

Damocles 2404i – Manual



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1) Connecting the cables

- Turn the unit upside down and write down its MAC address that is printed on the label.
- Set the switches: <u>DIP1=Off</u>, <u>DIP2=Off</u>, remaining DIP switches do not matter.
- Connect the unit to the Ethernet (with a patch cable to a switch, cross-over cable to a PC), RJ-45 port.
- Plug the power adapter into a mains outlet and connect it to the Damocles power connector.
- The green **POWER** LED lights up.
- If the Ethernet connection works properly, the **LINK** LED lights up after a short while, and then flashes whenever data are transferred (activity indication).

UDP Setup 2.2.0 for HW group products (www.hw-group.com

2) Configuring the IP address – UDP Config

UDP Config utility – root directory of the supplied CD (Windows and Linux versions). Available for download at <u>www.HW-</u> <u>group.com</u> Software > UDP Config.

- Click the icon to launch UDP Config. The program automatically looks for connected devices.
- To search for devices, click the **Find Devices** icon.

HWgro www.HW-group.	up 2.2.1 com Setup util	www.hw-group	p.com IP addre p.com Netmask evices Gateway	ss: 192.168 c 255.255 v 192.168	1.214 .255.0 1.253 A Eind Dev	vices
evice list						
/AC	Name	IP	Device type	Port	Parameters	
0:04:59:01:E0:3C		80.250.21.88	IP Watchdog lite	99	TCP setup=Y	
10:0A:59:03:0D:0A		80.250.21.85	Poseidon model 3265	80	TCP setup=Y	
0:0A:59:00:AA:E2		192.168.1.61	Unspecified device	23	TCP setup=Y, TEA=N, NVT=Y	
0:04:59:00:AA:E3		192.168.1.62	Unspecified device	23	TCP setup=Y, TEA=N, NVT=Y	
0:0A:59:00:AC:48		192.168.1.65	Unspecified device	23	TCP setup=Y, TEA=N, NVT=Y	
0:0A:59:00:AC:49		192.168.1.64	Unspecified device	23	TCP setup=Y, TEA=N, NVT=Y	
0:0A:59:00:A8:FB		192.168.1.2	Unspecified device	23	TCP setup=Y, TEA=N, NVT=Y	
0:0A:59:03:0E:AF		80.250.21.87	Damocles model MINI	80	TCP setup=N	
0:0A:59:03:0C:2C		80.250.21.84	Poseidon model 1250	80	TCP setup=Y	
10:0A:59:03:10:04	Jan test 485	192.168.1.148	Poseidon model 1250	80	TCP setup=Y	
10:0A:59:03:0C:4B		80.250.21.86	Damocles model 2404	80	TCP setup=Y	
	1					

Your PC network settings

The program searches for devices in your local network. Individual Poseidon units are identified by their MAC addresses (printed on the label at the bottom side of the unit). Double-click a MAC address to open a basic configuration dialog.

Configure network parameters

- IP address / HTTP port (80 by default)
- Network mask
- Gateway IP address for your network
- Device name (optional)

Click the **Apply Changes** button to save the settings.

Notes:

- To reset the device to factory defaults, toggle DIP1 several times within 5 seconds after power-up.
- No configuration changes can be stored while DIP2=On. To change the IP address, set DIP2=Off.

Name:	IP address:	Port:
	80.250.21.85	: 80
	I MAC:	
😝 Open in WEB Browser	00:0A:59:03:0D:0A	
Mask:	FW version:	
255.255.255.240	3.0.2	
Gateway:	Device type:	
80.250.21.81	Poseidon model 3265	
— 🖵 Enable IP access filter ———	DHCP:	
IP filter value:	Not supported	
0.0.0.0	🔲 Enable NVT	
IP filter mask:	🔽 Enable TCP setup	<u>O</u> pen
0.0.0.0	🗖 Enable DHCP	
Default values	Enable TEA authoris	sation
Load defaults		
	Check if new IP add	fress is empl
🔀 Cancel		oly changes



3) Configuring the IP address – UDP Config

The **UDP Config** utility is located in the root folder of the CD, or it is available for download at <u>www.HW-group.com</u>. Run **UDP Config**. The program automatically searches for connected devices.

