

Report No. : H24014E

18th Feb., 2004

# TEST REPORT

ON  
Control Box

- Note : 1. This report is valid for the apparatus.  
2. Only the original report is guaranteed.

KOREA INSTITUTE OF MACHINERY AND MATERIALS  
INDUSTRIAL SAFETY RESEARCH CENTER  
29-1, SECHUL-LI, BAEBANG-MYUN, ASAN-CITY,  
CHUNGCHEONGNAM-DO, 336-795, KOREA

TELEPHONE : (041) 540-5357

FAX : (041) 540-5360

E-mail : choibs@office.hoseo.ac.kr

## TEST REPORT

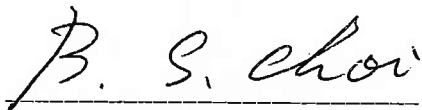
Date : 18th Feb., 2004

1. Name of test : Dust & Water Protection Test
2. Applicant (name) : KUN HUNG ELECTRIC CO., LTD.  
(address) #113-4, Changan-dong, Dongdaemoon-ku, Seoul, Korea
3. Manufacturer : ditto
4. Test specimen
  - 1) Name : Control Box
  - 2) Model(Type) : KCB-221D/251D/301D, KCB-222D/252D/302D,  
KCB-223D/253D/303D, KCB-224D/254D/304D
  - 3) Type of protection : IP66
  - 4) Construction : Refer to Appendix 4.
5. Applied Standard : IEC 60529
6. Test Period : 1st May, 2003 ~ 9th May, 2003
7. Test Result : Test specimen satisfied the performance criteria in IEC-Pub. 60529  
(Refer to test results of Appendix 1.)

This is to certify that the above mentioned test have been properly carried out.

Tested by :

Approved by :



Beom-Shik, Choi  
Engineer, Explosion Proof Department,  
Industrial Safety Research Center



Chun-Ha Lee, Ph. D.  
Director, Explosion Proof Department  
Industrial Safety Research Center

(This report consists of 8 pages)

Appendix 1.

## TEST RESULTS

Test Item	Tested	Results	Remarks
I. Degree of protection			
1. First characteristic numeral	○	Satisfactory	Refer to Appendix 2.
2. Second characteristic numeral	○	Satisfactory	Refer to Appendix 3.
II. Marking	○	Satisfactory	IP66

Test results for dust protection (first characteristic numeral 6)

Description of test

1. Degree of protection :

No ingress of dust.

2. Testing method :

The test was made using equipment incorporating with the principles in which talcum powder was maintained in suspension in a suitable closed test chamber. The talcum powder used should pass a square-meshed sieve whose nominal wire diameter was  $50\mu\text{m}$  and the nominal width between wires was  $75\mu\text{m}$ .

The amount of talcum powder was 2kg per cubic meter of the chamber volume.

The equipment under test was supported in its normal operating position inside the test chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of test. The test shall be continued for a period of 8h.

3. Test results : No ingress of dust

Test results for dust protection (first characteristic numeral 6)

Description of test

1. Degree of protection : No ingress of dust.

2. Testing method :

The test was made using enclosure incorporating with the principles in which talcum powder was maintained in suspension in a suitable closed test chamber. The talcum powder used should pass a square-meshed sieve whose nominal wire diameter was  $50\mu\text{m}$  and the nominal width between wires was  $75\mu\text{m}$ .

The amount of talcum powder was 2kg per cubic meter of the chamber volume.

The enclosure under test was supported inside the test chamber, and the pressure inside the enclosure was maintained below atmospheric pressure by a vacuum pump.

- Depression : 2kPa(20mbar)
- Extraction : 40 volumes per hour
- Period : 8 hours.

3. Test results : No ingress of dust

**Test results for water protection (second characteristic numeral 6)**

Description of test

1. Degree of protection :

Water from projected by a nozzle against the enclosure from any direction shall have no harmful effect.

