low power consumption
- Permits the use of long runs of cables
- EX compatibility
- Functions set by external hardwired links
- LED indication and outputs for indication
- Powerful switching capacity