UDP Config 2.3.0 for HW g	group products	(www.hw-group	p.com)					×
HWgroup www.HW-group.com	Version: 2.3.0 Config utility fo	HW www.hw-group r the HW group de	group .com	Your PC networ IP address: Netmask: Gateway:	k settings – 192.168.5. 255.255.25 192.168.5.	2 55.0 1	*	? About Find Devices
Device list:								
MAC Nam	e	IP	Device type	•	Port	Parameters		
00:0A:59:03:0E:A7 Pose	eidon	<u>192.168.5.114</u>	Poseidon m	odel 1250	80	TCP setup=	⊧Y	
Double cl	lick							

The program looks for devices on your local network. To identify a particular Damocles unit, look at the MAC address on the label at the bottom of the unit.

Double-click a MAC address to open a basic configuration dialog.

Name: IP address: Port: Poseidon 192.168.5.114 : 80 Image: I
MAC: @ Open in WEB Browser 00:0A:59:03:0E:A7 Mask: FW version: 255:255:255:0 1.9.6 Gateway: Device type: 192:168:5:1 Poseidon model 1250 IP filter value: DHCP: Not supported Enable IV T
255.255.25.0 1.9.6 Gateway: Device type: 192.168.5.1 Poseidon model 1250 IP Enable IP access filter DHCP: IP filter value: Not supported IP content Enable NVT
Enable IP access filter DHCP: Not supported Enable NVT
IP filter mask: IP Enable TCP setup Open 0.0.00 Im Enable DHCP Default values Im Enable TEA authorisation

- Set the IP address
- HTTP Port
- Network mask
- Gateway IP address
- Device name (optional)

Caution: If you don't know these details or are not sure, please contact your network administrator.

□Click the **Apply Changes** button to save your changes.

Note: Alternatively, you may use the following utilities to configure the IP address:

- UDP Config for Linux
- Hercules utility (/Hercules.exe) (UDP Setup or serial port terminal)

• RS-232 serial port (any terminal program, 9600 8N1, DIP1=ON, restart)

4) WWW interface of the device

- To open the WWW interface of the device:
 - $_{\circ}~$ Enter the IP address into a web browser
 - Click the IP address in UDP Config
 - Click the underlined IP address in UDP SETUP
- The WWW page displays current status of inputs and outputs.
- Click the "Graphic Flash SETUP" link to open the graphical configuration interface (Flash Setup).





5) Flash SETUP

To open the FLASH interface, FLASH support needs to be installed on your PC. If the computer is connected to the Internet, the needed plug-in is downloaded automatically.

D	AMOCLES	NTP ntp1.sth.netr IP Address 192.1 Contact For mor Temperature Tem	nod.se NO AN 68.1.100 e information tr mperature 1	Gate	01.01.1970 way 192.168.1.2 .HW-group.com 29.1	02: 53 Mask	03:27 255.255.255.0
I	nputs _{Name}	Counters	Value	(Output Name	S On (Close)	Off (Open)
[1	Input 1	000000000	0	01	Output 1	Open	• Close
2	Input 2	000000000	0	02	Output 2	Open	• Close
3	Input 3	000000000	0	03	Output 3	Open 🔿	• Close
[4	Input 4	0000000000	0	04	Output 4	Open	• Close
15	Input 5	0000000000	0				
6	Input 6	000000000	0				
[7	Input 7	0000000000	0				
8	Input 8	000000000	0				
9	Input 9	000000000	0				
[10	Input 10	000000000	0				
11	Input 11	000000000	0				
[12	Input 12	000000000	0				
[13	Input 13	000000000	0				
14	Input 14	000000000	0				
				Ani	w Changes		

Flash Setup allows you to:

- Control outputs
- Assign names to inputs and outputs and their states
- Watch current sensor readings (refreshed automatically at predefined intervals)
- Set SNMP parameters (Community names & rights), define target IPs for SNMP traps that are sent upon alarm
- Set device name, password, and secure IP address range
- and more...

