Doepke



DATA SHEET

residual current circuit-breaker DFS 2 100-2/0,03-A sensitive to pulsating and alternating currents Type A Article number 09164601



Function

Residual current circuit-breakers (RCCBs) are components for implementing protective measure "Automatic disconnection of the power supply" as per VDE 0100 part 410 or corresponding international installation regulations. Series DFS 2 devices are compact two-pole residual current circuit-breakers for single-phase networks. In the standard design, they only take up two module-width units of space. In spite of the compact dimensions, a number of different tripping currents and characteristics are available at rated currents, depending on the design, up to 125 A. They also have large two-tier terminals for large conductor cross-sections, a practical multi-functional switch toggle and can be provided with labels using free-of-charge software. Type A residual current circuit-breakers are sensitive to pulsating and alternating currents. This function is independent of the mains voltage. Devices in the standard design are intended for monitoring circuits with a rated voltage of 230 V and a rated frequency of 50 Hz.

Features

tripping not dependent on mains and auxiliary voltage, sensitive to AC residual currents and pulsating DC residual currents (type A), compact design for all rated currents, high short-circuit resistance, double-sided two-tier terminals for large conductor cross-section and busbar, switch position indicator, viewing window for labels, multifunction switch toggle with three positions: "on", "off" and "tripped", Neutral conductor position left or right

Mounting

quick fastening to mounting rail, any installation position, supply from any direction

Applications

Power supplies to residential and purpose-built buildings as well as industrial facilities with TN-S, TT and TN-C-S networks. In IT networks, the residual current circuit-breakers of this series can be set to switch off in the event of a second fault, Excluded is the application in TN-C systems and for the protection of installations in which electronic equipment could generate smooth DC currents or residual currents with frequencies other than 50 Hz. Comprehensive protection is not provided in this case. For these applications we recommend our AC/DC sensitive residual current circuit-breakers (Type B or B+).

Accessories

automatic reclosing devices DFA, terminal caps KA, information stickers HAS, auxiliary switches DHi, restart locks DFS WES, software DBS

Technical Data

Technical Data	DFS 2 100-2/0,03-A
Series	DFS 2 A
Number of poles	2
Residual current type	Α
Rated current (AC)	100 A
Rated residual current IAn	0.03 A
Short-time delayed	false
Selective	false
min. Operating voltage range of test circuit	150 V
max. Operating voltage range of test circuit	250 V
Maximum disconnection times	$1 \cdot I\Delta n: \le 300 \text{ ms}; 5 \cdot I\Delta n: \le 40 \text{ ms}$