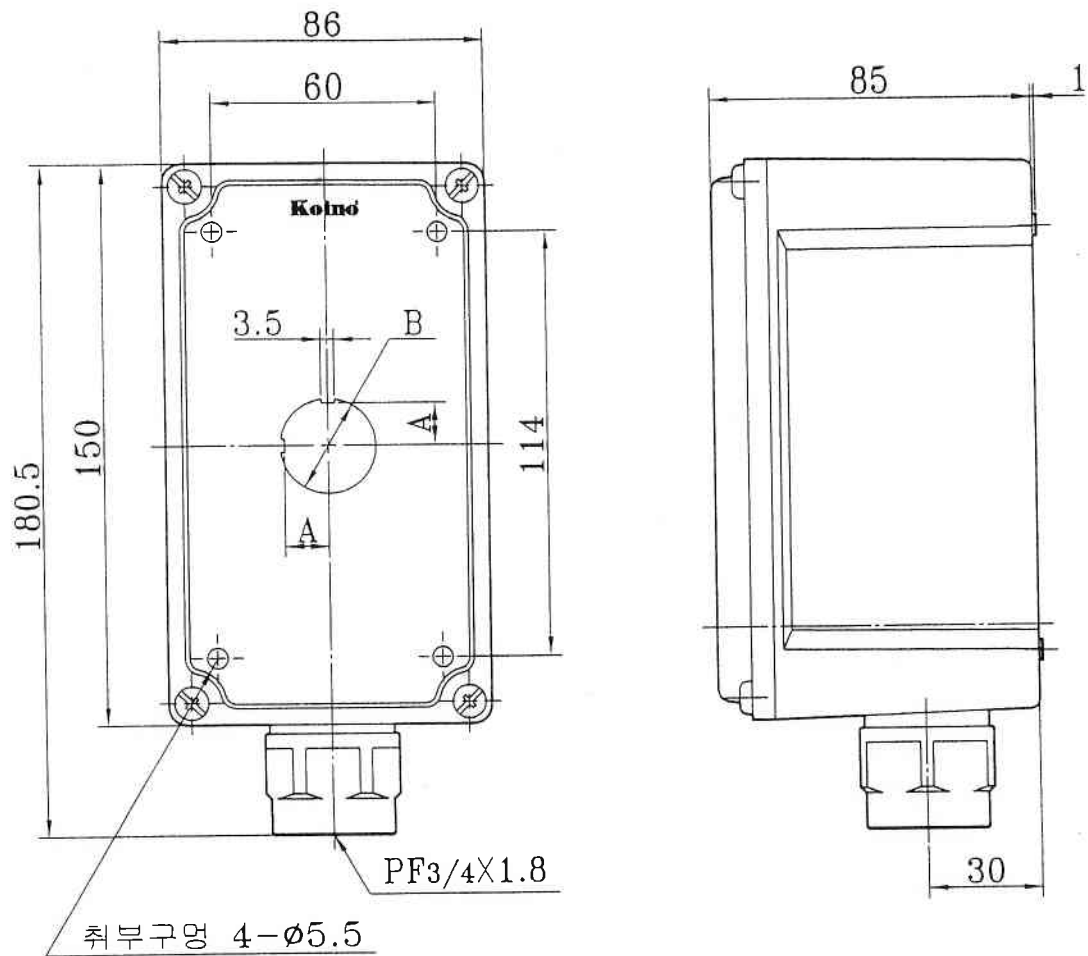
2. Testing method :

The test was made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle.

The conditions were as follows.

- nozzle internal diameter : 12.5mm;
- delivery rate : 100 ℓ / min  $\pm$  5%;
- water pressure : to be adjusted to achieve the specified delivery rate;
- test duration per square metre of enclosure surface area likely to be sprayed : 1min;
- minimum test duration : 3 min;
- distance from the nozzle to the machine surface : approximately 3m.

