CKD

IO-Link Compatible
Serial Transmission
Device Unit
W4G-T7 Series

ONE CABLE

Reduced wiring, even the power cable

New

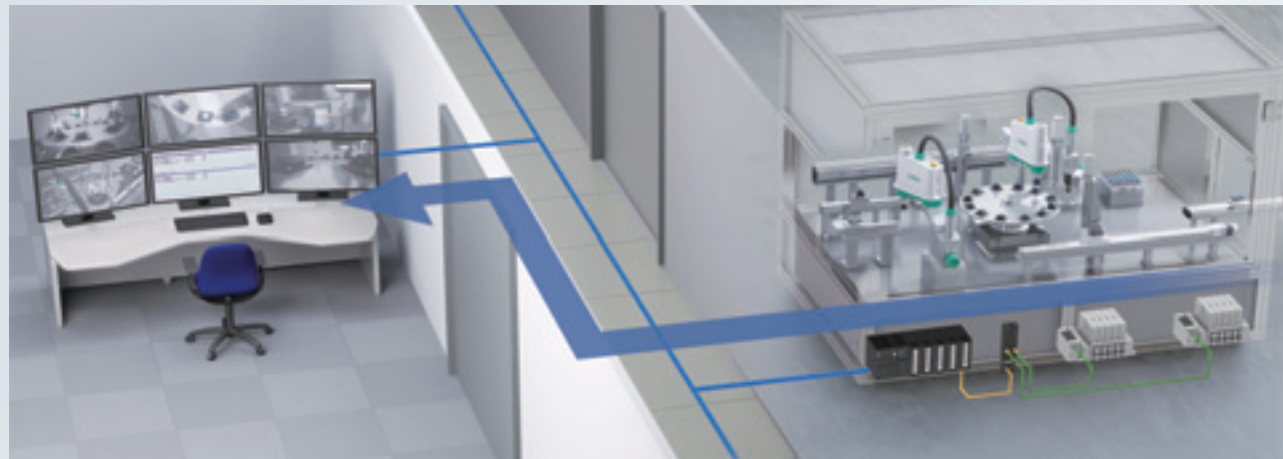Added IO-Link Compatibility
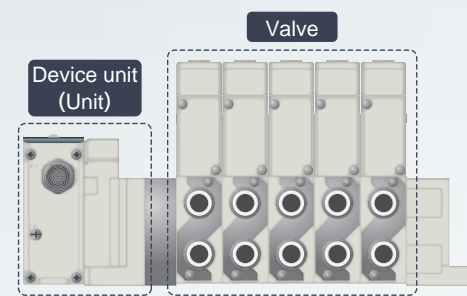
IP65

◆ IO-Link

CKD Corporation

CC-1540A

Information from production sites monitored through valves

Information monitored/set by device (unit) stations

Valve

Device unit (Unit)

Time for unit to energize
Unit energizing threshold setting

Valve ON cycles
Valve ON cycle threshold setting

Tag plate setting
Arbitrary names can be assigned to each solenoid.

Applications

● Operation time of the equipment can be known.

● Depending on the threshold value, preventative maintenance can be conducted by confirming the number of actuator operations, such as the cylinder, etc.

● Since the tag plate is on the network, you can get an overview of the device without looking at the circuit diagram or the device.

IO-Link model available

IO-Link is a digital communication standard for sensors/actuators at factory sites. (IEC 61131-9)
Unlike analog communication, it enables the transmission of parameters and event data.

Cloud

Plant

Ethernet

PLC

Production site

IO-Link Master

Housing identification
Parameter change

Constant monitoring
Alarm notification

I/O

Features of IO-Link

Digital signal
Constant monitoring via digital data is possible.

Parameter remote control
Parameters can be set and changed via the network, enabling remote equipment operation.

Housing identification
Models, serial numbers, etc., can be confirmed on the network.

Data storage
The settings can be copied from the master, eliminating the need for complicated parameter resetting during maintenance.

Error notification
Device failure and disconnection can be confirmed.

