



**duelco**  
SAFETY solutions

# DuelcoSC

safety controller



## The standard in safety technology

### IT PAYS TO USE SAFETY TECHNOLOGY

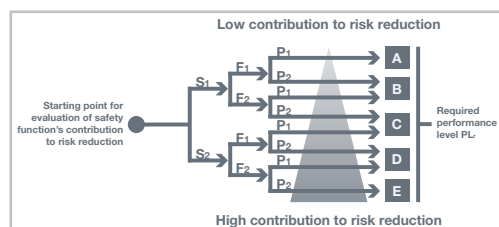
The protection of man and machine through the targeted control of hazardous movements, cost savings thanks to fewer accidents, reduced downtimes and fewer production losses – these are some of the real benefits that you can enjoy when you use Duelco safety components.

### SAFETY COMPONENTS FROM DUELCO

Our safety components comply with international standards and regulations. Our safety relays mostly have been approved by BG, TÜV or another notified body and offers users considerable benefits. Long service life and high availability ensure it is cost-effective to use.

### EN ISO 13849-1

As the successor standard to EN 954-1, EN ISO 13849-1 is based on the familiar categories. Equally, it examines complete safety functions, including all the components involved in their design. EN ISO 13849-1 goes beyond the qualitative approach of EN 954-1 to include a quantitative assessment of the safety functions. A performance level (PL) is used for this, building upon the categories.



Risk analysis in accordance with EN 13849-1

### SAFETY ASSESSMENT IN ACCORDANCE WITH EN/IEC 62061

According to the standard EN/IEC 62061, safety requirements in control technology can be divided into safety integrity levels. SIL 3 represents the highest risk reduction and protection level, where the safety function must always be maintained. The risk is estimated through consideration of the severity of injury (Se), the frequency and duration of exposure to the hazard (Fr), probability of occurrence of a hazardous event (Pr) and the possibility of avoiding or limiting the harm (Av).

Consequences	SE	Class CL = Fr + Pr + Av				
		3-4	5-7	8-10	11-13	14-15
Death, losing an eye or arm	4	SIL 2	SIL 2	SIL 2	SIL 3	SIL 3
Permanent, losing fingers	3		OM	SIL 1	SIL 2	SIL 3
Reversible, medical attention	2			OM	SIL 1	SIL 2
Reversible, first aid	1				OM	SIL 1

Risk assessment and definition of the required safety integrity level (SIL)

## DuelcoSC is modular and programmable



### SYSTEM FEATURES

Configurable over USB from any pc with "Duelco safety designer" software installed.

- Up to 128 digital inputs
- Up to 16 OSSD output pairs
- Up to 14 expansion modules (max 4 of each type)
- External monitoring with the most common fieldbus systems

### DUELCO SAFETY DESIGNER (DSD)

- Easy drag and drop configuration of all safety functions.
- Functional validation of design with safety information.
- Password management.

DSC is certified for SIL3 – SILCL3 – Ple – CAT. 4

DSC offers numerous advantages compared to traditional safety relays.

- Reduced number of components
- Easy electrical installation
- Configuration with logical operations and simple drag and drop software



