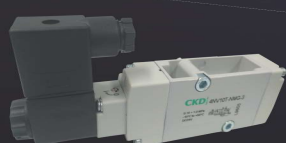


### 4NV Series (Non Explosion-proof/ Explosion-proof) NAMUR-compliant Solenoid Valve

**Designed for complete equipment for  
chemicals and energy  
Supports outdoor use**

**Spool structure, large flow rate,  
mountable on either panel or sub-base**



Non explosion-proof type



Explosion-proof type



# 4NV Series

## NAMUR-compliant Solenoid Valve

ATEX Number of explosion-proof certificate:  
TüV IT 13 ATEX 030

ATEX Explosion-proof sign:  
II 2G Ex mb IIC T4/T5 Gb  
II 2D Ex tb IIIC T130/T95°C IP66 Db



### Common specifications

Descriptions		Content
Valve and operation		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	1.0
Min. working pressure	MPa	0.15
Proof pressure	MPa	1.5
Manual override		Lock
Degree of protection		IP65
Atmosphere		Corrosive gas environment prohibited

### Electrical specifications

Descriptions			Content	
			Non-explosion proof	Explosion proof
Rated voltage	AC		220(50Hz)	
	V	DC	24	
Voltage fluctuation range			±10%	
Starting current	AC	220V	0.25	0.2
	A	DC 24V	-	-
Holding current	AC	220V	0.17	0.014
	A	DC 24V	0.125	0.125
Power consumption	AC	220V	4.2VA	3.2VA
	W	DC 24V	3	3
Thermal class			H (molded coil)	

### Individual specifications

Descriptions		4NV※(Non-explosion proof)	4NV※EA(Explosion proof)
Response time	ms	100 or less	
Temperature specification	°C (*1)	-10 ~ 50(no freezing)	-25 ~ 50(no freezing)
Explosion proof performance		-	II 2G Ex mb IIC T4/T5 Gb II 2D Ex tb IIIC T130/T95°C IP66 Db

\*1.If the fluid temperature falls below -20°C, leakage may occur, but there is no problem with operation.

### Flow specification

Ontology specification	Model type	Effective cross-sectional area(mm <sup>2</sup> )
NAMUR specification	4NV※0T	20.5
	4NV※0EA	

## How to order

4NV **1** **0** **NMG** - **3**

A Model No.	Explosion proof/ Non-explosion proof T : Non-explosion proof EA: ATEX Explosion proof				A Model No.			
					Non-explosion proof		ATEX explosion proof	
					4NV※0T		4NV※0EA	
B Solenoid position					B Solenoid position			
					1	2-position single	●	●
					2	2-position double	●	●
C Port size					C Port size			
					NMG	NAMUR-Standard body, P,R port G1/4	●	●
					NM	NAMUR-Standard body, P,R port Rc1/4	●	●
D Electrical connections					D Electrical connections			
					Blank	DIN terminal box	●	—
					L	DIN terminal box (With surge suppressor/lamp)	●	—
E Voltage					E Voltage			
					MB	Encapsulation terminal box Cabtire cable 3m	—	●
					3	24VDC	●	●
					6	220VAC(50H·Z)	●	●

## ⚠ Precautions for model No. selection

### <Example of model NO.>

#### 4NV10T-NMG-3

- A Model: 4NV
- B Solenoid position: 2-position single
- C Port size: P,R port G1/4
- D Electrical connections : Blank DIN terminal box
- E Voltage: 24VDC

