

## **DATA SHEET**

# residual current circuit-breaker DFS 4 063-4/0,03-A NA R

sensitive to pulsating and alternating currents Type A, emergency switching-off function
Article number 09144842





#### **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. 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. DFS with emergency shut-off function ('NA' variant) make it possible to connect control elements, e.g. push-buttons for disconnecting the RCCB in emergency situations. The device is connected via the compact, factory mounted module; parallel wiring of multiple DHS is also possible. The integrated LED signals tripping by a control element as well as a possible wire breakage. In this state, reclosing of the RCCB is prevented.

#### Features

tripping not dependent on mains and auxiliary voltage, sensitive to AC residual currents and pulsating DC residual currents (type A), Only 1/2 module width wider than standard device, No additional power supply required for emergency shut-off circuit, Full range of disconnection features, 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", Connector C1 Neutral conductor position right

#### Mounting

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

#### **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

terminal caps KA, information stickers HAS, restart locks DFS WES, software DBS

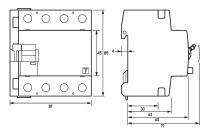
### Technical Data

Technical Data	DFS 4 063-4/0,03-A NA R
Series	DFS 4 A NA
Number of poles	4
Residual current type	A
Rated current (AC)	63 A
Rated residual current I∆n	o.o <sub>3</sub> 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

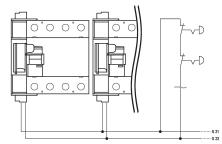
Technical Data	DFS 4 063-4/0,03-A NA R
Internal consumption	max. 1.5 W
	auxiliary device (Emergency shut-off device)
Additional device AE1 operating voltage	50 V 440 V (AC)
Auxiliary device AE1 Voltage of the monitoring circuit	12 V (DC)
Auxiliary device AE1 Voltage of the monitoring circuit	max. 1 mA (DC)
max. Auxiliary device AE1 Cable length of the monitoring circuit	500 m
	load circuit
Specification	load disconnect contact
min. Contact opening	4 mm
Rated voltage (AC)	230 V, 400 V
Rated current (AC)	6 <sub>3</sub> A
Rated short-circuit current	10 kA
Surge current strength	0.25 kA
max. Total rated switching capacity	630 A
Rated insulation voltage	400 V
Rated impulse withstand voltage	4 kV
Rated frequency	50 Hz
Current heat loss per current path	3.1 W
Thermal Backup-fuse OCPD	63 A
Short-circuit backup-fuse SCPD	100 A
Back-up fuse type	gG
	Auxiliary switch (additional emergency shut-off device)
Specification	switching contact
Number of poles (total)	1
Contact assignment	100
Rated voltage (AC)	12 V 230 V
Rated voltage (DC)	12 V 110 V
Tolerance of rated voltage	max. 5 %
	screw-type terminal top and bottom (load circuit)
Neutral conductor position	right
Protection against direct contact	DGUV V3, VDE o66o-514, finger and back-of-hand proof
Connection C1 Maximum number of conductors per terminal	2 (conductors of same type and cross-section)
Cross section solid	1-wire: 1.5 mm <sup>2</sup> 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> 16 mm <sup>2</sup>
Connecting capacity flexible	1-wire: 1.5 mm <sup>2</sup> 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> 16 mm <sup>2</sup>
Cross section stranded	1-wire: 1.5 mm <sup>2</sup> 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> 16 mm <sup>2</sup>
Cross section AWG, solid	151
Cross section AWG, stranded	151
Cross section AWG, flexible	151
Cross section AWG, flexible with ferrule	15 1
Tightening torque	2.5 Nm 3 Nm
rightening torque	screw-type terminal top and bottom (Emergency shut-off device, auxiliary switches)
Allowed types of wires	solid conductor, flexible conductor, stranded conductors with ferrule
Allowed types of wifes	Solid Conductor, Hexible Conductor, Stranded Conductors with Terrole