Connection to fieldbus
It can also be converted to Ethernet networks and connected, enabling devices to be IoT-ready.
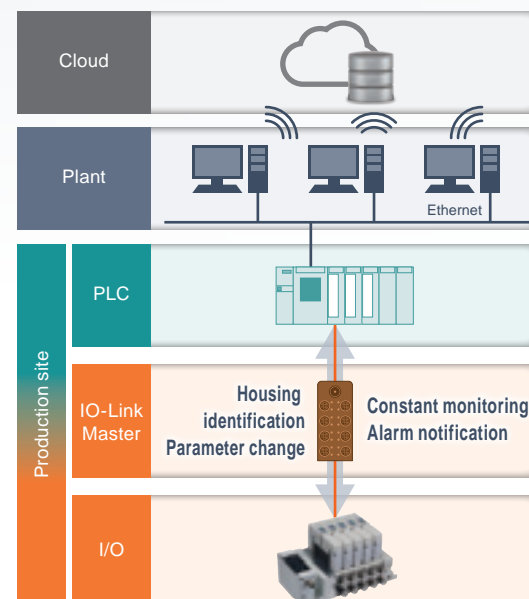
Class A/B: Two types of classes are available

Depending on the wiring method, it is possible to select from Class A/B wiring block formats.

Class A

Unit power supply → Powered from IO-Link Master
Valve power supply → 24 VDC supply prepared separately

Benefits
● Since the valve power supply is prepared individually, there is no need to determine the power supply capacity of the IO-Link Master.
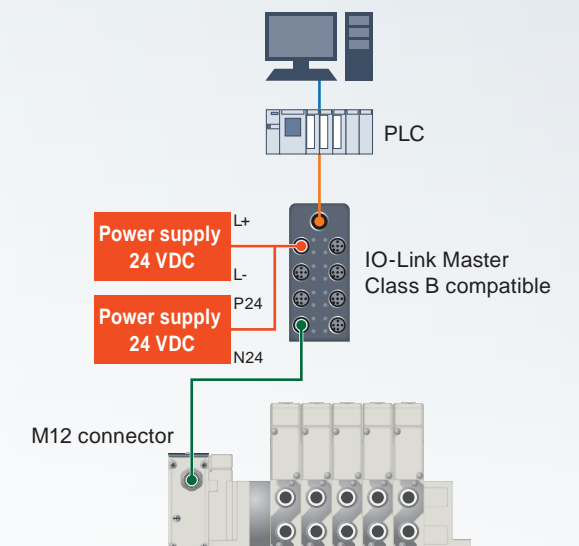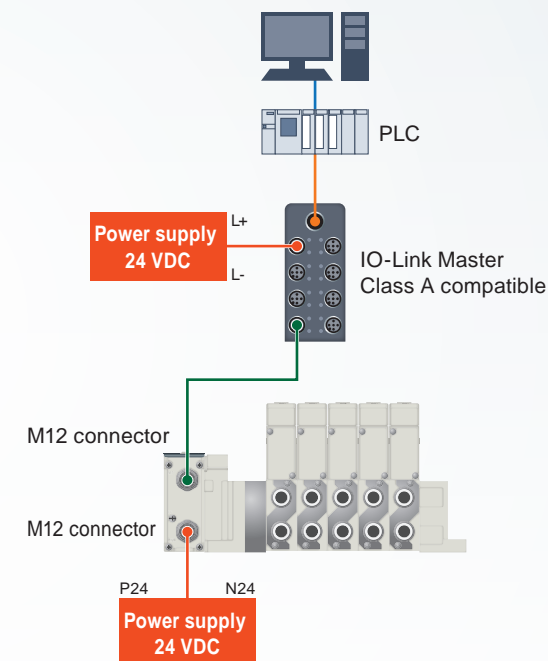● The solenoid valve power supply can be turned OFF while the communication power supply is ON.

Class B

Unit power supply → Powered from IO-Link Master
Valve power supply → Powered from IO-Link Master

Benefits
● Only one wire is required for wiring.
● IO-Link Master enables centralized power management.

* If you want to turn OFF the power to each valve, you need to install a ON/OFF switch in the valve power system.