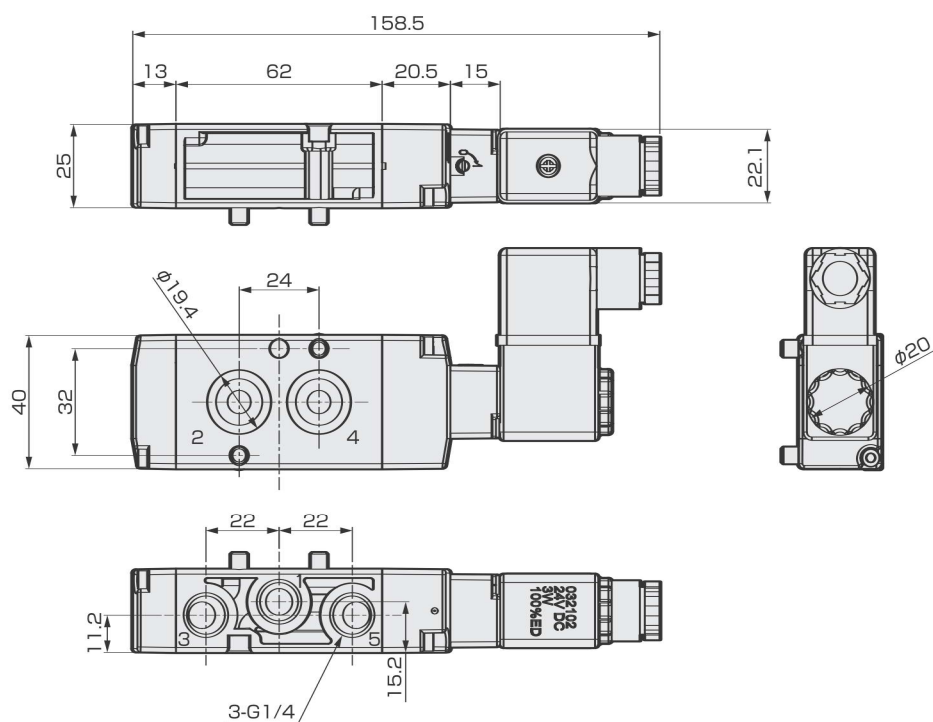
#### ●NAMUR standards:

NAMUR standards are size standards for attachment surfaces (interfaces) of actuator accessories, stipulated by VDI (The Association of German Engineer) and VDE (The Association for Electrical, Electronic & Information Technologies). Ball valve manufacturers often use NAMUR-compatible sizes (VDI/VDE3845) to provide compatibility for the attachment of accessories such as electromagnetic valves and switch boxes, which allow them to respond to wide range of needs.

## Dimensions

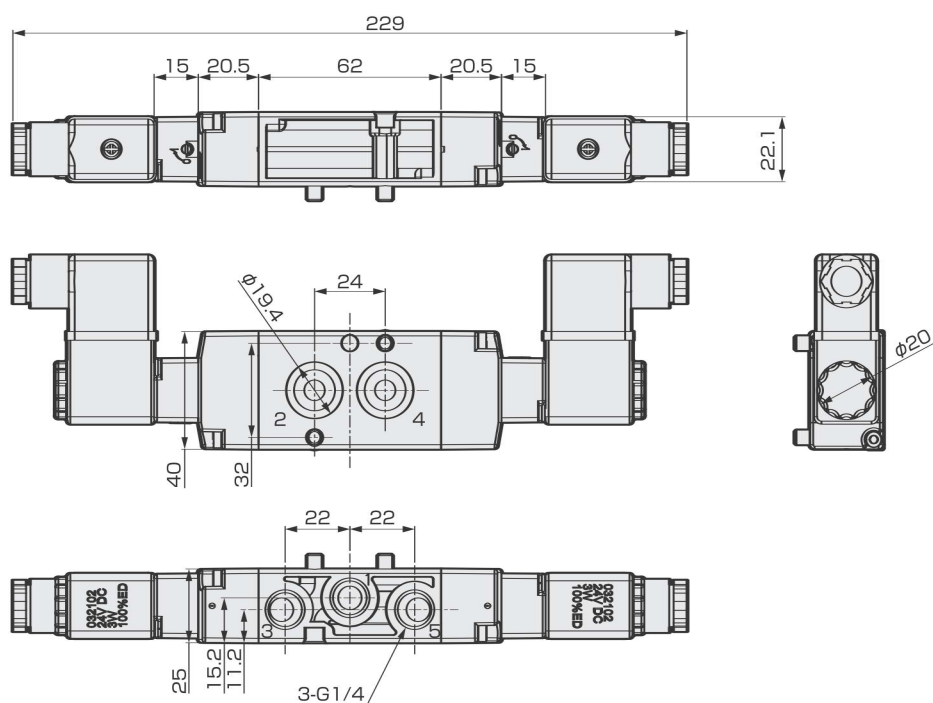
Non-explosion-proof · NAMUR standard body

