

GANTERUD L3

User manual

Version 2.0. 2022



EC Declaration of Conformity

According to 2006/42/EC, Annex 1, Sections 1 and 4 (AFS 2008:3, Annex 2A).
ORIGINAL

Manufacturer / representative : Ganterud Lifting Solutions AB.
Address : Frögatan 10, SE 653 43 Karlstad.

Hereby declares that

Machine / installation : Lifting yoke L3.
Serial number : 1215100-0000.

Corresponds where applicable with the following directives:
The Machinery Directive 2006/42/EC, Annex 1, Sections 1 and 4.
The EMC Directive 2014/30/EU.
The Low Voltage Directive 2014/35/EU.

Satisfies where applicable the requirements in standards and specifications listed below:

SS EN ISO 12100-2010	SS EN 13155+A2:2009
SS EN 61000-6-4	SS EN 60204-1
SS EN 61000-6-2	ELSÄK-FS 2008:1-4

Karlstad, 29/09/2022

Place and date

Frögatan 10, SE 653 43 Karlstad

Address



Authorised signatory

Kristoffer Ganterud

Name in block capitals

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1 Introduction

1.1 About this manual

Keep this user manual for future use – the manual must be available when using the lifting yoke. The latest version of the manual can also be found on Ganterud Lifting Solutions AB's website, www.ganterud.se. The lifting yoke is accompanied by an individual test report from the lifting yoke's static testing.

1.2 Disclaimer

Ganterud Lifting Solutions AB is not liable or bound by guarantees if these instructions are not adhered to during operation, transport, storage or maintenance.

Ganterud Lifting Solutions AB reserves the right to modify the product, component parts, specifications and the content of this manual without prior notification.

Ganterud Lifting Solutions AB accepts no liability for any interventions in or modifications to the product that have been made without Ganterud Lifting Solutions AB's written consent. The product's type approval will cease to apply in the event of any modifications.

1.3 Warranty and complaints

Ganterud Lifting Solutions AB guarantees that the product will be free from defects for a period of one (1) year from the date of delivery, provided the lifting yoke has been used, serviced and maintained in the prescribed manner.

During the warranty period, Ganterud Lifting Solutions AB will repair or replace products and component parts that are returned to Ganterud Lifting Solutions AB with shipping charges prepaid.

Ganterud Lifting Solutions AB reserves the right, on a case by case basis, to determine whether the warranty is valid or not.

The warranty will be invalid if the product or its component parts have been subjected to incorrect use, misuse, negligence or accidents.

The warranty will be invalid if the product has been modified or repaired by an unauthorised party as per the specification in this manual.

The warranty will become invalid if the product has been altered or modified using components other than those specified by Ganterud Lifting Solutions AB.

The purchaser must inspect the product promptly following receipt, and must notify Ganterud Lifting Solutions AB's head office in writing about any claims, including claims regarding breach of warranty, within thirty days after the purchaser has discovered, or ought to have discovered, the facts on which the warranty claim is based.

Failure by the purchaser to submit written notification of a warranty claim within this time period will be deemed to be a waiver of such claim.

1.4 Contact information

Ganterud Lifting Solutions AB, www.ganterud.se

For support or other information about the product, please contact Ganterud Lifting Solutions AB:

e-mail: info@ganterud.se

Tel. during office hours: +46 70 281 20 08



2 Safety

2.1 Definition of safety levels



Specifies an immediately hazardous situation that, if not avoided, will result in death or serious injury.



Specifies a potentially hazardous situation that, if not avoided, may result in death or serious injury.



Specifies a potentially hazardous situation that, if not avoided, may result in minor or moderate injury as well as damage to property.

2.2 Signs on the lifting yoke

- Rating plate, CE marking
- Warning of the risk of crushing between chain and metal housing.
- Max. load
- Max. load imbalance
- Max. chain angle
- Instructions for correct operation
- Lifting table



2.3 General



WARNING!

Incorrect use may result in death or serious injury to a person and/or damage to property.