Doepke

The experts in residual current protection technology

Technical DataDFS 2 100-2/0,03-Aload circuitSpecificationmin. Contact openingRated voltage (AC)Rated voltage (AC)Rated voltage (AC)Rated solt-circuit current100 ARated short-circuit current100 ARated short-circuit current100 ARated short-circuit current100 ARated short-circuit current100 ACapacityRated insulation voltage4 wVRated insulation voltage9 wH0 wH10 wH0 wH10 wH wH10 wH wH10 wH wH10 wH wH10 wH wH10 wH wH11 wH wH wH12 wH wH wH13 wH wH wH14 wH wH wH15 wH wH wH15 wH wH wH16 wH wH wH17 wH wH wH wH18 wH wH wH wH19 wH wH wH wH19 wH wH wH wH wH10 wH wH wH wH wH11 wH wH wH wH wH12 wH wH wH wH wH13 wH wH wH wH wH14 wH wH wH wH15	
SpecificationIoad disconnect contactmin. Contact opening4 mmRated voltage (AC)230 VRated voltage (AC)100 ARated short-circuit current10 kASurge current strength0.25 kAmax. Total rated switching capacity1000 ARated insulation voltage400 VRated insulation voltage4 kVRated insulation voltage4 kVRated insulation voltage6 Wpath0Thermal Backup-fuse OCPD80 AShort-circuit backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGVeutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE 0660-514, finger and back-of-hand proofConnecting capacity flexible1-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm², 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1Cross se	
min. Contact opening 4 mm Rated voltage (AC) 230 V Rated voltage (AC) 230 V Rated short-circuit current 100 A Surge current strength 0.25 kA max. Total rated switching 1000 A capacity 1000 A Rated insulation voltage 400 V Rated insulation voltage 4 kV Rated frequency 50 Hz Current heat loss per current path 6 W path 6 W Short-circuit backup-fuse OCPD 80 A Short-circuit backup-fuse OCPD 80 A Short-circuit backup-fuse OCPD 125 A Back-up fuse type gG Sack-up fuse type gG Connection C1 Maximum 2 (conductors of same type and cross-section) number of conductors per terminal 1-wire: 1.5 mm² 50 mm², 2-wire: 1.5 mm² 16 mm² Cross section solid 1-wire: 1.5 mm² 50 mm², 2-wire: 1.5 mm² 16 mm² Cross section AWG, solid 15 1 Cross section AWG, flexible 15 1 Cross section AWG, flexible with 15 1 Cross section AWG, flexible with 15 1 <td></td>	
Rated voltage (AC) 230 V Rated current (AC) 100 A Rated short-circuit current 10 kA Surge current strength 0.25 kA max. Total rated switching 1000 A capacity 1000 A Rated insulation voltage 400 V Rated insulation voltage 4 kV Rated insulation voltage 4 kV Rated loss per current path 6 W path 80 A Short-circuit backup-fuse OCPD 80 A Short-circuit backup-fuse SCPD 125 A Back-up fuse type gG screw-type terminal top and bottom (load circuit) Neutral conductor position left or right Protection against direct contact DGUV V3, VDE o666-514, finger and back-of-hand proof Connecting C1 Maximum 2 (conductors of same type and cross-section) number of conductors per terminal 1-wire: 1.5 mm ² 50 mm ² ; 2-wire: 1.5 mm ² 16 mm ² Consection AWG, solid 1-wire: 1.5 mm ² 50 mm ² ; 2-wire: 1.5 mm ² 16 mm ² Consection AWG, stranded 15 1 Cross section AWG, stranded 15 1 Cross section AWG, flexible 15 1	
Rated current (AC) 100 A Rated short-circuit current 10 kA Surge current strength 0.25 kA max. Total rated switching 1000 A capacity 1000 A Rated insulation voltage 4 kV Rated insulation voltage 4 kV Rated insulation voltage 4 kV Rated frequency 50 Hz Current heat loss per current path 6 W Thermal Backup-fuse OCPD 80 A Short-circuit backup-fuse SCPD 125 A Back-up fuse type gG Screw-type terminal top and bottom (load circuit) left or right Protection against direct contact DGUV V3, VDE o660-514, finger and back-of-hand proof Connecting Canductors per terminal 2 (conductors of same type and cross-section) Cross section solid 1-wire: 1.5 mm ² 50 mm ² ; 2-wire: 1.5 mm ² 16 mm ² Cross section solid 1-wire: 1.5 mm ² 50 mm ² ; 2-wire: 1.5 mm ² 16 mm ² Cross section AWG, solid 15 1 Cross section AWG, flexible 15 1 Cross section AWG, flexible with forrule 15 1 Cross section AWG, flexible with forrule 15 1 <	
Rated short-circuit current10 kASurge current strength0.25 kAmax. Total rated switching capacity1000 ARated insulation voltage4 kVRated inpulse withstand voltage4 kVRated frequency50 HzCurrent heat loss per current path6 WShort-circuit backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGScrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE 0660-514, finger and back-of-hand proofConnecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Tightening torque2.5 Nm 3 NmGeneral data14 a	
Surge current strength0.25 kAmax. Total rated switching capacity1000 ARated insulation voltage400 VRated inpulse withstand voltage4 kVRated frequency50 HzCurrent heat loss per current path6 WBackup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data14ta	
max. Total rated switching capacity1000 ÅRated insulation voltage4,00 VRated insulation voltage4,kVRated inpulse withstand voltage4,kVRated frequency50 HzCurrent heat loss per current path6 WThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ÅBack-up fuse typegGScrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Consection solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Tightening torque2.5 Nm 3 NmGeneral data2.5 Nm 3 Nm	