2-position single solenoid



\*DIN terminal box shipping direction inward

2-position double solenoid



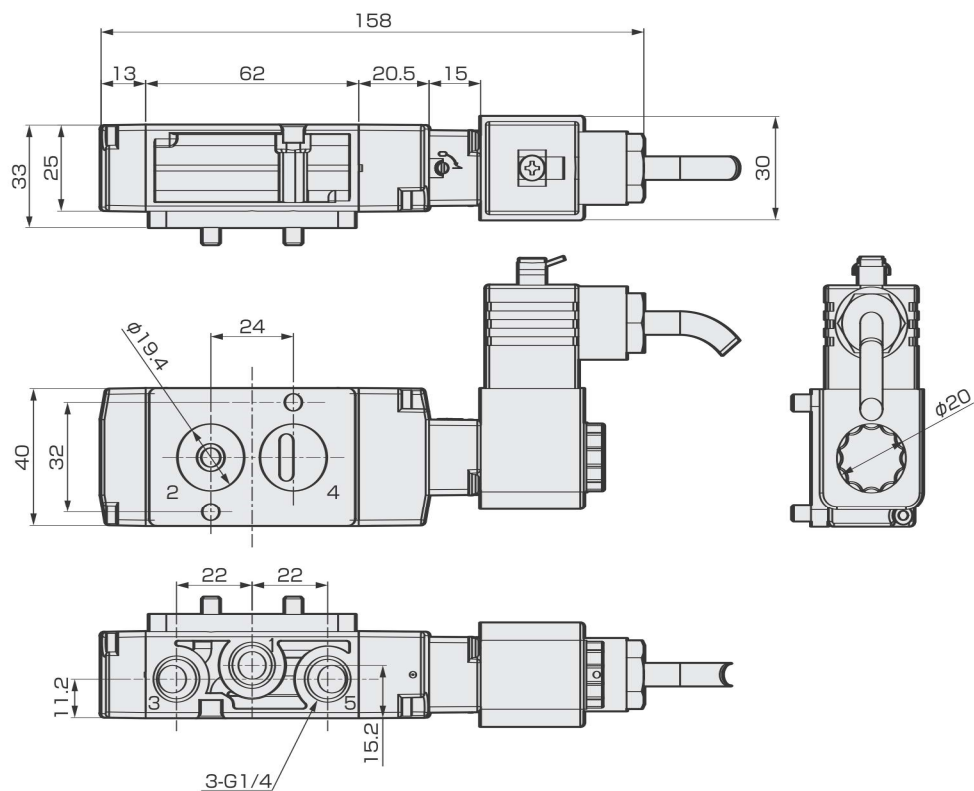
\*DIN terminal box shipping direction inward