PLC

Power supply 24 VDC
L+
L-
IO-Link Master Class A compatible

M12 connector

M12 connector

P24   N24

Power supply 24 VDC

PLC

Power supply 24 VDC
L+
L-
Power supply 24 VDC
P24
N24
IO-Link Master Class B compatible

M12 connector

Class A

No. of output points	Valve output Type	Wiring block Type
16 points	NPN	T7KCA1
16 points	PNP	T7KCPA1

Class B

No. of output points	Valve output Type	Wiring block Type
16 points	NPN	T7KCB1
16 points	PNP	T7KCPB1

W4G-T7 Series

Specifications
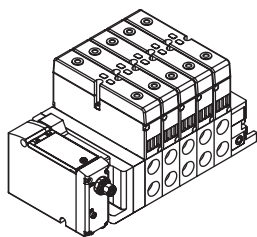
●Valve dedicated device unit

Item		T7KC*1	T7KCP*1
Network name		IO-Link	
Power supply voltage	Unit side	18 to 30 VDC	
	Valve side	24 VDC +10%, -5%	
Current consumption	Unit side	50 mA or less	
	Valve side	15 mA or less (excluding load current)	
Valve output		NPN output	PNP output
No. of I/O points		16 point output	
Communication speed setting	Switch setting	COM2/COM3	
LED display		INFO, COM, ST, PW(V) [Valve power supply]	
Degree of protection		IP65 (IP20 when no connector is connected)	

Individual specifications

●MW4G*4

Item		T7KC*1
Max. station No.	Standard wiring	16
	Double wiring	8
Max. No. of solenoids		16

Compatibility

MW4GB4, MW4GZ4

⚠Read the safety precautions in "Pneumatic Valves (Catalog No.CB-023SA)" before use.

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How to order

● MW4G*4 manifold equipped model No. (example)

| MW4GB4 | 8 | 0 - | 10 | - | T7KCP1 *1 | W | M | - 6 | - 3 |

Ⓐ Model No.

Ⓑ Solenoid position

Ⓒ Port size

Ⓓ Serial transmission

Ⓔ Terminal/ Connector pin array

Ⓕ Option

Ⓖ Station No.

Ⓗ Voltage
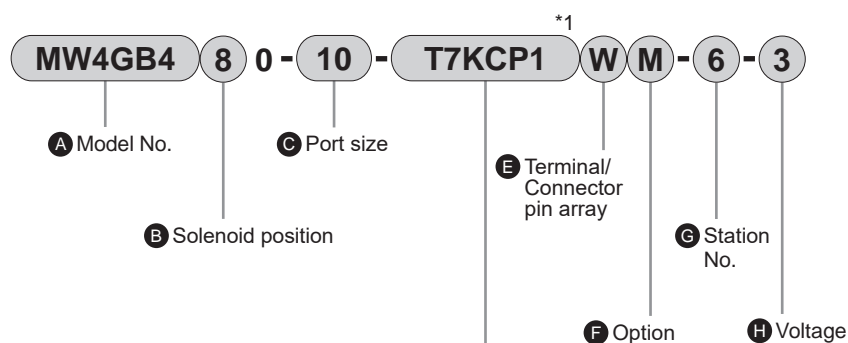
* Model Nos.

Only models of the newly added serial transmission device units (T7KC*) are shown in this catalog. Refer to "Pneumatic Valves (Catalog No.CB-023SA)" for details (specifications, model No., etc.) of the W4G4 Series.