capacityRated insulation voltageRated insulation voltageRated impulse withstand voltageRated frequencySo HzCurrent heat loss per current pathThermal Backup-fuse OCPDBack-up fuse typeGGScrew-type terminal top and bottom (load circuit)Neutral conductor positionProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminalCross section solid1-wire: 1.5 mm²50 mm²; 2-wire: 1.5 mm²16 mm²Cross section AWG, solidCross section AWG, flexibleCross section AWG, flexibleTightening torque2.5 Nm3 NmCincutor conductorConnecting capacity flexible1-wire: 1.5 mm²13 mm²Cross section AWG, flexible151Cross section AWG, flexi	
Rated insulation voltage400 VRated impulse withstand voltage4 kVRated frequency50 HzCurrent heat loss per current path6 WThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGScrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1	
Rated impulse withstand voltage4 kVRated frequency50 HzCurrent heat loss per current path6 WThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGScrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE 0660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data14	
Rated frequency50 HzCurrent heat loss per current path6 WThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGscrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data1	
Current heat loss per current path6 WThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGscrew-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible2.5 Nm 3 NmCross section AWG, flexib	
pathThermal Backup-fuse OCPD80 AShort-circuit backup-fuse SCPD125 ABack-up fuse typegGBack-up fuse typegGProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data16	
Short-circuit backup-fuse SCPD125 ABack-up fuse typegGBack-up fuse typegGNeutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o66o-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque25 Nm 3 NmGeneral data1000000000000000000000000000000000000	
Back-up fuse typegGBack-up fuse typegGNeutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o66o-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data15 1	
screw-type terminal top and bottom (load circuit)Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o66o-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data1	
Neutral conductor positionleft or rightProtection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Tightening torque2.5 Nm 3 NmGeneral data14	
Protection against direct contactDGUV V3, VDE o660-514, finger and back-of-hand proofConnection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, solid15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data15	
Connection C1 Maximum number of conductors per terminal2 (conductors of same type and cross-section)Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data14	
number of conductors per terminalCross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data15	
terminalCross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data14	
Cross section solid1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data	
Connecting capacity flexible1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data	
Cross section stranded1-wire: 1.5 mm² 50 mm²; 2-wire: 1.5 mm² 16 mm²Cross section AWG, solid15 1Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data	
Cross section AWG, solid151Cross section AWG, stranded151Cross section AWG, flexible151Cross section AWG, flexible with ferrule151Tightening torque2.5 Nm3 NmGeneral data	
Cross section AWG, stranded15 1Cross section AWG, flexible15 1Cross section AWG, flexible with ferrule15 1Tightening torque2.5 Nm 3 NmGeneral data	
Cross section AWG, flexible 151 Cross section AWG, flexible with ferrule 151 Tightening torque 2.5 Nm3 Nm General data General data	
Cross section AWG, flexible with ferrule 15 1 Tightening torque 2.5 Nm 3 Nm General data General data	
ferrule Tightening torque 2.5 Nm 3 Nm General data	
General data	
Operating position optional	
max. Operating altitude above 2000 m MSL	
Mechanical endurance min. 5000 cycles	
Electrical endurance min. 2000 cycles	
Surrounding atmosphere normal environmental conditions	
Storage temperature -35 °C 75 °C	
Ambient temperature -25 °C 40 °C	
Climate resistance according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RF	1)
Shock resistance 20 g / 20 ms Duration	
Fatigue limit> 5 g ($f \le 80$ Hz, duration > 30 min.)	
Housing type distribution board housing	
Installation type Mounting rail (35 mm)	
Housing material thermoplastic	
Protection class IP20 (installed: IP40)	
Width 36 mm Height 85 mm	
The second secon	

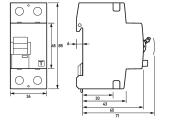
Doepke

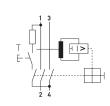
The experts in residual current protection technology

Technical Data	DFS 2 100-2/0,03-A
Depth	75 mm
Installation depth	69 mm
Module widths	2
Weight	0.268 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1
Degree of pollution	2
Certifications	VDE

Dimensions

Wiring example





Dimensional drawing Group view

Wiring diagram