number of conductors per terminal  Cross section solid  1-wire: 1mm² 1,5 mm², 2-wire: 1mm² 1,5 mm²  Cross section flexible with ferrule  1 mm² 1,5 mm², 2-wire: 1 mm² 1,5 mm²  Cross section stranded  1-wire: 1mm² 1,5 mm², 2-wire: 1 mm² 1,5 mm²  Cross section AWG, solid  17 16  Cross section AWG, stranded  Cross section AWG, flexible with ferrule  Tightening torque  max. 0.8 Nm  General data  Operating position  optional  max. Operating altitude above  MSL  Mechanical endurance  Electrical endurance  Electrical endurance  Storage temperature  255°C 7,5°C  Ambient temperature  -25°C 40°C  Climate resistance  according to IEC 60068-2-30: humid heat / cyclic (25°C / 55°C; 93 % / 97 % RH)  Shock resistance  Fatigue limit  >5 of x 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  Protection class  IP20 (installed: IP40)  sealable  true  Width  8 mm  Height  9 mm  Module widths  4-5  Weight  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Technical Data	DFS 4 063-4/0,03-A NA R
Cross section flexible with ferrule  1 mm² 1,5 mm²	Connection C2 Maximum number of conductors per terminal	
1-wire: 1 mm² 1,5 mm² 2 2-wire: 1 mm² 1,5 mm²	Cross section solid	1-wire: 1 mm <sup>2</sup> 1.5 mm <sup>2</sup> ; 2-wire: 1 mm <sup>2</sup> 1.5 mm <sup>2</sup>
Cross section AWG, solid  17 16  Cross section AWG, flexible with ferrule  Tightening torque  max. 0.8 Nm  General data  Operating position  max. Operating altitude above  MSL  Mechanical endurance  Electrical endurance  Storage temperature  Climate resistance  Ambient temperature  Climate resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  > 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  Installation type  Mounting rail (35 mm)  Housing material  Height  8 mm  Height  8 mm  Height  9 g mm  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-120, VDE V 0664-120, DIN EN 61008-1	Cross section flexible with ferrule	1 mm <sup>2</sup> 1.5 mm <sup>2</sup>
Cross section AWG, stranded  Cross section AWG, flexible with ferrule  Tightening torque  max. 0.8 Nm  General data Operating position  optional  max. Operating altitude above MSL  Mechanical endurance  min. 5000 cycles  Electrical endurance  min. 2000 cycles  Surrounding atmosphere  Surrounding atmosphere  Surrounding atmosphere  normal environmental conditions  Storage temperature  -25 °C 40 °C  Ambient temperature  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  > 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  8 mm  Height  85 mm  Depth  75 mm  Installation depth  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Cross section stranded	1-wire: 1 mm <sup>2</sup> 1.5 mm <sup>2</sup> ; 2-wire: 1 mm <sup>2</sup> 1.5 mm <sup>2</sup>
Cross section AWG, flexible with ferrule  Tightening torque  General data  Operating position  Max. Operating altitude above MSL  Mechanical endurance  Electrical endurance  Electrical endurance  Surrounding atmosphere  Surrounding atmosphere  Storage temperature  -15°C75°C  Ambient temperature  -25°C40°C  Climate resistance  according to IEC 60068-2-30: humid heat / cyclic (25°C/ 55°C; 93 % / 97 % RH)  Shock resistance  Fatigue limit  > 5 g f s 8 o Hz, duration > 30 min.)  Housing type  Mounting rail (35 mm)  Housing material  Protection class  Flago (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Cross section AWG, solid	17 16
ferrule Tightening torque  max. 0.8 Nm  General data  Operating position  max. Operating altitude above MSL  Mechanical endurance Electrical endurance  min. 2000 cycles  Storrage temperature  Ambient temperature  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  According to IEC 60068-2-30: humid heat / cyclic (	Cross section AWG, stranded	17 16
General data         Operating position       optional         max. Operating altitude above       2000 m         MSL       min. 5000 cycles         Mechanical endurance       min. 2000 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 % RH)         Shock resistance       20 g / 20 ms Duration         Fatigue limit       > 5 g (f ≤ 80 Hz, duration > 30 min.)         Housing type       distribution board housing         Installation type       Mounting rail (35 mm)         Housing material       thermoplastic         Protection class       IP20 (installed: IP40)         sealable       true         Width       81 mm         Height       85 mm         Depth       75 mm         Installation depth       69 mm         Module widths       4-5         Weight       0.52 kg         Design requirements/Standards       VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Cross section AWG, flexible with ferrule	17 16
Operating position  max. Operating altitude above  MSL  Mechanical endurance  Electrical endurance  Surrounding atmosphere  Surrounding atmosphere  Surrounding atmosphere  Tormal environmental conditions  Storage temperature  -25 °C 40 °C  Climate resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  > 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  69 mm  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Tightening torque	max. o.8 Nm
max. Operating altitude above  MSL  Mechanical endurance  Electrical endurance  Surrounding atmosphere  Surrounding atmosphere  Storage temperature  -25 °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 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  > 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  69 mm  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1		General data
