

Process Control and Documentation



B400/C440/P470



B410/C450/P480



H1700 with colored, tabular depiction



H3700 with colored graphic presentation

Nabertherm has many years of experience in the design and construction of both standard and custom control alternatives. All controls are remarkable for their ease of use and even in the basic version have a wide variety of functions.

Standard Controllers

Our extensive line of standard controllers satisfies most customer requirements. D60Based on the specific furnace model, the controller regulates the furnace temperature reliably and is equipped with an integrated USB-interface for documentation of process data (NTLog/NTGraph).

The standard controllers are developed and fabricated within the Nabertherm group. When developing controllers, our focus is on ease of use. The user can choose between 17 languages. From a technical standpoint, these devices are custom-fit for each furnace model or the associated application. From the simple controller with an adjustable temperature to the control unit with freely configurable control parameters, stored programs and PID microprocessor control with self-diagnosis system, we have a solution to meet your requirements.

HiProSystems Control and Documentation

This professional process control with PLC controls for single and multi-zone furnaces is based on Siemens hardware and can be adapted and upgraded extensively. HiProSystems control is used when more than two process-dependent functions, such as exhaust air flaps, cooling fans, automatic movements, etc., have to be handled during a cycle, when furnaces with more than one zone have to be controlled, when special documentation of each batch is required and when remote service is required. It is flexible and is easily tailored to your process or documentation needs.

Alternative User Interfaces for HiProSystems

Process control H500/H700

This basic panel accommodates most basic needs and is very easy to use. Firing cycle data and the extra functions activated are clearly displayed in a table. Messages appear as text. Data can be stored on a USB stick using the „NTLog Comfort“ option (not available for all H700).

Process control H1700

Customized versions can be realized in addition to the scope of services of the H500/H700

Process control H3700

Display of functions on a large 12“ display. Display of basic data as online trend or as a graphical system overview. Scope as H1700

Control, Visualisation and Documentation with Nabertherm Control Center NCC

Upgrading the HiProSystems-Control individually into a PC-based NCC provides for additional interfaces, operating documentation, and service benefits in particular for controlling furnace groups including charge beyond the furnace itself (quenching tank, cooling station etc.):

- Recommended for heat treatment processes with extensive requirements in respect to documentation e.g. for metals, technical ceramics or in the medicine field
- Software extension can be used also in accordance with the AMS 2750 E (NADCAP)
- Documentation according to the requirements of Food and Drug Administration (FDA), Part 11, EGV 1642/03 possible
- Charge data can be read in via barcodes
- Interface for connection to overriding systems
- Connection to mobile phone or stationary network for malfunction message transmission via SMS
- Control from various locations over the network
- Measurement range calibration up to 18 temperatures per measuring point for use at different temperatures. For norm-relevant applications a multilevel calibration is possible.

Assignment of Standard Controllers to Furnace Families

	L1/12	L 3 - LT 40	LE 1/11 - LE 14/11	L 9/11/SKM	LV, LVT	L../11 BO	L(T) 9../SW	N..CUP	N 7/H - N 87/H	LH 15/12 - LF 120/14	LHTC(T)	LHT ../(D)	LHT 01/17 LB - LHT 16/17 LB	LHT 04/16 SW + LHT 04/17 SW	HT, HFL	HTC 16/16 - HTC 450/16	TR	TR..LS	KTR	NA 15/65	NA 30/45 - N 500/85 HA	NA-1, NA-SI	N(B) ..BO	RD	R	RT	RHTC	RHTH/RHTV	RSH/RSV	RSRB, RSRC	K	KC	LS	GR	NRA 17/06 - NRA 1000/11	NR, NRA ..IDB	NR, NRA ..H ₂	(S)VHT			
Catalog page	4	4,7,8	6	9	10	12	13	15	16	19	20	21	22	23	24,27	26	28	28	30	34	34	35	36	38	39	40	41	42	44	46	56	56	57	57	58	60	60	63			
Controller																																									
R7	●		●													●							●							●											
C6/3208																																									
3216	○																						○																		
3504																																									
3508																																									
B400																																									
B410		●		●	●		●	●	●	●	●									●	●	●			●	●	●		●												
C440																																									
C450		○		○	○	●	○		○	○	○																														
P470												●	●	●	● ³	● ³												●													
P480		○		○	○	○	○		○	○	○																														
H500/PLC																																									
H700/PLC																																									
H1700/PLC																																									
H3700/PLC																																									
NCC																																									

Functionality of the Standard Controllers

	R7	C6	3216	3208	B400/ B410	C440/ C450	P470/ P480	3504	H500	H700	H1700	H3700	NCC
Number of programs	1	1	1		5	10	50	25	20	1/10 ³	10	10	50
Segments	1	2	8		4	20	40	500 ³	20	20	20	20	20
Extra functions (e.g. fan or autom. flaps) maximum					2	2	2-6	2-8 ³	3 ³	○ ³	6/2 ³	8/2 ³	16/4 ³
Maximum number of control zones	1	1	1	1	1	1	3	2 ^{1,2}	1-3 ³	○ ³	8	8	8
Drive of manual zone regulation					●	●	●						
Charge control/bath control								○	○	○	○	○	○
Auto tune			●	●	●	●	●	●					
Real-time clock					●	●	●		●	●	●	●	●
Plain, blue-white LC-display					●	●	●						
Graphic color display									4" 7"	7"	7"	12"	19"
Status messages in clear text				●	●	●	●	●	●	●	●	●	●
Data entry via touchpanel								●	●	●	●	●	●
Data input via jog dial and buttons					●	●	●						
Entering program names (i.e. "Sintering")					●	●	●						●
Keypad lock					●	●	●	●					
User administration					●	●	●		○	○	○	○	●
Skip-button for segment jump					●	●	●		●	●	●	●	●
Program entry in steps of 1 °C or 1 min.	●		●	●	●	●	●	●	●	●	●	●	●
Start time configurable (e.g. to use night power rates)					●	●	●	●	●	●	●	●	●
Switch-over °C/°F	○		○	○	●	●	●	○	●	● ³	● ³	● ³	● ³
kWh meter					●	●	●						
Operating hour counter					●	●	●		●	●	●	●	●
Set point output				○	●	●	●	○		○	○	○	○
NTLog Comfort for HiProSystems: recording of process data on an external storage medium					●	●	●		○	○	○	○	
NTLog Basic for Nabertherm controller: recording of process data with USB-flash drive					○	○	○						
Interface for VCD software					●	●	●		●	●	●	●	●
Malfunction memory					●	●	●		●	●	●	●	●
Number of selectable languages					17	17	17						

¹ Not for melt bath control

² Control of additional separate slave regulators possible

³ Depending on the design

● Standard
○ Option

Mains Voltages for Nabertherm Furnaces

1-phase: all furnaces are available for mains voltages from 110 V - 240 V at 50 or 60 Hz.

3-phase: all furnaces are available for mains voltages from 200 V - 240 V or 380 V - 480 V, at 50 or 60 Hz.

The connecting rates in the catalog refer to the standard furnace with 400 V (3/N/PE) respectively 230 V (1/N/PE).