Doepke

Focus on the neutral conductor

switching devices with mains monitoring

DFS 6 —— Residual current circuit-breakers

———— DFS 6 040-4/0,03-A NU

———— DFS 6 040-4/0,03-B SK NU

———— DFS 6 063-4/0,03-A NU

———— DFS 6 063-4/0,03-B SK NU

DHS 6 —— Main switches

———— DHS 6-063 NU

———— DHS 6-063 NUS

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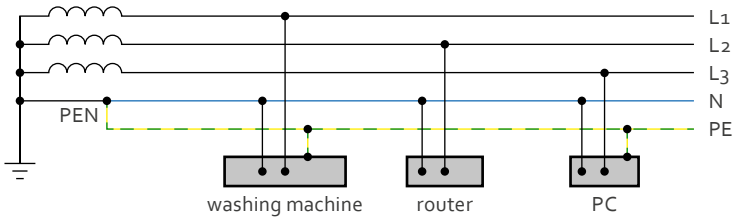
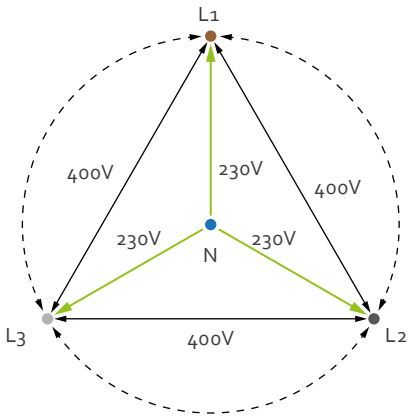
Neutral conductor interruption and its consequences

hazard due to asymmetrical overvoltage

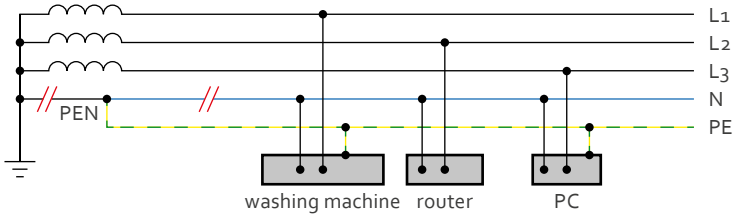
One of the most common causes of damage to electronic equipment in households, commercial applications, and industry is an interruption of the neutral conductor. If the line conductors are loaded asymmetrically, this results in a neutral point shift, which in turn causes overvoltage.

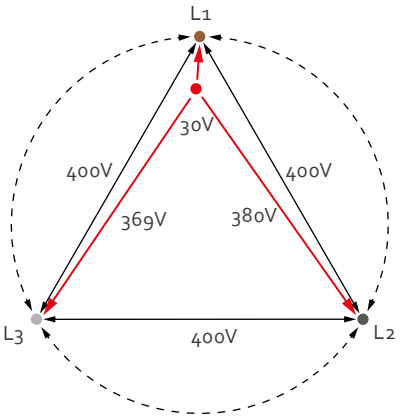




Neutral point

The neutral point is formed by the neutral conductor (N). In the case of asymmetrical loading, a balancing current flows through it The voltage between a line conductor and the neutral conductor is 230 V, and the voltage between the line conductors is 400 V.





Neutral point shift

If the neutral conductor is interrupted, no balancing current can flow through it. The neutral point shifts towards the most heavily loaded phase, resulting in undervoltages and overvoltages: large loads receive less voltage, while smaller devices such as routers, televisions, PCs, or smart home components may be damaged or even destroyed by the resulting overvoltage.

The solution: safety through mains monitoring

On all line conductors and on the neutral conductor on the supply side, residual current circuit-breakers and main switches of the NU/NUS series reliably detect

- neutral conductor breakage
- phase failure
- asymmetrical overvoltage and undervoltage
- asymmetrical phase shift

and disconnect within 150 ms. If the neutral conductor and a line conductor are interchanged, the devices cannot be switched on at all. Overvoltages resulting from a neutral conductor interruption are reliably prevented by DFS NU and DHS NU/NUS; connected devices are thus protected against damage or fire hazards.

