2.2. Power ratings of the TVD 1.3

The TVD 1.3 is available with a DC bus continuous power of 7.5 kW and 15 kW. It can be combined with an auxiliary bleeder module. This means that the power supply can be optimally matched to the requirements of the respective application.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Power supply components		
P_{DC} kW	P_{KB-3} kW	P_{KB-03} kW	P_{BD} kW	P_{BM} kW	W_{max} kWs	P_m kW	P_{mKB-3} kW	P_{mKB-03} kW	TVD 1.3	Power conn. module	Auxiliary bleeder module
7,5	15	22,5	0.5	20	30	6	12	18	-08-03	NAM 1.3-08	----------
7,5	15	22,5	1.5	60	130	6	12	18	-08-03	NAM 1.3-08	TBM 1.2-40-W1
15	30	45	1.0	40	60	12	24	36	-15-03	NAM 1.3-15	----------
15	30	45	2.0	80	160	12	24	36	-15-03	NAM 1.3-15	TBM 1.2-40-W1

(1) P_{DC} = continuous DC bus power

(2) P_{KB-3} = DC bus short-term power for 3s (accel. of spindle drive)

(3) P_{KB-03} = DC bus peak power for 0.3s (accel. feed drives)

(4) P_{BD} = Bleeder continuous power

(5) P_{BM} = Bleeder peak power

(6) W_{max} = maximum regenerated energy

(7) P_m = mechanical output for ON time of > 10s

(8) P_{mKB-3} = mechanical short-term output for 3s (accel. of spindle drive)

(9) P_{mKB-03} = mechanical peak output for 0.3s (accel. feed drives)

Fig. 2.2: Power ratings in the TVD 1.3

2.3. Overload Capabilities of the TVD 1.3

The TVD 1.3 can be overloaded for a short duration for the purpose of accelerating feed and spindle drives.

The maximum acceleration ratings must be taken into account during project planning and may not be exceeded!