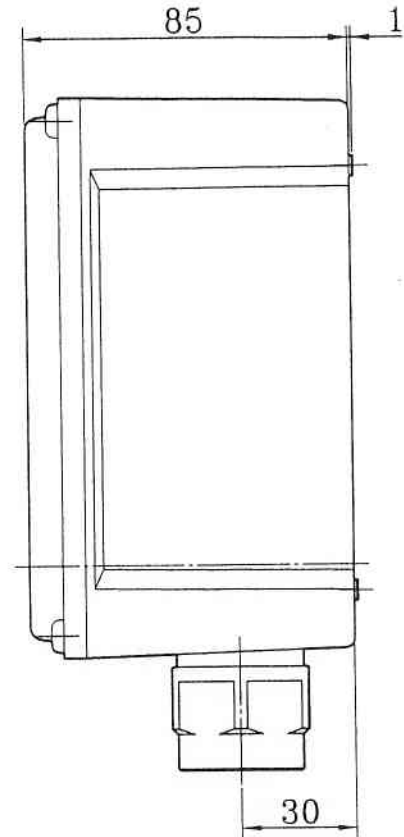
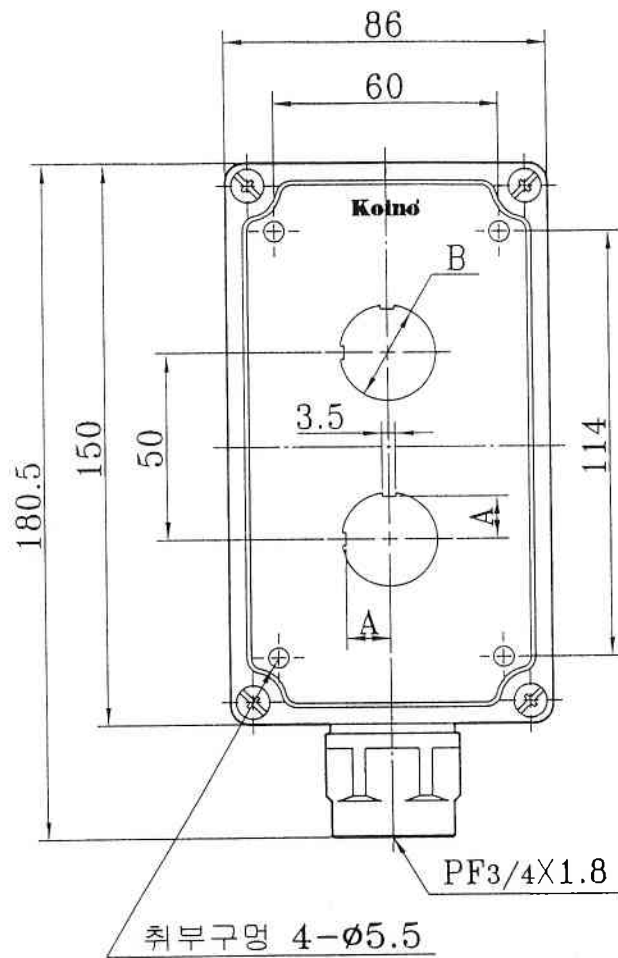
3. Test results : No Harmful immersion was found



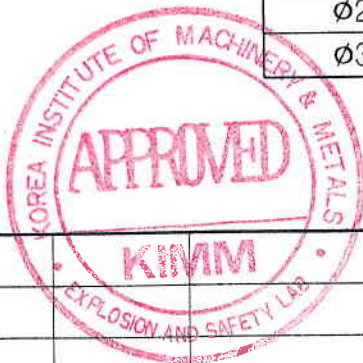
	형 명	공 수	A	B
φ22	KCB-221D	1공	10	φ22.3
φ25	KCB-251D		11.5	φ25.3
φ30	KCB-301D		14	φ30.3



0	04.1.16	최초설계	500/mo	3/4/17	2/8/18
Rev.	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED
TITLE: 외형치수도(1공)		DWG No.: CB-221-017	MODEL: KCB-221D~301D		
<b>Koino KUN HUNG ELECTRIC CO., LTD.</b>				Qty.: -	Scale: 1:2

