

5MMSSD.xxxx-0x

This data sheet contains descriptions of multiple revisions. See the adhesive device label for the revision. The following table shows the respective revisions of the drives.

Model number	Revision	Page
5MMSSD.0512-00	D0	"Technical data for Rev. D0 and later" on page 3
	C0	"Technical data up to Rev. C0" on page 5

1 General information

5MMSSD.xxxx-0x slide-in compact solid-state drives (SSD) are based on multi-level cell (MLC) technology and compatible with SATA 3.1. They can be used as replacement parts or accessories.

- 512 GB solid-state drive
- MLC flash memory
- S.M.A.R.T. support
- Slide-in compact
- SATA 3.1 compatible

2 Order data


Model number	Short description	Figure
	Drives	
5MMSSD.0512-00	512 GB SSD MLC - Innodisk - SATA	

Table 1: 5MMSSD.0512-00 - Order data

3 Safety notices

The following safety guidelines must always be observed regardless of the revision.

Information:

B&R makes every effort to keep this technical description as current as possible. The latest version of this technical description is available in PDF format on the B&R website (www.br-automation.com). For specifications that are not listed here, see the user's manual for the complete device being used.

Information:

The following specified characteristic data, features and limit values are only valid for these individual components and may differ from those of the complete system. The data specified for the complete system applies to the complete system in which this individual component is used, for example.

Caution!

A sudden power failure can result in data loss! In very rare cases, the mass storage device may also be damaged!

The preventive use of a UPS is therefore recommended.

4 Technical data for Rev. D0 and later

Model number	5MMSSD.0512-00
General information	
Certifications	
CE	Yes
UL	cULus E115267 Industrial control equipment
HazLoc	cULus HazLoc E180196 Industrial control equipment for hazardous locations Class I, Division 2, Groups ABCD, T3C ¹⁾
Solid-state drive	
Capacity	512 GB
Data reliability	<1 unrecoverable error per 10 ¹⁵ bits read
MTBF	3,000,000 hours
S.M.A.R.T. support	Yes
Interface	SATA
Servicing	None
Continuous reading	Max. 520 MB/s
Continuous writing	Max. 450 MB/s
IOPS ²⁾	
4k read	Max. 75,000 (random)
4k write	Max. 76,000 (random)
Endurance	
MLC flash memory	Yes
Guaranteed data volume	
Guaranteed	600 TBW ³⁾
Erase/Write cycles	
Guaranteed	3000
Compatibility	Compliant with SATA revision 3.1 ACS-2 SSD enhanced SMART ATA feature set Native Command Queuing (NCQ)
Operating conditions	
Pollution degree per EN 61131-2	Pollution degree 2
Ambient conditions	
Temperature	
Operation	-40 to 85°C
Storage	-55 to 95°C
Transport	-55 to 95°C
Relative humidity	
Operation	10 to 95%, non-condensing
Storage	10 to 95%, non-condensing
Transport	10 to 95%, non-condensing
Vibration	
Operation	10 to 2000 Hz: 20 g
Storage	10 to 2000 Hz: 20 g
Transport	10 to 2000 Hz: 20 g
Shock	
Operation	1500 g, 0.5 ms
Storage	1500 g, 0.5 ms
Transport	1500 g, 0.5 ms
Mechanical properties	
Dimensions	
Width	7 mm
Height	69 mm
Depth	100 mm
Weight	Approx. 90 g
Vendor information	
Manufacturer	Innodisk
Manufacturer's product ID	2.5" SATA SSD 3MV2-P 512 GB

Table 2: 5MMSSD.0512-00 - Technical data

- 1) Yes, but applies only if all components installed in the complete system have this certification and the complete system bears the corresponding mark.
- 2) IOPS: Random read and write input/output operations per second
- 3) TBW: Terabytes written