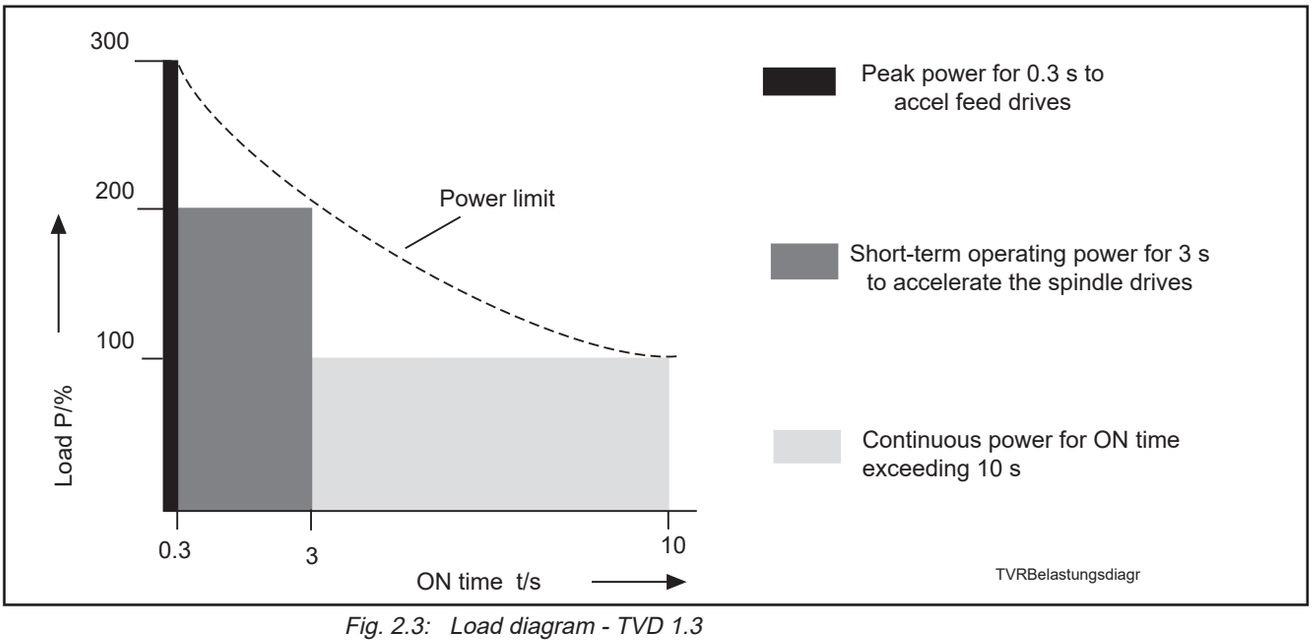


Fig. 2.3: Load diagram - TVD 1.3

3.3 Mains connection devices

Due to regulated current consumption, the TVD 1.3 supply module offers the lowest possible mains loading without reactive current.

Current regulators in switched-mode power supply system cause mains system perturbations, the level of which depend on existing system conditions, i.e., short-circuit power or mains inductance, at the installation site.
To eliminate mains perturbance, the TVD 1.3 supply module is operated from the mains supply via auxilary devices.

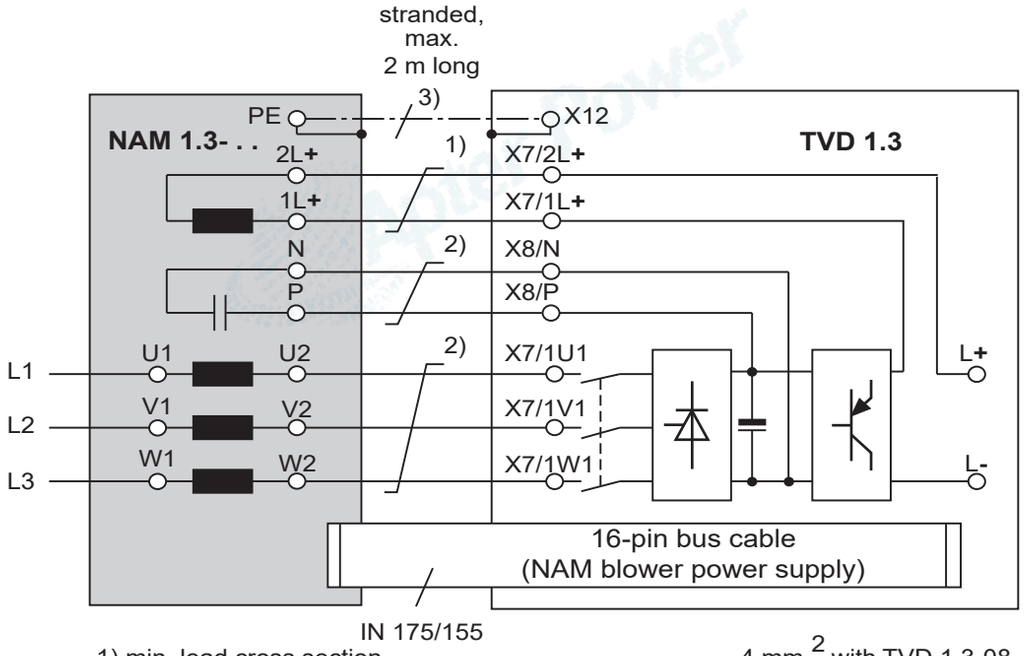
The auxilary devices are available as either compact mains connection module NAM 1.3 or in the form of individual components.

TVD 1.3 with adapter module NAM 1.3

All the necessary components like the commutation choke, storage capacitor and DC bus smoothing choke, are in the mains connection module. This keeps installation work to a minimum.

Available device combinations:

Supply module	Mains connection module
TVD 1.3-08-3	NAM 1.3-08
TVD 1.3-15-3	NAM 1.3-15



1) min. lead cross section .....4 mm² with TVD 1.3-08
min. lead cross section: .....16 mm² with TVD 1.3-15
2) min. lead cross section: .....2.5 mm² with TVD 1.3-08
min. lead cross section: .....6 mm² with TVD 1.3-15
3) ≥ 10 mm²

Lead cross sections per EN 60204 - installation type B1 - correcting factors not taken into account

TVD / NAM 1.2

Fig. 3.3: Connecting a TVD 1.3 supply module to the mains via adapter module NAM 1.3

3.9. DC bus smoothing choke

The TVD 1.3 must **always** be operated with a DC bus smoothing choke in the "L+ line“.