# 4NV※0EA-NM※ Series

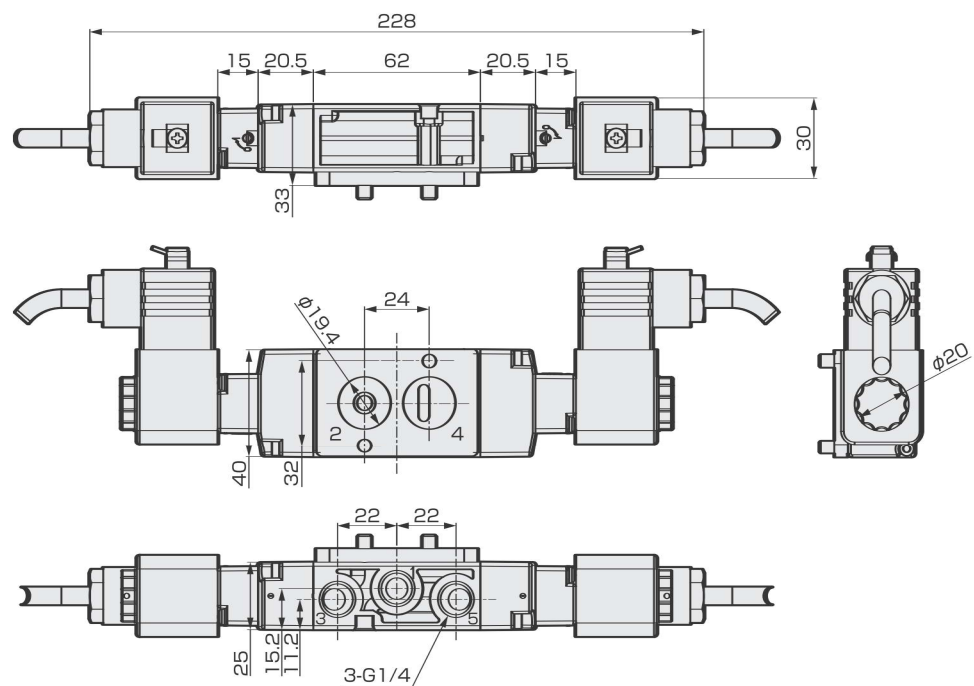
## Dimensions

Explosion-proof · NAMUR standard body

### 2-position single solenoid



### 2-position double solenoid







## Pneumatic components

### Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 59 of Pneumatic Valves(No. CB-023SA-9) for general precautions for using valves.

Product-specific cautions: Pilot operated explosion-proof 5-port valve pneumatic valve 4NV※EA series

### Design/selection



#### WARNING

■ Usable in Class 1 and 2 danger zones (Zone 1 and 2) where there is combustible gas or steam. Cannot be used in Class 0 special danger zone.

■ Select models and perform installation in accordance with JIS. C.60079 "Factory Explosion-Proof Guidelines for Users JNIOOSH-TR-NO.44 (2012)".



#### CAUTION

■ Explosive gas and explosion-proof enclosure

The degree of explosive gas danger is classified according to the group and temperature grade. Gases with equivalent risk are grouped into one group, and explosion-proof structure standards are set for each group.

Codes to indicate the type, group and temperature grade must be indicated in this order on the electrical components of explosion-proof structures.

These codes indicate which group and temperature grade the electrical components have been manufactured for, and which gases can be used.

For the example of explosion-proof solenoid valve of Exmb II C T5

#### Exmb II C T5

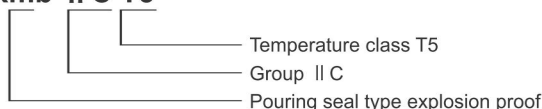


Table 2 indicates the classification of gases with a danger category of Group II C and Grade T5 temperature that are compatible with the product. Less dangerous gases are also listed that are guaranteed to be explosion-proof.

Temperature grade refers to the degree of ignition risk, and is classified into six grades according to the ignition point. It defines the maximum surface temperature of the device corresponding to each grade (Table 1).

Table 1

Descriptions	Code	Provision
Temperature grade	T1	Max.surface temperature 450°C
	T2	300°C
	T3	200°C
	T4	135°C
	T5	100°C
	T6	85°C

Table 2

Temp class Group	T1	T2	T3	T4	T5
II A	Acetone	Ethanol	Gasoline	Acetaldehyde	
	Ammonia	Isoamyl acetate	Hexane		
	Carbon monoxide	Butane			
	Ethane	Acetic anhydride			
	Acetic acid				
	Ethyl acetate				
	Toluene				
	Propane				
	Benzene				
	Methanol				
	Methane				
II B		Ethylene Ethylene oxide		Ethyl ether	
II C	Hydrogen	Acetylene			Carbon disulfide

#### ■ Dangerous zone

Situations where explosive gases and air mix at a high enough level to cause an explosion or fire are called "danger zones". These zones are classified into Class 0 special danger zones, Class 1 danger zones and Class 2 danger zones according to the time and frequency at which the dangerous atmosphere is reached. The explosion-proof structure that can be used is determined according to these classes.