- Carefully read through this manual before using the lifting yoke.
- The lifting yoke may only be operated by personnel who are trained and possess sufficient knowledge about the lifting yoke.
- The lifting yoke may only be operated by personnel standing on a firm surface and who have a clear view of the load.
- The lifting yoke is only intended for lifting loads using hooks/shackles. Any other use is prohibited.
- All lifting aids used together with the lifting yoke must be provided with built-in scales. Alternatively, the weight must be known and documented, in order to prevent overloading of the lifting yoke.
- The lifting yoke must not be used if the fixed protection covering rotating parts is damaged or has been removed.
- Take care when handling the lifting yoke. There is a risk of crushing between the chain and the metal housing.

2.4 Incorrect handling



WARNING!

The chain must be tensioned on both sides before lifting may be carried out.

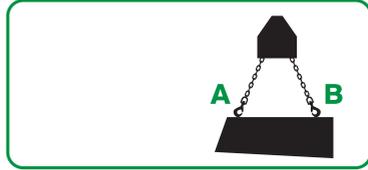


2.4.1 Load imbalance



NOTE!

*The lifting yoke must not be imbalanced.
See lifting table for maximum load imbalance.*



2.4.2 Lifting with one hook



NOTE!

Both hooks must be used when lifting! The lifting yoke must not be used for lifting and hoisting using only one hook.

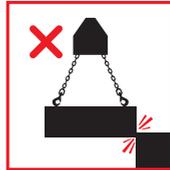


2.4.3 Impact



NOTE!

The lifting yoke may be damaged in the event of an impact.



2.4.4 Centring



NOTE!

The lifting yoke must be centred above the load's centre of gravity within a specified margin of error, in accordance with the lifting table.

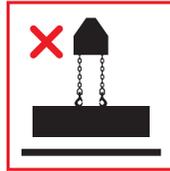


2.4.5 Long load



NOTE!

The chain angle must be as wide as possible, although not exceeding 60°, to reduce the strain on the lifting yoke in the event the load should start to swing.



2.4.6 Relieving the load from the lifting yoke



NOTE!

Lift the load first, level once it is freely suspended. The load must be horizontal when placed on a flat surface, or the load on both attachment points must be relieved at the same time.



WARNING!

The chain must be tensioned on both sides before lifting may be carried out.



2.5 Safety during operation



WARNING!

Incorrect handling or a lack of control can expose personnel to danger of death!

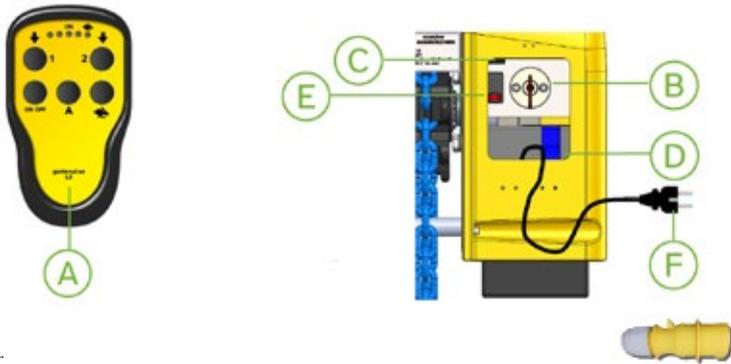
- Perform a daily inspection of the lifting yoke before each use.
- Perform a load inspection before each lift.
- The lifting yoke may only be operated using remote control, where the operator is standing on a firm surface and has a clear view of the load.
- If there are several lifting yokes on site, make sure that the registration number on the side of the remote control corresponds with the registration number on the lifting yoke's rating plate.
- The lifting yoke is not intended for lifting people. Do not stand on or under a suspended load.
- Connect the hook/shackle directly to the load, or via a chain or sling to the load.
- Check that the safety lock on each hook/the pin on each shackle is properly locked.
- The entire load must be securely lashed to avoid falling items when lifting.
- The chain must be tensioned on both sides before lifting may be carried out.
- Lift the load slowly to minimise acceleration forces.
- Transporting and movement during lifting or lowering are associated with danger. Adapt the speed to minimise the danger to people and equipment.
- Keep a careful lookout for people moving within the risk zone. Make them aware that transport is in progress.
- Observe the load constantly during operation.
- Make sure that nobody is at risk of being crushed by the load when it is lowered, or pushed in the event the load should start to swing.