Product features

Fault source	 DFS 6 063-4/0,03-A NU	 DFS 6 063-4/0,03-B SK NU	 DHS 6-063 NU	 DHS 6-063 NUS
N interruption supply	✓	✓	✓	✓
N interruption RCD output	×	×	×	✓
Interruption on the neutral rail	×	×	×	✓

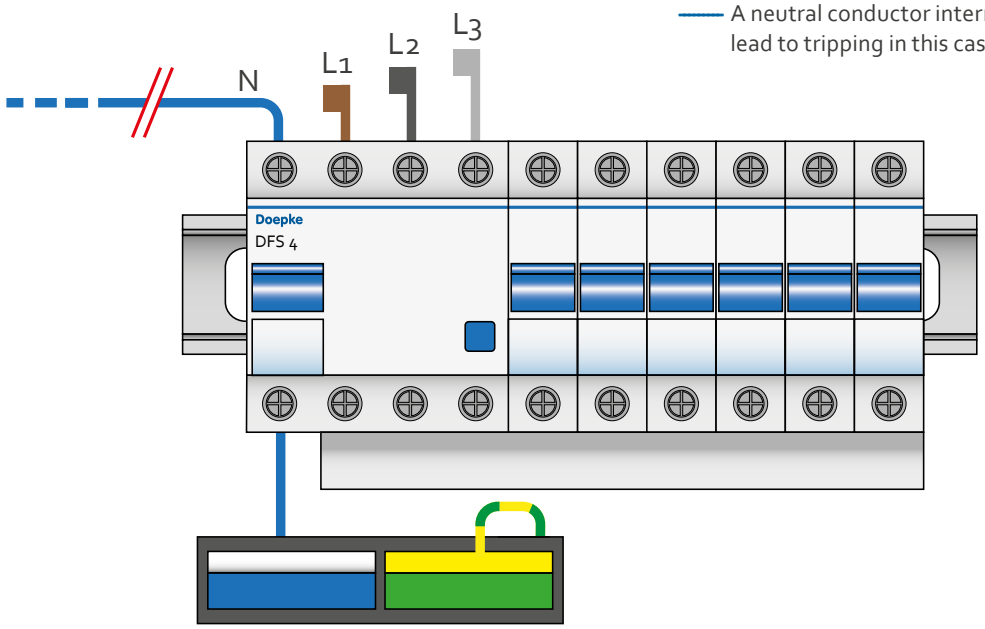
DFS und DHS NU

additional safety without extra effort

without mains monitoring

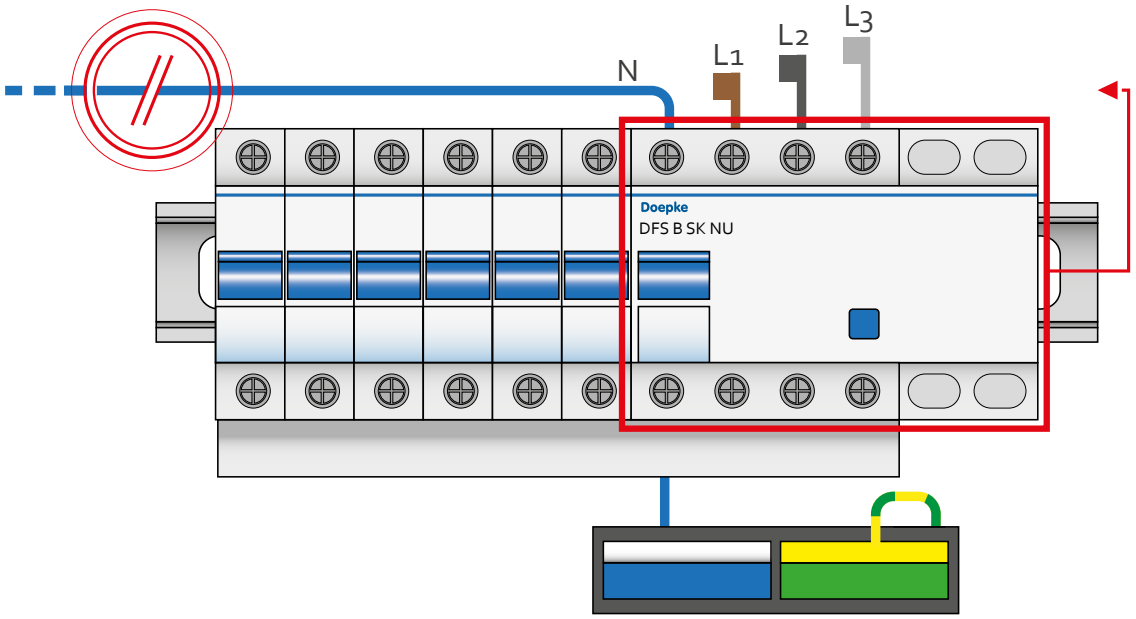
A distribution board equipped with an RCCB meets the requirements for protection against electric shock.