Supply Module	DC bus smoothing choke
TVD 1.3-08-3 TVD 1.3-15-3	GLD 16 (or NAM 1.3-08) GLD 17 (or NAM 1.3-15)

(See Section 3.3, for power loss see dimension sheet in section 7).

3.10. Additional DC bus capacitance

In plants where feed axes have to be accelerated and braked in rapid succession, e.g., nipple machines, surface grinders, roll feeds, and so on, the bleeder power and thus the power dissipation can be reduced by fitting additional capacitors to the link circuit.
In a few applications, it is necessary to initiate a return of the drives with a mains failure or an E-stop. The energy stored in the DC bus circuit can be used for the return. The energy stored in the DC bus circuit can be increased by additional capacitance.

Module	Maximum additional capacitance
TVD 1.3-08 TVD 1.3-15	Cmax = 70 mF Cmax = 120 mF

3.11. Bridge circuit capacitance

In an effort to keep system perturbations as low as possible, the TVD must always be operated with the NAM mains connection module or the bridge capacitance CZ 1.2-01-7. See section 3.3. for details.

8. Order information

8.1. Type codes TVD

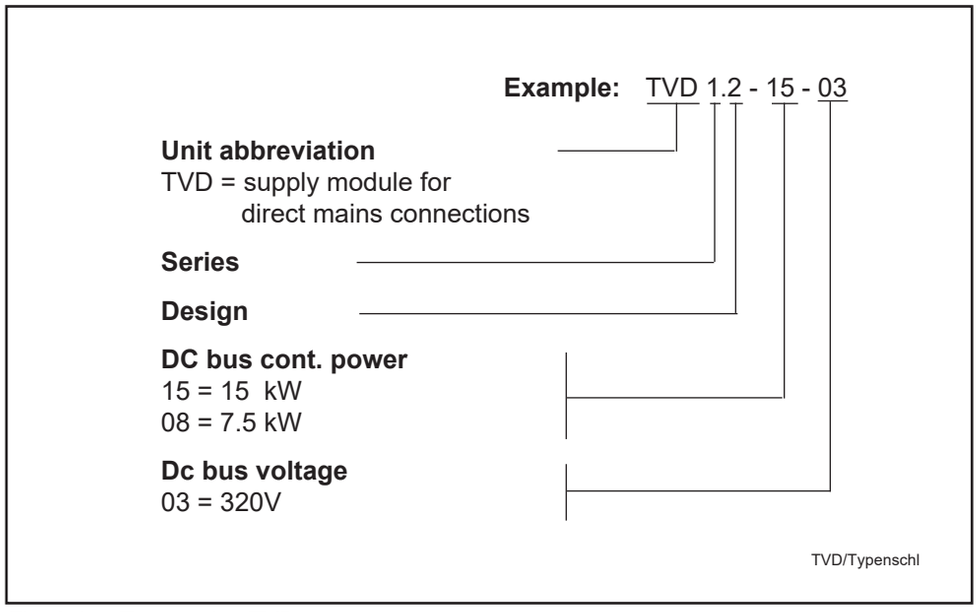


Fig. 8.1: Type codes TVD

8.2. Available supply module types of the TVD 1.3 and accessories

Designation	Available types
1. Supply module	TVD 1.3-08-3 TVD 1.3-15-3
1.1. electrical conn. accessories	E1-TVD E2-TVD E3-TVD
1.2. connector for blower supply of the drive modules	socket part no.: 219 118
2. Auxiliary devices	
2.1. Mains supply module	NAM 1.3-08 NAM 1.3-015 for bus conn. see section 8.4.
2.2. Capacitance	CZ 1.2-01-7
2.3. Commutating choke	KD 26 part no. 246 544 KD 23 part no. 246 429
2.4. DC bus smoothing choke	GLD 16 part no. 242 665 GLD 17 part no. 242 124
3. Aux. bleeder module	TBM 1.2-040-W1/024