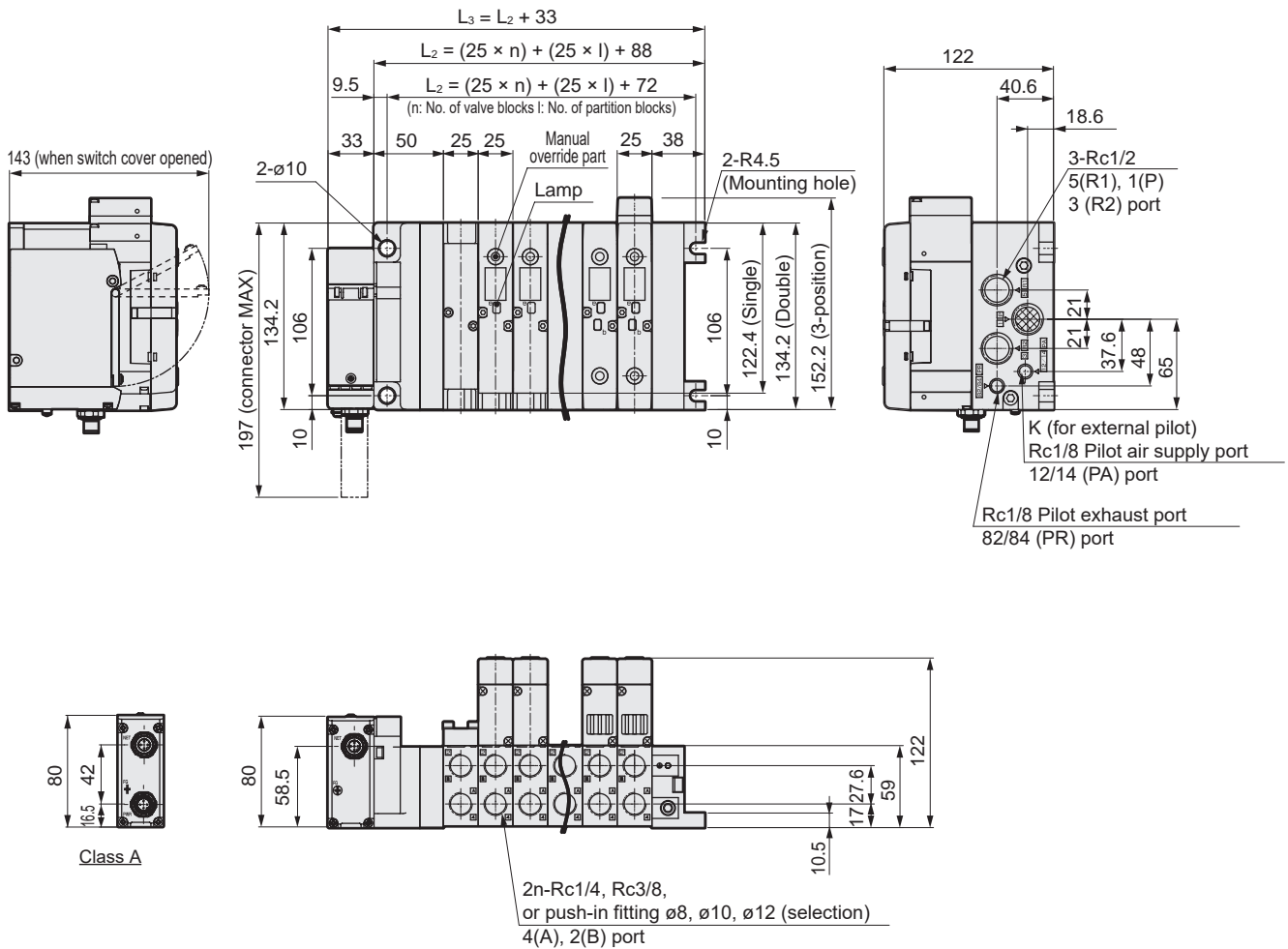*1 : There is no right side (R) specification.

Code	Description
Ⓓ **Serial transmission device unit**	
T7KCA1	Drip proof thin type IO-Link 16 point output Class A (NPN valve output)
T7KCPA1	Drip proof thin type IO-Link 16 point output Class A (PNP valve output)
T7KCB1	Drip proof thin type IO-Link 16 point output Class B (NPN valve output)
T7KCPB1	Drip proof thin type IO-Link 16 point output Class B (PNP valve output)

[Example of model No.]

