



NOTHING IS EASIER...

**EFFICIENT SUPPRESSION
GIVES YOU 25 POINTS!**

When installing a machine or a system that has to meet the safety-related requirements of category 2 of ISO EN-13849, you have to respect CCF (chapter 6.2.5). CCF means "Common Cause Failure" and describes failures with a common cause.

These failures can be prevented with the appropriate steps that are described in the standards. When these measures are implemented, you score points. You have to have at least 65 points (out of 100) so that the machines and systems are not evaluated as inadequate.

When looking at the steps (appendix F) you will immediately see that the biggest number of points is given for "guaranteeing electromagnetic compatibility". If you can prove that your machines and systems are installed in a way that they are classified as safe according to EMC requirements, you will get 25 points.

Step	Points
Separation	15
Diversity	20
Design/application/experience – contactor against overvoltage, overcurrent, overpressure etc.	15
Design/application/experience – use of proven components	5
Assessment/analysis	5
Competency/training	5
→ Environment – protection from dirt and electromagnetic interference (EMC)	25
Other impacts	10
Total	100

Murrelektronik offers a wide range of products that will help you build an electromagnetically compatible structure for machines and systems: EMC filters, suppressors for contactors, motors and valves together with ground straps (grounding and equipotential bonding) are the perfect tools to reach optimum results with little effort!





HIGHLIGHTS

- It is necessary to review the CCF to fulfill the requirements of category 2 of ISO EN-13849.
- Optimum suppression can be reached by taking small steps and making small expenditures.
- You have to have 65 points out of 100 to meet the safety-related requirements according to ISO EN-13849.
- The CCF value is increased by 25 points with a compatible EMC installation and then the machine or system will operate safely and efficiently.



SUPPRESSORS FOR CONTACTORS



	Art. No.	Voltage	Suppression	Approval	Suitable for
	21054	110 V AC/DC	RC	UL+CSA	DIL E ...
	26086	230 V AC/DC	VDR	UL+CSA	
	26013	24...48 V AC/DC	VDR+LED	CSA	X-Start DIL M7 ...15
	20007	110...230 V AC/DC	RC	CSA	
	26015	24...48 V AC/DC	VDR+LED	CSA	X-Start DIL M17...32
	20008	110...230 V AC/DC	RC	CSA	
	20009	110...230 V AC/DC	RC	CSA	



SUPPRESSORS FOR CONTACTORS






	Art. No.	Voltage	Suppression	Approval	Suitable for
	2000-68500-110 0000	24...240 V DC	Diode	UL+CSA	3 RT 20.15/16/17/18 for size S00
	2000-68500-441 0000	24 V AC/DC	VDR+LED	UL+CSA	
	2000-68500-741 0000	110 V AC/DC	VDR+LED	UL+CSA	
	2000-68500-730 0000	110 V AC/DC	RC	UL+CSA	
	2000-68500-247 0000	230 V AC/DC	VDR+LED	UL+CSA	
	2000-68500-232 0000	230 V AC/DC	RC	UL+CSA	
	2000-68400-201 0000	24 V DC	Diode+LED	UL+CSA	3 RT 20.25/26/27/28 for size S0
	2000-68400-441 0000	24 V AC/DC	VDR+LED	UL+CSA	
	2000-68400-741 0000	110 V AC/DC	VDR+LED	UL+CSA	
	2000-68400-730 0000	110 V AC/DC	RC	UL+CSA	
	2000-68400-232 0000	230 V AC/DC	RC	UL+CSA	

SUPPRESSORS FOR CONTACTORS



	Art. No.	Voltage	Suppression	Approval	Suitable for
	2000-69400-440 0000	24 V AC/DC	VDR	cULus	Serie TeSys
	2000-69400-740 0000	110 V AC/DC	VDR	cULus	AC coils
	2000-69400-730 0000	110 V AC/DC	RC	cULus	LC 1 D09...D38,
	2000-69400-242 0000	230 V AC/DC	VDR	cULus	LC 1 DT20, DT40
	2000-69400-232 0000	230 V AC/DC	RC	cULus	LC 2 D09...D38
	2000-69300-110 0000	24...240 V DC	Diode	cULus	Serie TeSys
	2000-69300-740 0000	110 V AC/DC	VDR	cULus	DC coils
	2000-69300-730 0000	110 V AC/DC	RC	cULus	LC 1 D09...D38,
	2000-69300-242 0000	230 V AC/DC	VDR	cULus	LC 1 DT20, DT40
	2000-69300-232 0000	230 V AC/DC	RC	cULus	LC 2 D09...D38

SUPPRESSION MODULES FOR MOUNTING ON THE MOTOR

	Art. No.	Voltage	Motor rating	Suppression	Mounting method
	23050	3 X 400 V AC	4 KW	RC	Inside the motor terminal box with adhesive pad
	23115	3 X 400 V AC	7.5 KW	VDR	
	23118	3 X 400 V AC	20 KW	VDR	Snaps onto DIN rail
	23050	3 X 575 V AC	4 KW	RC	
	23170	3 X 400 V AC	4 KW	VDR	With screw fixing on motor terminal box, Metric: M16 x 1.5, M6 ring terminals
	23171	3 X 400 V AC	7.5 KW	VDR	
	23172	3 X 575 V AC	4 KW	VDR	
	23173	3 X 575 V AC	7.5 KW	VDR	
	23175	3 X 575 V AC	7.5 KW	VDR	
	23141	3 X 575 V AC	4 KW	RC	With screw fixing on motor terminal box, Metric: M20 x 1.5
	23145	3 X 575 V AC	10 KW	VDR	

This is only a part of our range of suppressors. For more suppression modules see our general catalog or visit our online shop.