

# 1. 제 품 사 양 서

- (1) 품 명 : 액체발열용 시즈히터(Sheath Heater)
- (2) 형 식 : HDC -340-3P-**A**-**B**-**C**-**E** (표2.참조)
- (3) 방 폭 등 급 : Ex dII B T5
- (4) 정 격 : 제(7)항 제원을 참조
- (5) 주 변 온 도 : -20 ℃ ~ 40 ℃
- (6) 최대 사용 온도 : 80 ℃
- (7) 제 원 :

## (가) 히터의 제원

히터의 제원은 그림 1의 히터그림에 표기된 부호를 표 2로 “동일 형식 일람표”로 만들었다. 그 규격표에서 히터의 형식을 구성할 수 있다.

여기서 B는 히터를 피 가열체에 체결할 수 있는 소켓 과 플랜지의 선택, C는 소켓과 플랜지의 규격, D는 히터의 시스(Sheath)재료, E는 히터의 침적길이 (소켓 또는 플랜지 밑단부터 히터 끝단의 길이)이다.

그러나 이렇게 다양한 모델을 소화하기 위하여 많은 구성요소를 사용하지만 안전을 위하여 부분적으로 제한하여야 한다. 표2 에서는 히터의 소비전력량과 히터의 삽입부 길이에서 결정되어 있는 가열부로부터 산출된 표면밀도가 6.4W/cm<sup>2</sup> 이하가 되는 것만 히터제원으로 인정한다.

표 1. 안전을 위한 전력량에 따른 히터의 삽입길이(E)의 제한 (sd ≤ 6.4/cm<sup>2</sup>)

길이 E mm		전 력 량 [W]							
		1 000	1 500	2 000	2 500	3 000	3 500	4 000	5 000
250		○	×	×	×	×	×	×	×
300		○	×	×	×	×	×	×	×
350		○	○	×	×	×	×	×	×
400		○	○	○	×	×	×	×	×
450		○	○	○	×	×	×	×	×
500		○	○	○	○	×	×	×	×
600		○	○	○	○	×	×	×	×
700		○	○	○	○	○	○	×	×
800		○	○	○	○	○	○	○	×
900		○	○	○	○	○	○	○	○
1 000		○	○	○	○	○	○	○	○
전 력 량 과 저 항	110 V	12.1	8.1	6.1	4.8	4.0	3.5	3.0	2.4
	220 V	48.4	32.3	24.2	19.4	16.1	13.8	12.1	9.7
	380 V	144.4	96.3	72.2	57.8	48.1	41.3	36.1	28.9
	460 V	211.6	141.1	105.8	84.6	70.5	60.5	52.9	42.3
	480 V	230.4	153.6	115.2	92.2	76.8	65.8	57.6	46.1

표2. 동일 형식 일람표

Code	기본사항	전력,전압	설치기구	m규격		히터의 침적길이
		A	B	C1	C2	E
MODEL	HDC - 340 - 3PH -					

전력,전압	
Code	A
전압표기	480 VAC 이하
전력량표기	5 000 W 이하

설치기구의 구분		설치기구의 규격 (C)			
Code	B	Code	C1	Code	C2
M	Socket	PT	PT	2.0	2"
		NT	NPT	2.5	2 1/2"
				3.0	3"
F	Flange	⇨	150#	⇨	25A
		⇨	300#	⇨	32A
		⇨	5 K	⇨	40A
		⇨	10 K	⇨	50A
		⇨	20 K	⇨	65A
		⇨	(기타)	⇨	80A
				⇨	(기타)

히터침적길이	
Code	E
250	250 mm
300	300 mm
350	350 mm
400	400 mm
450	450 mm
500	500 mm
600	600 mm
700	700 mm
800	800 mm
900	900 mm
1000	1 000 mm
숫자 표기	(기타)
E 중 발열부의 표면밀도 sd 값은 표1참조	

### III 제품사진



사진 1. HDC-340-3P 히터의 전체사진

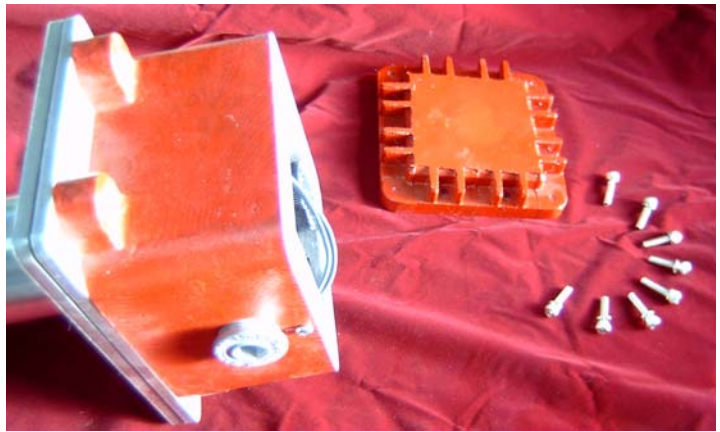
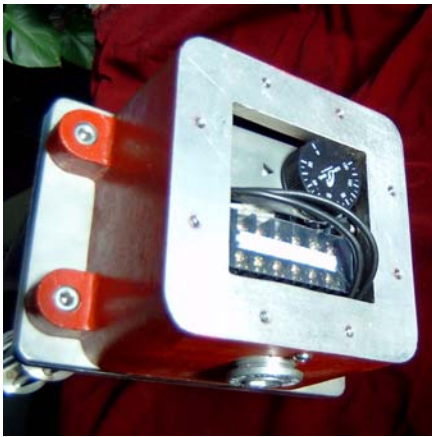