3 Description

The GANTERUD L3 is a radio-controlled lifting yoke that is used for precision adjustment of heavy objects, such as structural elements, beams, roof trusses, etc., when lifting with a crane or other lifting equipment.

The lifting yoke is powered by a built-in electrical motor equipped with a rechargeable battery, and can be used with most types of cranes and lifting devices.

3.1 Overview



- A. Remote control.
- B. Motor switch. Breaks the power supply to the motor. Must be switched off when the batteries are being charged.
- C. Battery charger.
- D. Batteries.
- E. Battery indicator. Indicates battery status. 25 - 100%.
- F. Cable for battery charger. Connected to 110V-230V AC 50 Hz for charging batteries.

3.2 Lifting capacity



NOTE!

Exceeding the maximum chain angle or the maximum lifting capacity will damage the equipment.

The lifting table applies during normal usage. In the event of any uncertainty, scales/load cells must be used to measure the load at each end of the chain.

3.2.1 Lifting table

GANTERUD L3

Lifting capacity: Max. 3 tonnes

Load imbalance capacity Max. 500 kg.

0 - 1 tonnes

*75% displacement from the centre of gravity permitted.

Chain angle, b	Max. levelling angle, a
30°	a = 20°
45°	a = 20°
60°	a = 20°

1 - 2 tonnes

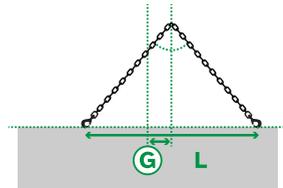
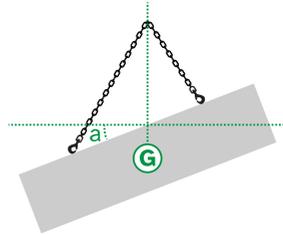
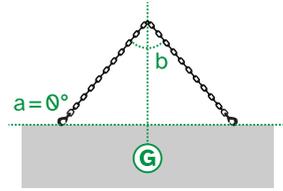
*75% displacement from the centre of gravity permitted.

Chain angle, b	Max. levelling angle, a
30°	a = 20°
45°	a = 20°
60°	a = 17.5°

2 - 3 tonnes

*5% displacement from the centre of gravity permitted.

Chain angle, b	Max. levelling angle, a
30°	a = 20°
45°	a = 20°
60°	a = 10°

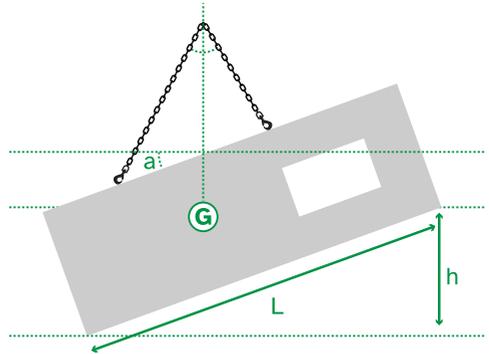


3.2.2 Levelling expressed as height difference

The table below shows the height difference that various levelling angles equate to for lifting objects of different lengths. All lengths are specified in millimetres (mm).

If necessary, the height difference can be calculated by multiplying the length of the lifting object by the sine:

$$h = L \times \text{Sin}(a)$$



Height difference, h [mm]								
a [°]	L [mm]							
	1000	2000	3000	4000	5000	6000	7000	8000
1	17	35	52	70	87	105	122	140
2	35	70	105	140	174	209	244	279
3	52	105	157	209	262	314	366	419
4	70	140	209	279	349	419	488	558
5	87	174	261	349	436	523	610	697
6	105	209	314	418	523	627	732	836
7	122	244	366	487	609	731	853	975
8	139	278	418	557	696	835	974	1113
9	156	313	469	626	782	939	1095	1251
10	174	347	521	695	868	1042	1216	1389
11	191	382	572	763	954	1145	1336	1526
12	208	416	624	832	1040	1247	1455	1663
13	225	450	675	900	1125	1350	1575	1800
14	242	484	726	968	1210	1452	1693	1935
15	259	518	776	1035	1294	1553	1812	2071
16	276	551	827	1103	1378	1654	1929	2205
17	292	585	877	1169	1462	1754	2047	2339
18	309	618	927	1236	1545	1854	2163	2472
19	326	651	977	1302	1628	1953	2279	2605
20	342	684	1026	1368	1710	2052	2394	2736

3.3 Remote control.

The lifting yoke is equipped with radio control and is controlled by the supplied remote control.