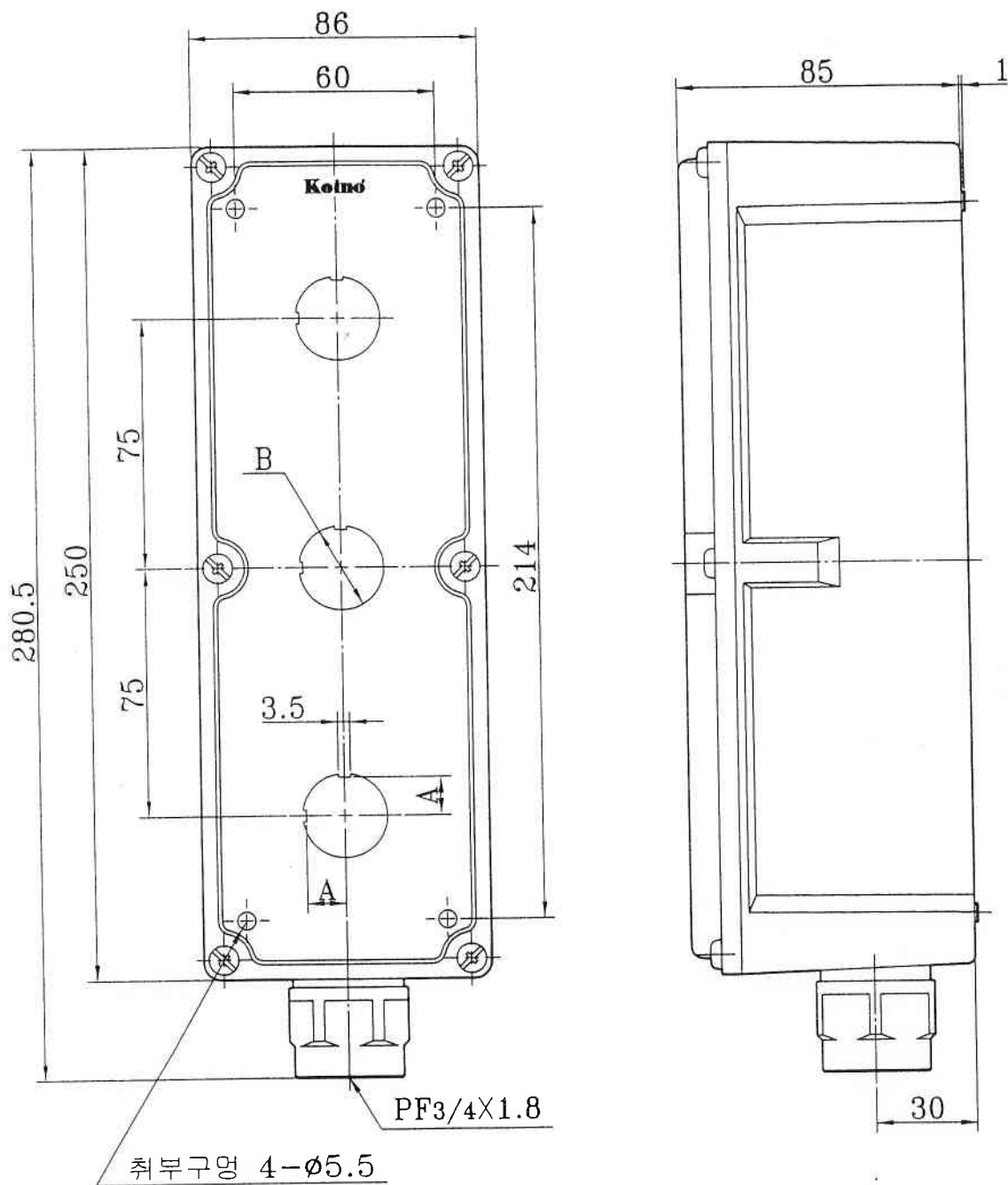


	형 명	공 수	A	B
φ22	KCB-222D	2공	10	φ22.3
φ25	KCB-252D		11.5	φ25.3
φ30	KCB-302D		14	φ30.3



0	04 / 16	최초설계			
Rev.	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED
TITLE: 외형치수도(2공)		DWG No.: CB-222-018	MODEL: KCB-222D~302D		
<b>Koino</b> KUN HUNG ELECTRIC CO., LTD.				Qty. : -	Scale: 1:2