MSL  Mechanical endurance  Electrical endurance  Surrounding atmosphere  Storage temperature  Ambient temperature  Climate resistance  Fatigue limit  Housing type  Installation type  Mounting material  Protection class  sealable  Width  Ba mm  Height  Bepth  T5 mm  Installation depth  Module widths  Module widths  Median min. 5000 cycles  min. 2000 cycles  mon. 2000 cyc	Operating position	optional
Electrical endurance  Surrounding atmosphere  Storage temperature  Ambient temperature  Climate resistance  according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  5 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  69 mm  Module widths  4-5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-120, VDE V 0664-120, DIN EN 61008-1	max. Operating altitude above MSL	2000 M
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 % RH)  Shock resistance  20 g / 20 ms Duration  Fatigue limit  > 5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  69 mm  Module widths  4.5  Weight  0.52 kg  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Mechanical endurance	min. 5000 cycles
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 % RH)           Shock resistance         20 g / 20 ms Duration           Fatigue limit         > 5 g (f ≤ 80 Hz, duration > 30 min.)           Housing type         distribution board housing           Installation type         Mounting rail (35 mm)           Housing material         thermoplastic           Protection class         IP20 (installed: IP40)           sealable         true           Width         81 mm           Height         85 mm           Depth         75 mm           Installation depth         69 mm           Module widths         4-5           Weight         0.52 kg           Design requirements/Standards         VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Electrical endurance	min. 2000 cycles
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Shock resistance  20 g / 20 ms Duration  Fatigue limit  >5 g (f ≤ 80 Hz, duration > 30 min.)  Housing type  distribution board housing  Installation type  Mounting rail (35 mm)  Housing material  thermoplastic  Protection class  IP20 (installed: IP40)  sealable  true  Width  81 mm  Height  85 mm  Depth  75 mm  Installation depth  69 mm  Module widths  4-5  Weight  Design requirements/Standards  VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Ambient temperature	-25 °C 40 °C
Fatigue limit $>5 g (f \le 80 \text{ Hz, duration} > 30 \text{ min.})$ Housing type $\text{distribution board housing}$ Installation type $\text{Mounting rail (35 mm)}$ Housing material $\text{thermoplastic}$ Protection class $\text{IP20 (installed: IP40)}$ sealable $\text{true}$ Width $\text{81 mm}$ Height $\text{85 mm}$ Depth $\text{75 mm}$ Installation depth $\text{69 mm}$ Module widths $\text{4.5}$ Weight $\text{0.52 kg}$ Design requirements/Standards $\text{VDE 0664-120, DIN EN 61008-1}$	Climate resistance	according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)
Housing type Installation type Mounting rail (35 mm) Housing material Housing material Housing material Protection class IP20 (installed: IP40) sealable true Width 81 mm Height 85 mm Depth 75 mm Installation depth 69 mm Module widths 4.5 Weight O.52 kg Design requirements/Standards VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Shock resistance	20 g / 20 ms Duration
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Protection class         IP20 (installed: IP40)           sealable         true           Width         81 mm           Height         85 mm           Depth         75 mm           Installation depth         69 mm           Module widths         4.5           Weight         0.52 kg           Design requirements/Standards         VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Installation type	Mounting rail (35 mm)
sealable         true           Width         81 mm           Height         85 mm           Depth         75 mm           Installation depth         69 mm           Module widths         4.5           Weight         0.52 kg           Design requirements/Standards         VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Housing material	thermoplastic
Width       81 mm         Height       85 mm         Depth       75 mm         Installation depth       69 mm         Module widths       4.5         Weight       0.52 kg         Design requirements/Standards       VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Protection class	IP20 (installed: IP40)
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Depth         75 mm           Installation depth         69 mm           Module widths         4.5           Weight         0.52 kg           Design requirements/Standards         VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Width	81 mm
Installation depth 69 mm  Module widths 4.5  Weight 0.52 kg  Design requirements/Standards VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Height	85 mm
Module widths 4.5 Weight 0.52 kg Design requirements/Standards VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Depth	75 mm
Weight 0.52 kg Design requirements/Standards VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Installation depth	69 mm
Weight 0.52 kg Design requirements/Standards VDE 0664-10, VDE V 0664-120, DIN EN 61008-1	Module widths	4.5
	Weight	
Degree of pollution 2	Design requirements/Standards	VDE 0664-10, VDE V 0664-120, DIN EN 61008-1
	Degree of pollution	2

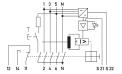
## **Dimensions**



## Wiring example



Dimensional drawing Group view



Wiring diagram

Wiring diagram additional file