● Special danger zone (Zone 0) (4NV explosion-proof Series cannot be used.) Zones where a dangerous atmosphere is or could be continuously generated, and where the concentration of explosive gas is maintained continuously or for a long time above the lower limit for explosions.

Example a: The open space above a flammable fluid inside a container or tank

b: Inside a combustible gas container or tank

c: Near flammable fluid in an open container

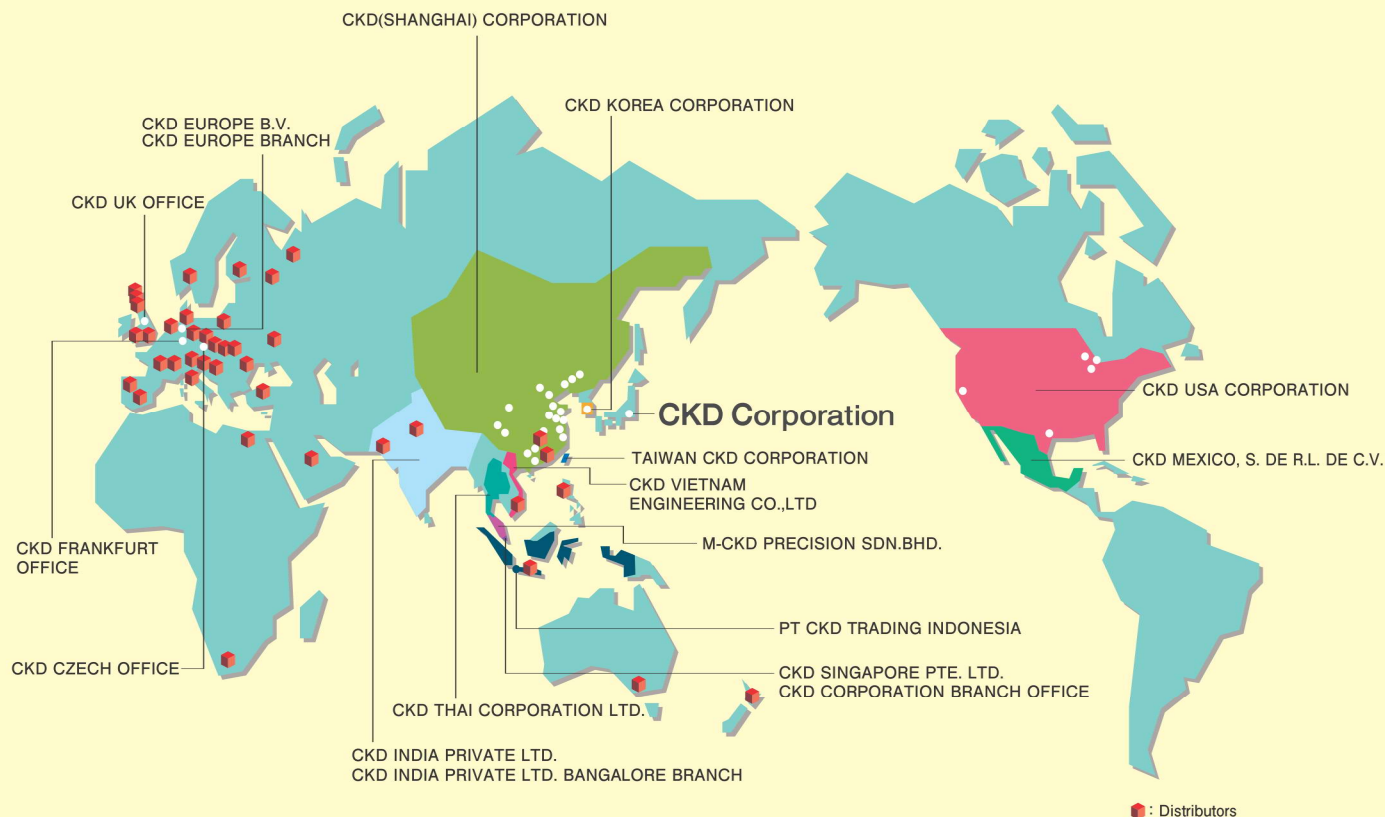
#### ● Class 1 special danger zone (Zone 1)