The remote control is calibrated for the lifting yoke, using a specific radio frequency. This means that several lifting yokes can be used with their own remote controls on the same work site, without disrupting each other.

If several remote controls are used on the same work site, and for some reason are using the same radio frequency, there is a risk of them disrupting each other. In this case, it is necessary to change the radio frequency of the affected remote controls and receivers.

Changing the radio frequency may only be performed by authorised personnel.

3.4 Intended use

Ganterud L3: The lifting yoke is intended for lifting objects with a maximum weight of 3 tonnes, as well as for levelling where the maximum imbalance between the attachments is 500 kg.

The lifting yoke is intended for lifting with a maximum chain angle of 60°.

The lifting yoke can be used both indoors and outdoors, within a temperature range of -20°C to +40°C.

3.5 Disposal

Disposal must take place in accordance with local rules and regulations.

4 Operation

4.1 Daily inspection



WARNING!

Each and every one of the checkpoints below must be approved before the GANTERUD L3 is used.

4.1.1 Before use

CHECK:

- that the batteries in the lifting yoke are fully charged
- whether the batteries in the remote control need to be replaced
- that the main power switch is set to the On position
- that no mechanical damage is present on the product
- that no mechanical obstacles are present on and around the chain
- that no damage is present on the chain, the entire chain must be inspected
- that the chain and lifting hooks are intact and clean
- that the locking mechanisms on the lifting hooks are working
- that the decals are clearly legible

4.1.2 After use

CHECK:

- whether the batteries in the lifting yoke need to be charged
- whether the batteries in the remote control need to be replaced
- that the main power switch is set to the Off position
- that no mechanical damage is present on the product
- that no mechanical obstacles are present on and around the chain
- that no damage is present on the chain, the entire chain must be inspected
- that the chain and lifting hooks are intact and clean
- that the locking mechanisms on the lifting hooks are working
- that the decals are clearly legible

4.2 Operating the lifting yoke

4.2.1 Preparations

- Load control must be performed by the responsible operator. Max. load 3 tonnes.
- Plan the lift and perform a risk analysis (see applicable local regulations and working instructions).
- Make sure that daily inspection is performed (see "Daily inspection" under section 4.1).
- Make sure that the lifting yoke is free from damage that could jeopardise safety.
- Check that the battery charger on the lifting yoke is disconnected from the power source.
- Check that the lifting yoke's hatch is closed.

4.2.2 Normal use



NOTE!

When carrying a load, the lifting yoke must be operated in slow mode!

When using the lifting yoke in certain situations, noise and vibrations may occur in the lifting yoke. This is entirely normal and is caused by the transition between the chain and the chain wheel.



Position	Description
A	xx
B	xx
C	Radio transmitter / Handheld controller active
D	Fast mode active. (Do not use when the yoke is carrying a load)
E	Lower hook 1 (raises hook 2)
F	Lower hook 2 (raises hook 1)
G	On/Off
H	Activates fast mode
I	xx
J	On/Off button for radio transmitter

4.3 Calibration of the neutral position

When levelling, the chain's end positions are governed by the neutral position that is calibrated in the factory. This should not normally need to be recalibrated.

Contact Ganterud Lifting Solutions AB if you have any questions.



4.5 Synchronising new remote control with lifting yoke

If the old remote control has to be replaced, or if you want to have two remote controls for one lifting yoke.

Deleting:

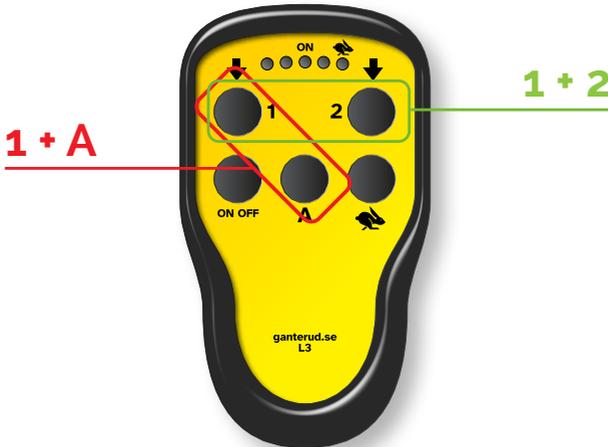
1. Make sure that the lifting yoke is switched off using the power switch, and that the new remote control is switched off.
2. Turn on the new remote control
3. Turn on the power switch on the lifting yoke
4. Press **button "1" and button "A"** on the remote control at the same time for approx. 5 seconds. The old remote control has now been deleted in the lifting yoke.