- DENMARK**  
 Headquarters Duelco A/S  
 Systemvej 8 | DK-9200 Aalborg  
 Tel. +45 7010 1007 | Fax: +45 7010 1008  
 info@duelco.dk | www.duelco.dk
- AUSTRALIA**  
 Sentelec P/L  
 2/35 Ethel Street | Yeerongpilly, Q. 4105  
 Tel. (+61) 7 39481144 | Fax: (+61) 7 39481344  
 E-mail: sentelec@sentelec.com.au | www.sentelec.com.au
- BELGIUM**  
 forTop automation & energycontrol  
 H. Consciencestraat 36 | 1600 Sint-Pieters-Leeuw  
 Contact person: Mr. Peter Heremans  
 Tel. (+32) (0)70 210009  
 E-mail: info@4top.be | www.4top.be
- BRASIL**  
 Produtos Electronicos Metaltex Ltda  
 Rua Jose Rufino, 221  
 São Paulo - SP - Brasil | CEP 04763-280  
 Tel. (+55) (11) 5683 5700  
 E-mail: metaltex@metaltex.com.br | www.metaltex.com.br
- CHINA**  
 OEM Trading (Shanghai) Co., Ltd. Room 1117  
 Huahai China Tower | 888 Renmin Road | Shanghai 200010  
 Tel. (+86) (0)21 3307 0588 EXT 202  
 Fax: (+86) (0)21 3307 0303  
 E-mail: info@oemtrading.com.cn
- CZECH REPUBLIC & SLOVAKIA**  
 OEM-Automatic, spol.s.r.o.  
 Praha 4 | Bavorova 3 A | PSC-140 00, Prag  
 Tel. (+420) 241 484 940 | Fax: (+420) 241 484 941  
 E-mail: tomas.hynek@oem-automatic.cz | www.eig.cz
- ENGLAND**  
 OEM-Automatic Ltd  
 Whitacres, Cambridge Road + Whetstone + Leicester LE8 6ZG  
 Tel. (+44) 116 2849900 + Fax: (+44) 116 2841721  
 E-mail: information@uk.oem.se + www.oem.co.uk
- ESTONIA**  
 OEM EESTI OÜ  
 Pärnu mnt. 139d/1 | 11317 Tallin  
 Tel. (+372) 6550871 | Fax: (+372) 6550873  
 E-mail: info@oem.ee | www.oem.ee
- FINLAND**  
 OEM Finland OY  
 Fiskarsinkatu 3 | 20750 Turku  
 Tel. (+358) 207499499 | Fax: (+358) 207499456  
 E-mail: info@fi.oem.se | www.oem.fi
- FRANCE**  
 JLP Automatismes  
 Rue de la Télématique | BP-781 | 42951 Saint Etienne cedex 9  
 Tel. (+33) 477938858 | Fax: (+33) 477930368  
 E-mail: info@jpautomatismes.fr | www.jpautomatismes.fr
- GERMANY**  
 HÜET Automatisation & Humedical  
 Kaiserstr.161 | D-76133 Karlsruhe  
 Tel. (+49) (0) 721-1566533 | Fax: (+49) (0) 721-2039950  
 E-mail: info@huet-automatisierung.de | www.elobau.com
- HUNGARY**  
 Conpart Kft  
 9072 Győr | Zsigmond kir. út 1  
 Tel. (+36) 96618790 | Fax: (+36) 96310152  
 E-mail: info@conpart.hu | www.conpart.hu
- ICELAND**  
 Samey HF  
 Lyngás 13 | 210 Gardabær  
 Tel. (+354) 510 5200 | Fax: (+354) 510 5201  
 E-mail: samey@samey.is | www.samey.is
- INDIA**  
 Santron Systems India  
 301-302, Vikas Surya Plaza | Commercial Complex,  
 Block-CU | Pitam Pura, Delhi-110034  
 Tel. (+91) 9811282393  
 E-mail: info@santronindia.in | www.santronindia.in
- IRELAND**  
 Automation Direct Ltd.  
 10 Dunsoghly Park | Rathoath Rd | Dublin 11  
 Tel. (+00353) 01 8142974 | Fax: (+00353) 01 8645184  
 E-mail: info@switchingdevices.eu | www.switchingdevices.eu
- ITALY**  
 MasAutomazione S.r.l.  
 Via G. Galilei, 20 | 20090 Segrate (MI)  
 Tel. (+39) 0226922090 | Fax: (+39) 022135420  
 E-mail: info@masautomazione.it | www.masautomazione.it
- MEXICO**  
 AESYESA  
 Cerro del Mirador 1302 | 66058 Escobedo, NL  
 Tel. (+52) 018189012331 | Fax: (+52) 018147375253  
 E-mail: info@aesyesa.com | http://www.aesyesa.com
- NEW ZEALAND**  
 Electropar Limited  
 PO. Box 58623 | 35 Lady Ruby Drive, East Tamaki  
 Tel. (+64) 92742000 | Fax: (+64) 92742001  
 E-mail: mail@electropar.co.nz | www.electropar.co.nz
- NIGERIA**  
 Passam Technical Services  
 NO. 6 KAREEM BANKOLE STREET, OFF CANDOS ROAD  
 BARLWA-IPAJA | LAGOS  
 Tel. (+234) 8028424702 | Fax: (+234) 1-6602914  
 E-mail: passamtech@gmail.com | www.passamtech.com
- NORWAY**  
 Autic System AS  
 PO. Box 2099 | 3103 Tønsberg  
 Tel. (+47) 33300950 | Fax: (+47) 33300955  
 E-mail: autic@autic.no | www.autic.no
- PAKISTAN**  
 A.R. Sultan Ahmed & Co.  
 9- Quetta Walla Building | M.A. Jinnah Road | Karachi 74000  
 Tel. (+92) 21 3 2410747 | Fax: (+92) 21 3 2418140  
 E-mail: datfary1@gmail.com
- POLAND**  
 CONTEC Sp. z o.o.  
 ul. Lipowa 71 | 63-052 Komorniki  
 Tel. (+48) 618108350 | Fax: (+48) 618108445  
 E-mail: contec@contec.net.pl | www.contec.net.pl
- SPAIN**  
 Star Automation S.L.  
 C/ Can Ribes nr 6, Pl. Congost  
 08520 Les Franqueses del Vallès, Barcelona  
 Tel. (+34) 938403217 | Fax: (+34) 938464101  
 E-mail: info@starautomation.es | www.starautomation.es
- SWEDEN**  
 TR Electronic Sweden AB  
 Enevågsvägen 10 B | 132 36 DANDERYD  
 Tel. (+46) 8 756 72 20 | Fax: (+46) 8 756 76 80  
 E-mail: info@tr-electronic.se | www.tr-electronic.se
- SWITZERLAND**  
 Bachofen AG  
 Ackerstrasse 42 | 8610 Uster  
 Tel. (+41) 449441111 | Fax: (+41) 449441233  
 E-mail: sg@bachofen.ch | www.bachofen.ch
- TAIWAN**  
 Chinguan Enterprise Co. Ltd  
 8F, No 936, Sect 4 Win-Sin | Rd 406 Taichung R.O.C.  
 Tel. (+886) 4 22336838 | Fax: (+886) 4 22336836  
 E-mail: info@chinguan.com.tw | www.chinguan.com.tw
- THE NETHERLANDS (INCLUDING LUXEMBURG)**  
 forTop automation & energycontrol BV  
 Oeverlanderweg 2a | 7944 HZ Meppel  
 Tel. (+31) 522 466688 | Fax: (+31) 522 466699  
 E-mail: info@4top.nl | www.4top.nl
- USA**  
 EMS Controls Inc.  
 1324 Mineo Drive | Punta Gorda | FL 33950 Florida  
 Tel. (801) 9414210238 | Fax: (801) 3054158317  
 E-mail: info@switchingdevices.com | www.emscontrols.com