(1) Zones where explosive gas could accumulate to a dangerous concentration during operations such as the opening/closing of the lid for removing the product or operation of the safety valve, etc.

(2) Zones where explosive gases are likely to accumulate to dangerous concentrations during repair or maintenance or due to leakage, etc.

#### ● Class 2 special danger zone (Zone 2)

(1) Zones where combustible gases or flammable fluids are regularly handled, but where the gases and fluids are sealed in a vessel or equipment, and where the gases and fluids could leak to dangerous concentrations only if the vessel or equipment breaks by accident or due to misoperation.



## CKD Corporation

Website <http://www.ckd.co.jp/>

### U.S.A.

#### CKD USA CORPORATION

- CHICAGO HEADQUARTERS  
4080 Winnetka Avenue, Rolling Meadows, IL 60008, USA  
PHONE +1-847-368-0539 FAX +1-847-786-0575
- CINCINNATI OFFICE
- SAN ANTONIO OFFICE
- SAN JOSE OFFICE
- DETROIT OFFICE

### Mexico

#### CKD MEXICO, S. DE R.L. DE C.V.

- Cerrada la Noria No. 200 Int. A-01, Querétaro Park II,  
Parque Industrial Querétaro, Santa Rosa Jáuregui,  
Querétaro, C.P. 76220, México  
PHONE +52-442-161-0624

### Europe

#### CKD EUROPE B.V.

- Beechavenue 125A, 1119 RB Schiphol-Rijk, The Netherlands  
PHONE +31-23-554-1490
- GERMANY OFFICE

#### CKD CORPORATION EUROPE BRANCH

- SALES HEADQUARTERS  
Beechavenue 125A, 1119 RB Schiphol-Rijk, The Netherlands  
PHONE +31-23-554-1490
- CZECH OFFICE
- UK OFFICE

### Malaysia

#### M-CKD PRECISION SDN.BHD.

- HEAD OFFICE  
Lot No.6, Jalan Modal 23/2, Seksyen 23, Kawasan MIEL,  
Fasa 8, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia  
PHONE +60-(0)3-5541-1468 FAX +60-(0)3-5541-1533
- JOHOR BAHRU BRANCH OFFICE
- PENANG BRANCH OFFICE

### Thailand

#### CKD THAI CORPORATION LTD.

- SALES HEADQUARTERS  
Suwan Tower, 14/1 Soi Saladaeng 1, North Sathorn Road,  
Kwaeng Silom, Khet Bangrak, Bangkok 10500, Thailand  
PHONE +66-(0)2-267-6300 FAX +66-(0)2-267-6305
- RAYONG OFFICE
- NAVANAKORN OFFICE
- EASTERN SEABOARD OFFICE
- LAMPHUN OFFICE
- KORAT OFFICE
- AMATANAKORN OFFICE
- PRACHINBURI OFFICE
- SARABURI OFFICE

- 2-250, Oujji, Komaki City, Aichi, 485-8551 Japan
- PHONE+81-(0)568-74-1338 FAX +81-(0)568-77-3461