Press the various buttons to check that it is not working. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.

Synchronising:

1. Turn off the lifting yoke with the power switch, and turn off the new remote control.
2. Turn on the new remote control
3. Turn on the power switch on the lifting yoke
4. Press both arrow keys (**button "1" and button "2"**) on the new remote control for approx. 5 seconds. The new remote control is now synchronised with the lifting yoke.

Test all the functions on the lifting yoke. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.



5 Tandem operation

Tandem operation of two GANTERUD L3 lifting yokes at the same time with one remote control.

Start by deleting both the remote controls as described below:

Make sure that the lifting yoke(s) are turned off with the power switch, and that the remote control(s) are turned off.

1. Turn on "remote control 1".
2. Turn on the power switch on "lifting yoke 1".
3. Press **button "1" and button "A"** on the remote control at the same time for approx. 5 seconds. "Remote control 1" has now been deleted.
4. Press the various buttons to check that it is not working. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.
5. Repeat this procedure with the other lifting yoke.
6. Then turn off the power switch for "lifting yoke 1" and "remote control 1".

1. Turn on "remote control 2".
2. Turn on the power switch on "lifting yoke 2".
3. Press **button "1" and button "A"** on the remote control at the same time for approx. 5 seconds. "Remote control 2" has now been deleted.
4. Press the various buttons to check that it is not working. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.
5. Repeat this procedure with the other lifting yoke.
6. Then turn off the power switch for "lifting yoke 2" and "remote control 2".

Then decide which lifting yokes are "lifting yoke 1" and "lifting yoke 2" respectively, and turn off both lifting yokes with the power switch. Also turn off both remote controls.

1. Turn on "remote control 1".
2. Turn on the power switch on "lifting yoke 1".
3. Press both arrow keys (**button "1" and button "2"**) on "remote control 1" for approx. 5 seconds.
4. "Remote control 1" is now synchronised with "lifting yoke 1".
5. Then turn off the power switch for "lifting yoke 1" and "remote control 1".

1. Turn on "remote control 1".
2. Turn on the power switch on "lifting yoke 2".
3. Press both arrow keys (**button "1" and button "2"**) on "remote control 1" for approx. 5 seconds.
4. "Remote control 1" is now synchronised with "lifting yoke 2".
5. Then turn off the power switch for "lifting yoke 2" and "remote control 1".

1. Turn on the power switch on "lifting yoke 1" and "lifting yoke 2".
2. Turn on "Remote control 1".

Test all the functions. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.

When you subsequently want to use the lifting yokes separately, it is **EXTREMELY IMPORTANT** for both the remote controls to be deleted and synchronised with their respective lifting yokes again as described below.

Deleting:

Make sure that the lifting yoke(s) are turned off with the power switch, and that the remote control(s) are turned off.

1. Turn on "remote control 1".
2. Turn on the power switch on "lifting yoke 1".
3. Press **button "1" and button "A"** on the remote control at the same time for approx. 5 seconds. "Remote control 1" has now been deleted.
4. Press the various buttons to check that it is not working. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.
5. Then turn off the power switch for "lifting yoke 1" and "remote control 1".

1. Turn on "remote control 2".
2. Turn on the power switch on "lifting yoke 2".
3. Press **button "1" and button "A"** on the remote control at the same time for approx. 5 seconds. "Remote control 2" has now been deleted.
4. Press the various buttons to check that it is not working. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.
5. Then turn off the power switch for "lifting yoke 2" and "remote control 2".