Duelco A/S - Aalborg      Duelco A/S - Sønderborg      Tel. +45 7010 1007 | Fax: +45 7010 1008  
 Systemvej 8      Mommarkvej 5      www.duelco.dk | www.duelco-safety.com  
 DK-9200 Aalborg SV      DK-6400 Sønderborg      info@duelco.dk



**EMERGENCY STOP**

Suitable for monitoring emergency stop buttons. Configurable for both 1 and 2 channel. With short circuit protection in 2 channel.

**DOOR MONITORING**

Suitable for door monitoring. Configurable for 2NC or NC + NO.

**LIGHT CURTAIN**

Suitable for monitoring light curtains. Configurable for both type 2 and type 4.

**SAFETY MAT / SAFETY EDGE**

Suitable for monitoring safety mats and safety edges. As long as the switch is held down by the operator, the machine cannot start. When released, the signal to the safety module is cut off.

**NON-CONTACT SWITCHES**

Suitable for monitoring non-contact switches for doors and gates. When the door opens or is removed, the magnetic contact is activated, which provides a stop signal via the Duelco safety-module.

**TWO HAND CONTROL**

Two hand control module suitable for controlling push buttons. Two hand operations forces the operator to activate the machine with both hands.

**FIELD BUS**

Expansion units for the most common industrial fieldbus systems.

	MAIN UNIT		INPUT EXPANSION			OUTPUT EXPANSION		RELAY OUTPUTS		FIELD BUS						BUS TRANSFER	
	DSC-M1	DSC-M1B02	DSC-M1B	DSC-M116	DSC-M112T8	DSC-MO2	DSC-MO4	DSC-MR2	DSC-MR4	DSC-MBP	DSC-MBD	DSC-MBC	DSC-MBEC	DSC-MBEI	DSC-MBEP	DSC-MBU	DSC-MCT2
<b>APPLICATIONS</b>																	
Emergency stop	•	•	•	•	•												
Door monitoring	•	•	•	•	•												
Safety mat/edge	•	•	•	•	•												
Light curtain	•	•	•	•	•												
Non-contact switches	•	•	•	•	•												
Two hand control	•	•	•	•	•												
Bus Transfer Unit																	•
DSC Bus	•	•	•	•	•	•	•			•	•	•	•	•	•	•	•
Field Bus										Profibus	Devicenet	CANopen	EtherCAT	Ethernet IP	PROFINET	Universal Serial Bus	
<b>DIMENSIONS</b>																	
Width (mm)	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5	22,5
<b>SUPPLY VOLTAGE</b>																	
24V DC	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>RESET TYPES AND TEST</b>																	
Automatic/manual	•	•	•	•	•												
Monitored	•	•	•	•	•												
Manual monitored	•	•	•	•	•												
<b>NUMBER OF OUTPUTS / INPUTS</b>																	
Safety outputs NO								2	4								
Signal output NC								1	2								
OSSD safety output (pairs)	2	2				2	4										
Digital signal output	2	2				2	4										
EDM EDM input	2	2				2	4										
Test output	4	4	4	4	8												
<b>LOAD</b>																	
Max. load, output	400mA	400mA				400mA	400mA	6A 250VAC	6A 250VAC								
<b>ORDER INFORMATION</b>																	
	1103400	1103410	1103420	1103421	1103422	1103430	1103431	1103440	1103441	1103450	1103451	1103452	1103453	1103454	1103455	1103456	1103457