Ⓐ Model No. : 5-port valve base piping
Ⓑ Solenoid position : Mix manifold
Ⓒ Port size : Rc3/8
Ⓓ Serial transmission : Drip proof thin type IO-Link 16 point output ClassB (PNP valve output)
Ⓔ Terminal / Connector pin array : Double wiring
Ⓕ Options : Manual override of non-locking
Ⓖ Station No. : 6 stations
Ⓗ Voltage : 24 VDC

W4G-T7 Series

Dimensions

● MW4GB4-T7KC** (Class B)

143 (when switch cover opened)

$L_3 = L_2 + 33$

$L_2 = (25 \times n) + (25 \times l) + 88$

$L_2 = (25 \times n) + (25 \times l) + 72$
(n: No. of valve blocks l: No. of partition blocks)

9.5

33　50　25　25　　　　25　38

Manual override part

Lamp

2-R4.5 (Mounting hole)

2-ø10

197 (connector MAX)

134.2

106

106

122.4 (Single)
134.2 (Double)
152.2 (3-position)

10

10

122

40.6

18.6

3-Rc1/2
5(R1), 1(P)
3 (R2) port

21　21

21

37.6

48

65

K (for external pilot)
Rc1/8 Pilot air supply port
12/14 (PA) port

Rc1/8 Pilot exhaust port
82/84 (PR) port

80

42

16.5

Class A

80

58.5

122

17　27.6

59

10.5

2n-Rc1/4, Rc3/8,
or push-in fitting ø8, ø10, ø12 (selection)
4(A), 2(B) port

* For dimensions of other model Nos., (refer to No.CB-023SA) "Pneumatic Valves"

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Technical data

● Wiring to device unit

Any connector that attaches with the connectors on the device unit side listed below can be used.

[Class A]
Recommended connector (NET): Part No.　: 21 03 212 2305 Assembly M12 connector Manufactured by HARTING
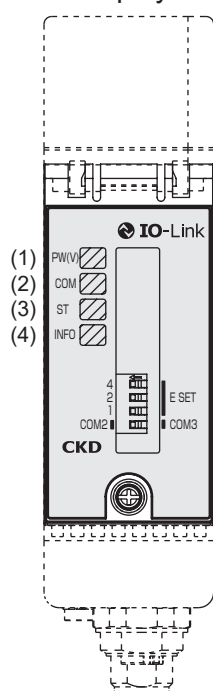Electric wire size　: AWG22-18, Applicable cable diameter: ø6-8
Recommended connector (PWR): Part No.　: 21 03 212 2305 Assembly M12 connector Manufactured by HARTING

[Class B]
Recommended connector (NET):　Part No.　: 21 03 272 2505 Assembly M12 connector Manufactured by HARTING
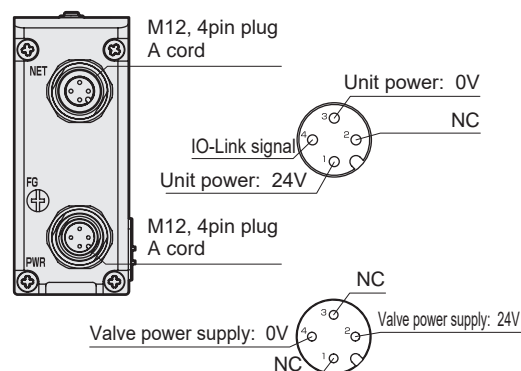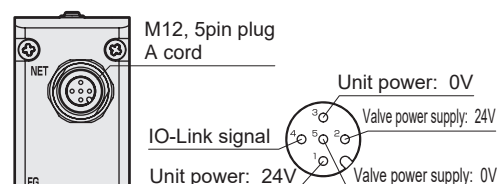Electric wire size　: AWG22-20, Applicable cable diameter: ø6-8

LED display

Wiring

[ClassA]

M12, 4pin plug
A cord

Unit power: 0V
NC
IO-Link signal
Unit power: 24V

M12, 4pin plug
A cord

NC
Valve power supply: 24V
Valve power supply: 0V
NC

[ClassB]

M12, 5pin plug
A cord

Unit power: 0V
Valve power supply: 24V
IO-Link signal
Unit power: 24V
Valve power supply: 0V

LED display description

LED	Name	Indicator description
①	PW (V)	Lights when valve power is ON. Green lamp is ON when normal
②	COM	Green light is on when unit power is ON Green blinking during IO-Link communication
③	ST	Status of the network related to IO-Link is indicated by the ON status (red ON/blinking)
④	INFO	Not used

ClassA connector pin array

Port	Pin	Signal name	Function
NET	1	L+	Unit power: 24V
	2	NC	-
	3	L-	Unit power: 0V
	4	C/Q	IO-Link signal
PWR	1	NC	-
	2	P24	Valve power supply: 24V
	3	NC	-
	4	N24	Valve power supply: 0 V

ClassB connector pin array

Port	Pin	Signal name	Function
NET	1	L+	Unit power: 24 V
	2	P24	Valve power supply: 24 V
	3	L-	Unit power: 0 V
	4	C/Q	IO-Link signal
	5	N24	Valve power supply: 0 V

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4

W4G-T7 Series

MW4G☐4☐ Block manifold specifications sheet

● Contact　　　　● Quantity　　　Set(s)　　● Delivery date　　　／

Slip No.	Order No.