A neutral conductor interruption would not lead to tripping in this case.



with mains monitoring

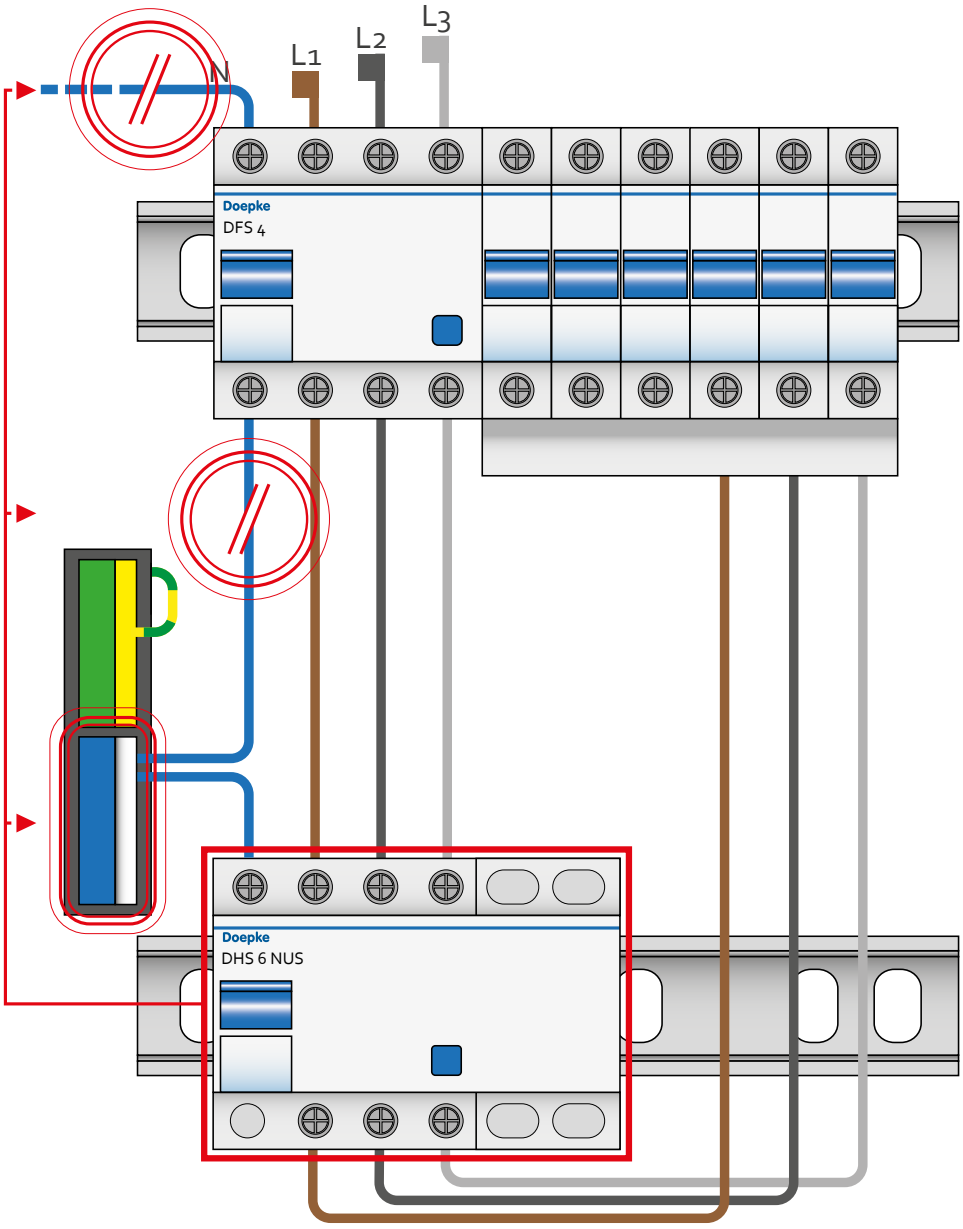
RCCBs (DFS) and main switches (DHS) of the NU series additionally detect faults or failures on the supply side of the distribution board, such as neutral conductor interruptions – providing enhanced protection of property.



DHS NUS

extended protection up to the neutral rail

with mains monitoring — In addition to monitoring the mains conductors, the DHS NUS main switch also monitors the neutral rail, thereby providing the highest level of property and fire protection.



Residual current circuit-breakers

for AC and pulsating DC residual currents

DFS 6 040-4/0,03-A NU	09134801
DFS 6 063-4/0,03-A NU	09144801

AC-DC sensitive, lightning-resistant

DFS 6 040-4/0,03-B SK NU	09134899
DFS 6 063-4/0,03-B SK NU	0914899

Switch-disconnectors

DHS 6-063	NU	09900019
DHS 6-063	NUS	09900020

PREMIUM MARKEN Partner

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