

DATA SHEET
Article number : 09916729

# miniature circuit-breakers DLS 6i Zo,5-1

for industrial facilities, Z characteristics, 10 kA



10000 🕸

#### **Function**

The task of miniature circuit breakers is to automatically disconnect circuits in order to protect lines and connected devices. After disconnection, they can be manually reactivated without the fuse sets having to be replaced, for example. Each of our miniature circuit breakers is equipped with a trip-free mechanism, which guarantees safe deactivation even if, for example, a switching knob is mechanically blocked. A key requirement in DIN VDE 0100 is to protect cables, lines and installation devices from overload and shortcircuit. This can be achieved using miniature circuit-breaker (MCBs). In industrial installations and also in commercial buildings, they often take on additional protection of equipment and devices where there are usually stricter requirements than when used in residential buildings. Miniature circuit-breakers utilise both the magnetic and heat effect of the electrical current. If the current jumps to a value that is too high when a short-circuit occurs, the MCB interrupts the circuit using the magnetic field of an energised coil. The heat that develops when there is continuous overload causes the bimetal to warp, which trips the breaker. The DLS 6 family of miniature circuitbreakers, characterised by a large selection of different types for broad application fields, are available for residential and purpose-built facilities, as well as for industrial applications. The compact design provides lots of space for wiring and large clamping area, as well as the option of using conventional wiring rails for easy processing. The variants also have a large, folding label window and a clearly labelled display for the operating status. A number of additional devices such as operating current trip, and auxiliary/fault sensor switches, render possible general-purpose use of the miniature circuit-breakers. Its high rated switching capacity of 10 kA means the DLS 6i variant is particularly suited to usage in industrial systems for example. Also, the large selection of rated currents and tripping characteristics enable the miniature circuit-breaker to be used in a diverse range of applications. Switches with characteristic Z are optimised for fuse-protecting circuits with electrical loads (e. g. semiconductors) with high impedances.

#### **Features**

rated switching capacity 10 kA, screw terminals with strain-relief clamps with wide terminal cross-section range for rail and line wiring on both connection sides, quick fastening for removal of multiple miniature circuit-breakers from the bottom or top interconnection, large, folding label window for a secure hold and protection of the label, use of conventional wiring rails, ON/OFF switch position indicator on the switch toggle, accessories retro-fittable on the right, labelling software free of charge

#### Mounting

quick fastening to mounting rail, any installation position

## **Applications**

suitable for use in power supplies for industrial facilities and purpose-built buildings or buildings for commercial use

#### **Accessories**

terminal caps KA, software DBS, restart locks DEASS, auxiliary switches DHi, trip-indicating auxiliary contact DHi-S, operating current trip DASA, documentation

### Technical data

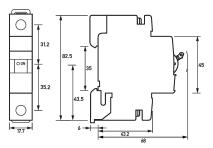
Series	DLS 6i
Number of poles	1
Tripping characteristic	Z
Supply side	left or right
Adjustment range of overload tripping	1.05 1.35
Adjustment range of short-circuit tripping	2 3
Tripping factor over frequency band	1.5 at DC; 1.1 at 100 Hz; 1.2 at 200 Hz; 1.3 at 300 Hz; 1.4 at 400 Hz
Test current factor tripping electromagnetic	3
Test current multiplier, trip, thermal	1.35
Test current factor retaining electromagnetic	2
Test current factor retaining thermal	1.05
Reference temperature thermal release	20 °C
Isolation class	C at 250 V AC; B at 400 V AC

Technical changes reserved 2025\_10\_25 doepke\_09916729\_dbl\_en.pdf 1/3

	load circuit
Specification	load disconnect contact
Rated voltage (AC)	230 V, 400 V
Rated voltage (DC)	60 V
Rated current (AC)	0.5 A
Rated current (DC)	0.5 A
Rated corrent (DC)	·
	10 kA
Rated insulation voltage	2 kV
Rated impulse withstand voltage	4 kV
Rated frequency	50 Hz (16.67 Hz 60 Hz)
Current heat loss per current path	2.6 W
Short-circuit backup-fuse SCPD	125 A
Back-up fuse type	gL, gG
Back-up fuse (textual)	Safety fuse as per DIN EN 0636
Overvoltage class	
	screw terminals with strain-relief clamp top (load circuit)
Protection against direct contact	DGUV V2, VDE 0660-514, finger and back-of-hand proof
Connection C1 Maximum number of	2 (conductors of same type and cross-section)
conductors per terminal	, and the state of
Cross section solid	1-wire: 0.5 mm <sup>2</sup> 25 mm <sup>2</sup>
Connecting capacity flexible	1-wire: 1 mm <sup>2</sup> 16 mm <sup>2</sup>
Cross section flexible with ferrule	0.5 mm² 16 mm²
Cross section riexible with reffole	1-wire: 1.5 mm <sup>2</sup> 25 mm <sup>2</sup>
	<u> </u>
Tightening torque	max. 2.5 Nm
Thickness busbar	max. 3 mm
Thickness busbar cable lug (combined	2 mm
conductors, max)	
Cross section (busbar / busbar fork combined,	25 mm²
max)	
	screw terminals with strain-relief clamp bottom (load circuit)
Protection against direct contact	DGUV V2, VDE o660-514, finger and back-of-hand proof
Connection C2 Maximum number of	2 (conductors of same type and cross-section)
conductors per terminal	
Cross section solid	1-wire: 0.5 mm² 35 mm²
Connecting capacity flexible	1-wire: 1 mm² 25 mm²
Cross section flexible with ferrule	0.5 mm <sup>2</sup> 16 mm <sup>2</sup>
Cross section stranded	1-wire: 1.5 mm <sup>2</sup> 35 mm <sup>2</sup>
Tightening torque	max. 2.5 Nm
Thickness busbar cable lug (combined	2 mm
conductors, max)	2
Cross section (busbar / busbar fork combined,	35 mm²
max)	35 11111-
Thickness busbar	
i nickness busbar	max. 3 mm
2	General data
Operating position	optional
Mechanical endurance	min. 20000 switching cycles
Storage temperature	-40 °C 70 °C
Ambient temperature	-25 °C 70 °C
Climate resistance	damp/heat: constant as per DIN EN 60068-2-78, cyclical as per DIN EN 60068-2-30
Shock resistance	25 g / 11 ms Duration
/ibration resistance	> 15 g acc. to DIN EN 60068-2-59 during a load with I1
Housing type	distribution board housing
nstallation type	Mounting rail (35 mm)
Housing material	Duroplast
Protection class	IP <sub>20</sub>
sealable	true
Width	
	17.7 mm
Height	82.5 mm
Depth	74 mm
nstallation depth	68 mm
Module widths	1
Weight	0.12 kg
Design requirements/Standards	IEC 60947-2, DIN EN 60947-2, VDE 0660-101

Degree of pollution

# **Dimensions**



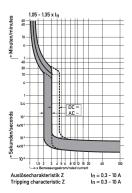
Dimensioned drawing miniature circuit-breakers DLS 6i Zo,5-1

# Wiring example



Wiring example miniature circuit-breakers DLS 6i Zo,5-1

## Diagrams



Diagrams miniature circuit-breakers DLS 6i Zo,5-1

2