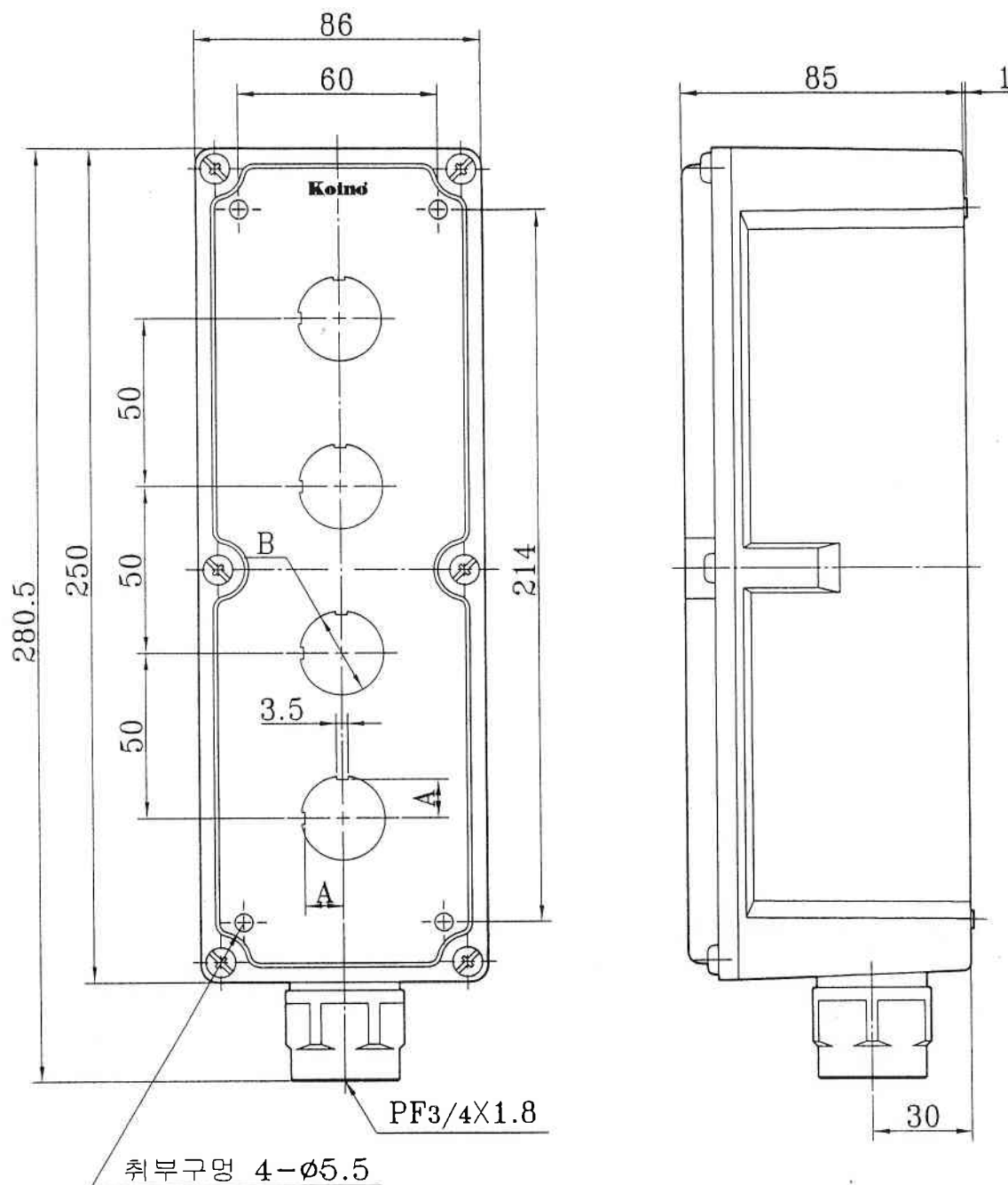




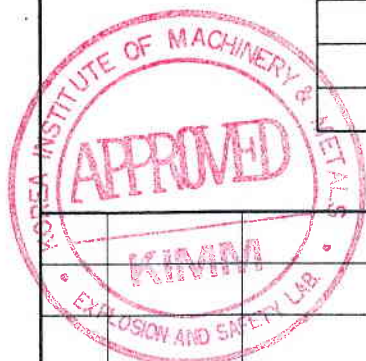
	형 명	공 수	A	B
Ø22	KCB-223D	3공	10	Ø22.3
Ø25	KCB-253D		11.5	Ø25.3
Ø30	KCB-303D		14	Ø30.3



0	04.1.16	최초설계	500mm	YJH	Seo
Rev.	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED
TITLE: 외형치수도(3공)		DWG No.: CB-223-019	MODEL: KCB-223D~303D		
<b>Koino KUN HUNG ELECTRIC CO., LTD.</b>				Qty. : -	Scale: 1:2



	형 명	공 수	A	B
$\phi 22$	KCB-224D	4공	10	$\phi 22.3$
$\phi 25$	KCB-254D		11.5	$\phi 25.3$
$\phi 30$	KCB-304D		14	$\phi 30.3$



0	04.1.16	최초설계	Seo Jin	김기영	최기현
Rev.	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED
TITLE: 외형치수도(4공)		DWG No.: CB-224-020	MODEL: KCB-224D~304D		
<b>Koino KUN HUNG ELECTRIC CO., LTD.</b>				Qty. : -	Scale: 1:2