Synchronising the remote controls to each lifting yoke again following tandem operation:

1. Turn off both lifting yokes with the power switch, and turn off both remote controls.
 2. Turn on "remote control 1".
 3. Turn on the power switch on "lifting yoke 1".
 4. Press both arrow keys (**button "1" and button "2"**) on "remote control 1" for approx. 5 seconds.
 5. "Remote control 1" is now synchronised with "lifting yoke 1".
 6. Turn off the power switch for "lifting yoke 1" and "remote control 1" and perform synchronisation in the same way with "lifting yoke 2".
1. "Remote control 2" and "lifting yoke 2"
 2. Turn off "lifting yoke 2" and "remote control 2".
 3. Turn on "lifting yoke 1" and "remote control 1" and test all the functions on the lifting yoke. Then repeat this procedure with "lifting yoke 2".
 4. Note: take care and monitor both lifting yokes to make sure that no risk of injury can arise.

6 Maintenance

- Always decouple the lifting yoke from the crane or other lifting device, and place it on the ground before commencing maintenance work. The lifting yoke must be placed on a firm surface with access to good lighting.
- Always remove the key for the main power switch before commencing maintenance work.

6.1 Charging the batteries in the lifting yoke

The batteries may only be charged in a well ventilated area. Make sure that the lifting yoke is turned off with the main power switch before commencing charging.

6.2 Replacing batteries in the remote control

The remote control is powered by 3 AAA batteries.

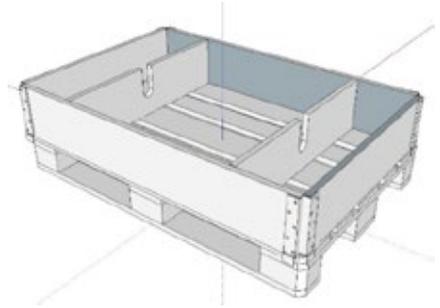
First turn the power switch on the back of the remote control to the Off position, and then remove the back of the remote control to access the batteries. Replace the old batteries with new batteries and reassemble the remote control. Recycle the old batteries in accordance with local rules and regulations.



6.4 Storage and transport

The GANTERUD L3 must be stored and transported in the original packaging. The lifting yoke must be stored indoors/protected from the weather and with charged batteries. If the lifting yoke is to be stored for longer than 3 months, the batteries must be connected to trickle charge so that there is no risk of them losing capacity.

In this case, storage may take place at a minimum of -20°C. If this is not possible, the batteries must be removed and stored indoors in an environment that satisfies these requirements.



6.5 Cleaning

- The lifting yoke must not be cleaned with a pressure washer.
- A hose pipe and a sponge are recommended.
- Never flush up under the plate over the chain wheel.



6.6 Inspection

- GANTERUD L3 – the lifting yoke is not required to be inspected by a third party.
- Visual inspection may be carried out by an inspector designated at the work site.
- Make a note when the inspection has been performed.
- The lifting yoke must be inspected annually by a service partner that we have approved, and if necessary serviced.
- Contact Ganterud Lifting Solutions AB for more information.

7 Technical data



Control system for remote control

- Number of function buttons.....5
- Power output.....12 MW
- Power supply.....3 x 1.5V AAA
- IP rating.....IP67



Optional extra equipment

- Protective cover
- Chain kit in other lengths
- Extra batteries
- Transport packaging

GANTERUD L3

Technical data

Lifting capacity: Max. 3 tonnes
Load imbalance capacity: Max. 500 kg
Max. levelling length: 3 m (1.5 m in both directions)
Two levelling speeds
Max. chain angle: 60° at 3 tonne load
Total chain length: 3 m
Chain dimensions: 30.5x10 mm.
Unloaded weight: 126 kg (incl. chain and hooks)
Height: 638 mm
Width: 503 mm
Depth: 495 mm

Control system

Radio range: 100 m unobstructed view
Voltage, electric motor: 24 VDC
Power consumption, rest: 50 mA
Power consumption, max. continuous: 24 A
Power consumption, peak: 30 A

Certification

CE marked product

Environmental requirements

Operating temperature: -20°C to +40°C
Storage temperature: -20°C to +45°C
Relative humidity (RH): 0-90% during storage

We reserve the right to alter specifications or designs without prior notification, and make reservation for any factual errors. Variations in specifications and equipment standards may occur between different geographical markets. Please contact us for more information regarding applicable product specifications and local adaptations.



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