4.1 Temperature/Humidity diagram

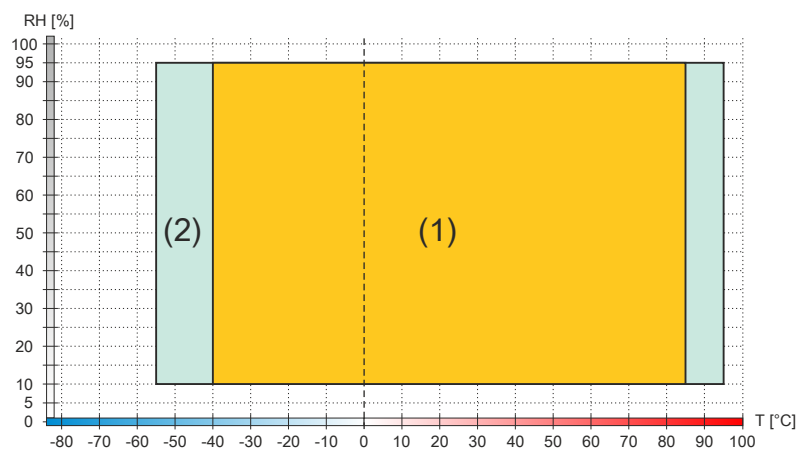


Figure 1: 5MMSSD.0512-00 - Temperature/Humidity diagram - Rev. D0 and later

Diagram legend			
(1)	Operation	T [°C]	Temperature in °C
(2)	Storage and transport	RH [%]	Relative humidity (RH) in percent and non-condensing

5 Technical data up to Rev. C0

Model number	5MMSSD.0512-00
General information	
Certifications	
CE	Yes
UL	cULus E115267 Industrial control equipment
HazLoc	cULus HazLoc E180196 Industrial control equipment for hazardous locations Class I, Division 2, Groups ABCD, T3C ¹⁾
Solid-state drive	
Capacity	512 GB
Data reliability	<1 unrecoverable error per 10 ¹⁵ bits read
MTBF	1,500,000 hours
S.M.A.R.T. support	Yes
Interface	SATA
Servicing	None
Continuous reading	Max. 510 MB/s
Continuous writing	Max. 460 MB/s
IOPS ²⁾	
4k read	Max. 90,000 (random)
4k write	Max. 35,000 (random)
Endurance	
MLC flash memory	Yes
Guaranteed data volume	
Guaranteed	400 TBW ³⁾
Compatibility	Compliant with SATA revision 3.1 ACS-2 SSD enhanced SMART ATA feature set Native Command Queuing (NCQ)
Operating conditions	
Pollution degree per EN 61131-2	Pollution degree 2
Ambient conditions	
Temperature	
Operation	-40 to 85°C
Storage	-40 to 85°C
Transport	-40 to 85°C
Relative humidity	
Operation	5 to 90%, non-condensing
Storage	5 to 95%, non-condensing
Transport	5 to 95%, non-condensing
Vibration	
Operation	10 to 2000 Hz: 20 g
Storage	10 to 2000 Hz: 20 g
Transport	10 to 2000 Hz: 20 g
Shock	
Operation	1500 g, 0.5 ms
Storage	1500 g, 0.5 ms
Transport	1500 g, 0.5 ms
Mechanical properties	
Dimensions	
Width	7 mm
Height	69 mm
Depth	100 mm
Weight	78 g
Vendor information	
Manufacturer	Toshiba
Manufacturer's product ID	THNSNJ512WCSU

Table 3: 5MMSSD.0512-00 - Technical data

- 1) Yes, but applies only if all components installed in the complete system have this certification and the complete system bears the corresponding mark.
- 2) IOPS: Random read and write input/output operations per second
- 3) TBW: Terabytes written

5.1 Temperature/Humidity diagram

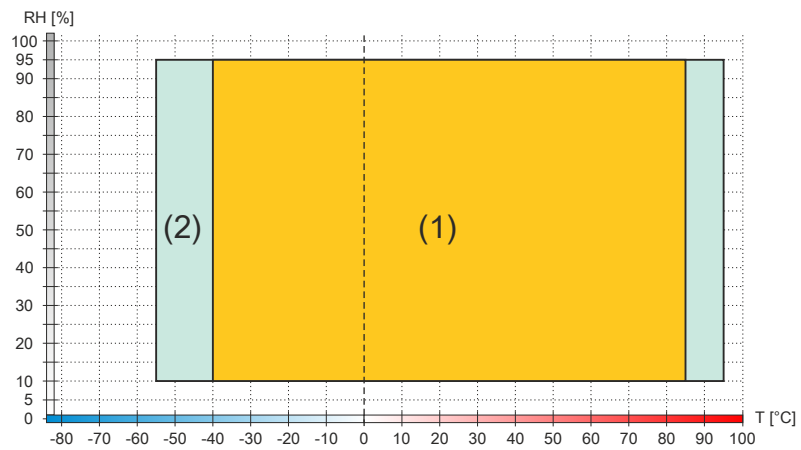


Figure 2: 5MMSSD.0512-00 - Temperature/Humidity diagram - Up to Rev. C0

Diagram legend			
(1)	Operation	T [°C]	Temperature in °C
(2)	Storage and transport	RH [%]	Relative humidity (RH) in percent and non-condensing