사진 2. HDC-340-3P 히터의 방폭용기의 조립된 사진

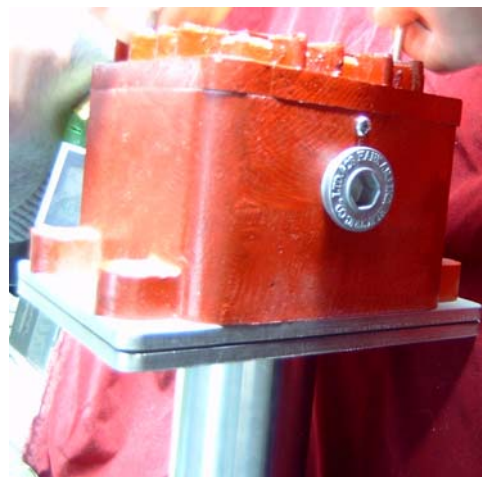


사진 3. HDC-340-3P 히터의 플랜지, 소켓부, PLUG의 조립된 사진

### Certificate of Approval

Product	SHEATH HEATER
Name and address of the applicant	hand A therm Technology CO., LTD. C79, Yulsan-ri, Paltan-myeon, Hwasung-si, Kyunggi-do, Korea)
Name and address of the manufacturer	Ditto
Name and address of the factory	Ditto
Rating and principal characteristics	Ex d IIB T3 IP65 [AC 220V, 1000 W]
Trade mark (if any)	
Model / Type Ref.	HDC-200-2NPT-340
Additional information (if necessary)	
A sample of the product was tested and found to be in conformity with	Article 33, Industrial Safety & Health Law, KOREA
The terms of validity	until Sep. 13, 2011
This Certificate of Approval is issued by the KOSHA	
Date : Nov. 22, 2007	Sep. 14, 2006 (Original issue)
Signature <i>Park, Kilsang</i>	
President	PARK, KIL SANG

### Certificate of Approval

Product	SHEATH HEATER
Name and address of the applicant	hand A therm Technology CO., LTD. C79, Yulsan-ri, Paltan-myeon, Hwasung-si, Kyunggi-do, Korea)
Name and address of the manufacturer	Ditto
Name and address of the factory	Ditto
Rating and principal characteristics	Ex d IIB+H <sub>2</sub> T4 [AC 220V, Max. 1kW, T <sub>process</sub> =80℃]
Trade mark (if any)	
Model / Type Ref.	HDC-100
Additional information (if necessary)	The heating part of the heater is not allowed to be exposed in the air.
A sample of the product was tested and found to be in conformity with	Article 33, Industrial Safety & Health Law, KOREA
The terms of validity	until Aug. 25, 2009
This Certificate of Approval is issued by the KOSHA	
Date : Nov. 22, 2007	Aug. 26, 2004 (Original issue)
Signature <i>Park, Kilsang</i>	
President	PARK, KIL SANG

### Certificate of Approval

Product	SHEATH HEATER
Name and address of the applicant	hand A therm Technology CO., LTD. C79, Yulsan-ri, Paltan-myeon, Hwasung-si, Kyunggi-do, Korea)
Name and address of the manufacturer	Ditto
Name and address of the factory	Ditto
Rating and principal characteristics	Ex d IIB T5 [Max. 480V, Max. 5000 W, T <sub>process</sub> =80℃]
Trade mark (if any)	
Model / Type Ref.	HDC-340-3P
Additional information (if necessary)	
A sample of the product was tested and found to be in conformity with	Article 33, Industrial Safety & Health Law, KOREA
The terms of validity	until Jun. 18, 2012
This Certificate of Approval is issued by the KOSHA	
Date : Nov. 22, 2007	Jun. 19, 2007 (Original issue)
Signature <i>Park, Kilsang</i>	
President	PARK, KIL SANG

## CERTIFICATE

*of*  
Electrical equipment for use in explosive atmospheres

- Application No. : **KTL454-016-99**
- This certificate is issued for the equipment :  
**Sheath RTD [ Model : HDC - 101 ]**
- Manufactured and submitted for certification by :  
**hand A therm Technology CO., LTD**  
(ADDRESS : 213-3 DukWoo-Ri BongDum-Up HwaSung-Koon KyungGI-Do)
- This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the test report therein referred to.
- The KTL, notified body in accordance with Article 14-4 of Act on the Establishment of Industrial Technology Foundation & Article 4 of the Rules of Authorization body for service consignment under the Ministry of Labor 21 January 1998, tests that this equipment has been found to comply with :  
**Notification No.1998-43 (Ministry of Labor)**  
**IEC79-0 2nd edition (1983) +Amd No.1(1987) +Amd No.2(1991)**  
**IEC79-1 3rd edition (1990)**  
and has successfully met the examination and test requirements recorded in confidential report number :  
**KTL Test Report No. R454-016/07-APR-99**
- The equipment marking shall include the code :  
**Ex d IIC T6 (T<sub>amb</sub> = +40℃)**
- This equipment may be marked Designated Mark specified in Attached Table2 of Notification No.1997-44 (Ministry of Labor).
- This certificate is issued by Korea Testing Laboratory and based on the Industrial Safety & Health Law.

Approved by **Woo-Sup, Lee**

*Woo-Sup, Lee*  
08 April 1999

**KOREA TESTING LABORATORY**