● Manifold model No.

Issued:　　　／　　　／
Company:
Contact:
Order No.

MW4G 4 ☐ 0 - ☐ - ☐ ☐ ☐ - ☐ - ☐

Ⓐ Model No.　Ⓑ Solenoid position　Ⓒ Port size　Ⓓ Wiring method Note　Ⓔ Terminal/ Connector pin array　Ⓕ Option　Ⓖ Station No.　Ⓗ Voltage

Select a model number from "Block components" for "Pneumatic valves" (No. CB-023SA) when inputting.

| Part name		Model No.	Installation position																						Quantity
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
	Wiring block	NW4G4-T7KC☐																							
	Valve block with solenoid valve	NW4G☐4☐0-☐-☐-☐																							
		NW4G☐4☐0-☐-☐-☐																							
		NW4G☐4☐0-☐-☐-☐																							
		NW4G☐4☐0-☐-☐-☐																							
		NW4G☐4☐0-☐-☐-☐																							
	Valve block with masking plate	NW4G☐4-MP☐-☐-☐																							
		NW4G☐4-MP☐-☐-☐																							
	End block	NW4G4-E☐R☐																							
Spacers	Independent supply spacer	W4G4-P-☐																							
Spacers	Independent exhaust spacer	W4G4-R-☐																							
Accessories	Silencer (resin)	SLW-15A	List the number of units to be used in the quantity field on the right.																						
Accessories	Blanking plug	GWP8-B																								
Accessories		GWP10-B																								
Accessories		GWP12-B																								

* As one side is for air supply and another side is for exhaust, use the air supply spacer or exhaust spacer when operating valves simultaneously.
* As one side is for air supply and another side is for exhaust, partition block and partition plug cannot be used.
* There is no right side (R) specification.

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MEMO

W4G-T7 Series

Related products

IoT Compatible components Series

Catalog No.CC-1466A

■ Supports various industrial networks to accommodate the creation of IoT at production sites. Contributes to the visualization of actuators and sensors operating within equipment.

■ In addition to electric components such as electric actuators and direct drive motors with high reduced wiring needs, there is a wide lineup of network components with a sensor level that is closer to the workpiece.

■ Since the air and electric components are listed by network, it is possible to reduce the man-hours for examining the network inside the equipment.
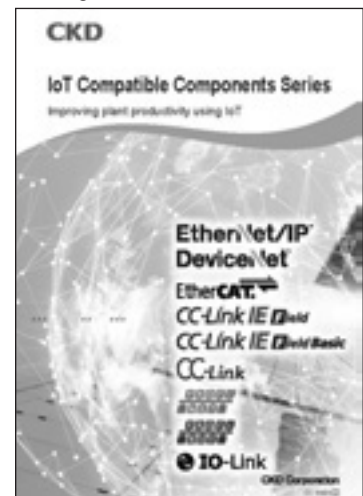
Product guide for machine tools

Catalog No.CC-1144A

■ Components for machine tools are listed in 5 categories
   • Pneumatic supply
   • Coolant control
   • Blow / Transport
   • Jig related
   • Sensor

■ IO-Link compatible sensors that support the IoT of machine tools are listed.