### Singapore

#### CKD SINGAPORE PTE. LTD.

- No.33 Tannery Lane #04-01 Hoestel Industrial  
Building, Singapore 347789, Singapore  
PHONE +65-67442623 FAX +65-67442486

#### CKD CORPORATION BRANCH OFFICE

- No.33 Tannery Lane #04-01 Hoestel Industrial  
Building, Singapore 347789, Singapore  
PHONE +65-67442620 FAX +65-68421022

### India

#### CKD INDIA PRIVATE LTD.

- Unit No. 607, 6th Floor, Welldone Tech Park, Sector 48,  
Sohna Road, Gurgaon-122018, Haryana, India  
PHONE +91-(0)124-418-8212

#### CKD INDIA PRIVATE LTD. BANGALORE BRANCH

- No. 201/B, 2nd Floor, Museum Terraces Apartment, No. 29,  
Museum Road, Bangalore-560001, Karnataka, India  
PHONE +91-(0)80-4212-7008 FAX +91-(0)80-4212-7007

### Indonesia

#### PT CKD TRADING INDONESIA

- SALES HEADQUARTERS  
Menara Bidakara 2, 18th Floor, Jl. Jend. Gatot Subroto Kav.  
71-73, Pancoran, Jakarta 12870, Indonesia  
PHONE +62 21-2938-8601 FAX +62 21-2906-9470
- SURABAYA OFFICE

### Vietnam

#### CKD VIETNAM ENGINEERING CO.,LTD.

- 18th Floor, CMC Tower, Duy Tan Street, Cau Giay  
District, Hanoi, Vietnam  
PHONE +84-4-37957631 FAX +84-4-37957637

### Taiwan

#### TAIWAN CKD CORPORATION

- 16F-3, No. 7, Sec. 3, New Taipei Blvd., Xinzhuang Dist.,  
New Taipei City 242, Taiwan  
PHONE +886-(0)2-8522-8198 FAX +886-(0)2-8522-8128
- HSINCHU OFFICE
- TAICHUNG OFFICE
- TAINAN OFFICE

### China

#### CKD(SHANGHAI)CORPORATION

- SALES HEADQUARTERS / SHANGHAI PUXI OFFICE  
Room 601, 6th Floor, Yuanzhongkeyan Building, No. 1905  
Hongmei Road, Xinhui District, Shanghai 200233, China  
PHONE +86-(0)21-61911888 FAX +86-(0)21-60905356
- SHANGHAI PUDONG OFFICE
- WUXI OFFICE
- HANGZHOU OFFICE
- NINGBO OFFICE
- NANJING OFFICE
- SUZHOU OFFICE
- KUNSHAN OFFICE
- BEIJING OFFICE
- TIANJIN OFFICE
- CHANGCHUN OFFICE
- DALIAN OFFICE
- QINGDAO OFFICE
- JINAN OFFICE
- YANTAI OFFICE
- SHENYANG OFFICE
- CHONGQING OFFICE
- CHENGDU OFFICE
- XIAN OFFICE
- WUHAN OFFICE
- ZHENGZHOU OFFICE
- CHANGSHA OFFICE
- GUANGZHOU OFFICE
- WEST SHENZHEN OFFICE
- EAST SHENZHEN OFFICE
- DONGGUAN OFFICE
- XIAMEN OFFICE

### Korea

#### CKD KOREA CORPORATION

- HEADQUARTERS  
(3rd Floor), 44, Sinsu-ro, Mapo-gu, Seoul 121-856, Korea  
PHONE +82-(0)2-783-5201~5203 FAX +82-(0)2-783-5204
- SUWON OFFICE
- CHEONAN OFFICE
- ULSAN OFFICE

The goods and/or their replicas, the technology and/or software found in this catalog are subject to complementary export regulations by Foreign Exchange and Foreign Trade Law of Japan.

If the goods and/or their replicas, the technology and/or software found in this catalog are to be exported, law requires that the exporter makes sure that they will never be used for the development and/or manufacture of weapons for mass destruction.