3, 5-port pilot operated valve, plug-in block manifold TVG Series

■Carbon neutral
- ●Reduces air leakage and power consumption.
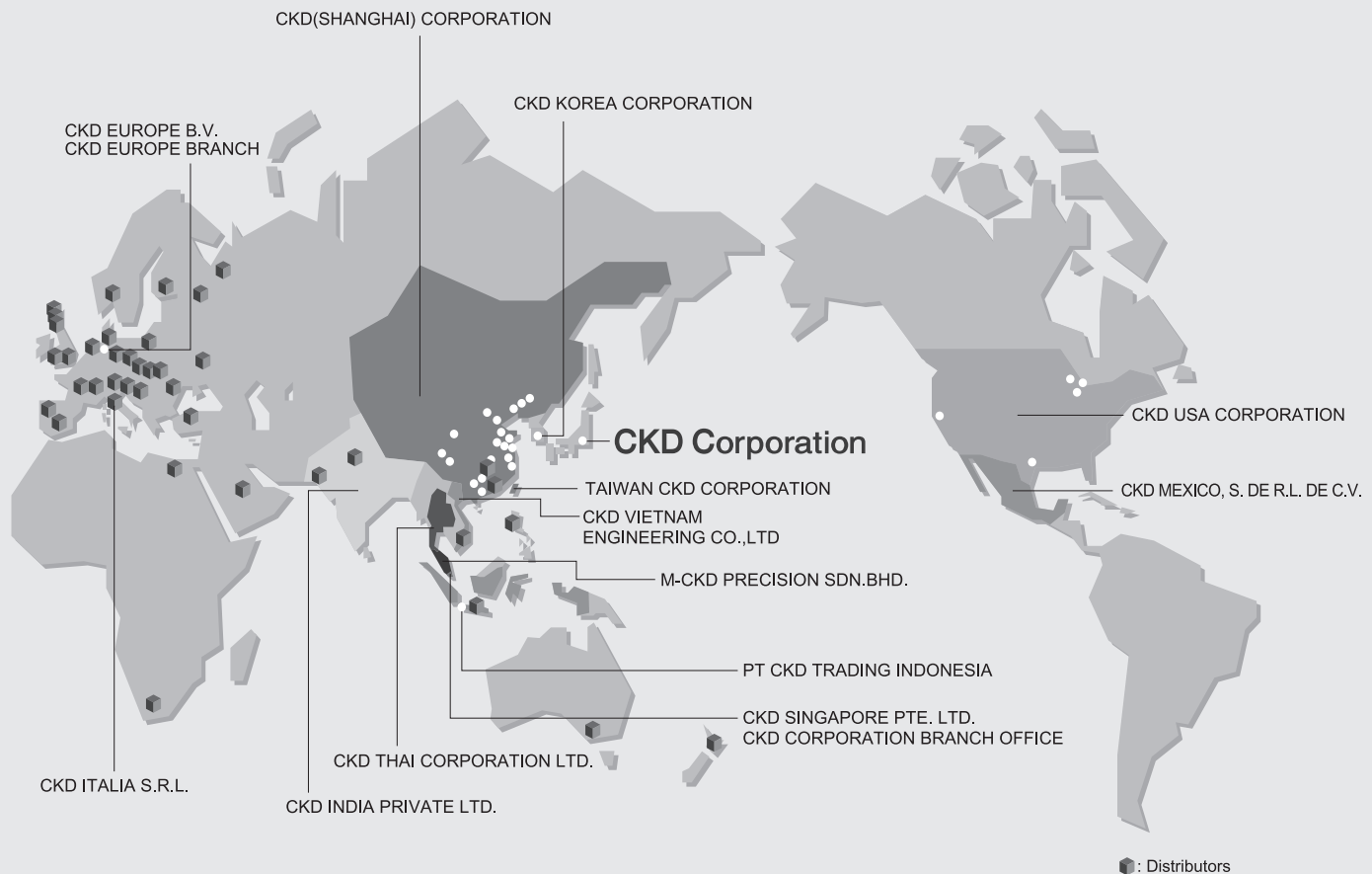- ●0.1W power consumption (Energy saving option)

■High reliability
- ●Long service life 120 million cycles (twice that of conventional models) *HP1
- ●Stable response time due to special treatment of the sliding surface

■Easy to use
- ●Thoroughly brushed up maintainability from the customer's point of view
- ●Compatible with both IP65/IP67
- ●Industry's first IO-Link Wireless (wireless) capable, Compatible with various communications
- ●Compatible with various spacers such as 10 mm width spacer regulator

Catalog No.CC-1595A

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