6) Sending e-mail

Alarms and e-mail alerting

Damocles supports alerts to changes on one particular input – "**Single Alarm**", as well as alerts to a certain input combination – "**Group Alarm**".

	nputs	Current			-		
	Name	Value	ON (Close)	OFF (Open)	Single Alarm	Alarm Group 1	Alarm Group
1	Input#01	1	ON	OFF	None 💌	None 💌	None
2	Input#02	1	ON	OFF	OFF 🔻	None 🔻	None
3	Input 3	1	ON	OFF	ON 🔻	None 💌	None
4	Input 4	1	ON	OFF	None 🔻	None 💌	None
5	Input 5	1	ON	OFF	ON 🔻	None 🔻	None
6	Input 6	1	ON	OFF	ON 🔻	None 💌	None
7	Input 7	1	ON	OFF	ON 🔻	None 💌	None
8	Input 8	1	ON	OFF	ON 🔻	None 💌	None
9	Input 9	1	ON	OFF	ON 🔻	None 💌	None
10	Input 10	1	ON	OFF	ON 🔻	None 💌	None
11	Input 11	1	ON	OFF	ON 🔻	None 💌	None
12	Input 12	1	ON	OFF	ON 🔻	None 💌	None
13	Input 13	0	ON	OFF	ON 🔻	None 💌	None
14	Input 14	0	ON	OFF	ON 🔻	None 💌	None
15	Input 15	0	ON	OFF	ON 🔻	None 🔻	None
16	Input 16	0	ON	OFF	ON 🔻	None 🔻	None
17	Input 17	0	ON	OFF	ON 🔻	None 💌	None
18	Input 18	0	ON	OFF	ON 🔻	None 💌	None
19	Input 19	0	ON	OFF	ON 🔻	None 🔻	None

- Alarm state (On or Off) to be notified by sending an e-mail or SNMP Trap can be configured for each individual input. >> Inputs tab, green Single Alarm column.
- Each individual Alarm needs to be activated >> Inputs tab, Enable column.
- For each Alarm, a target destination needs to be set. Four SNMP Trap targets (named A, B, C, D) and two e-mail targets (named E, F) are available >> <u>Alarms</u> tab, <u>SNMP</u> or <u>E-mail</u> column.
- Destinations A through D (for SNMP) and E, F for e-mail need to be configured and enabled.

Testing e-mail

To send an e-mail directly from the device, check the following settings.

- Gateway IP address >> <u>Setup</u> tab, <u>Network Settings</u> pane, <u>Gateway</u> field.
- DNS server settings >> <u>Setup</u> tab, <u>Network Settings</u> pane, <u>DNS</u> fields.
- SMTP server settings >> <u>Email & SNMP</u> tab, <u>Email Settings</u> pane.
- Send a test e-mail to verify correct operation
 > <u>Email & SNMP</u> tab, <u>Email Settings</u> pane.

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About...

7) Controlling inputs / outputs with custom SW

• M2M protocols

Your custom software can use SNMP, XML or Modbus/TCP protocols to control outputs.

PosDamIO

For simple output control using the command line, the HWg PosDamIO utility can be used.

PosDamIO uploads a XML file with the requested output states to a specified IP address.

The utility is available for Windows and Linux, including source code, as a part of our **HWg-SDK** (available for download at our website).



✓ Logfile Enable

Output

Help

<user>:<pass>@192.168.1.99.80;151= C:\WIND0WS\Media\tada.way

VProgram Files\HW group\PD Tr

? Show This Computer Ethe

Start edge

Alarm start & st

• PD Trigger

To react to alarms and to control outputs, the PD Trigger application can be used. It reacts to incoming Alarm alerts by, for instance, activating a networked relay. (Available for download at our website.)

	5 15C.168.1." stanup Yes Uurput RIPR-80(;15)=1	
PD Trigger Events Condition: 192.168.1.* startup Time: 3.1.2008, 16:02:01 Device IP Address: 192.168.1.68 Source Name: 192.168.1.68 Value: start Adam Status: alarm Condition: #18 play sound, Source: Device: 192.168.1.99 = start, Status: alarm, Device: Condition: 192.168.1.* startup, Source: Condition: 192.168.1.* startup, Source: Source: 192.168.1.68 = start, Status: alarm, Device: Device: 192.168.1.68 = start, Status: alarm, Device: Condition: 192.168.1.* startup, Source: Source: 192.168.1.68 = start, Status: alarm, Device: Device: 192.168.1.68 = start, Status: alarm, Device: Source: 192.168.1.68 = start, Status: alarm, Device:	Output Action Wizard X Device List Device List Output Detailes Device List B 280.250.21.87:80 · Damocles model 1250 Name: Device List B 280.250.21.86:80 · Damocles model 1250 Name: Device List Dutput Detailes Name: Dir Dut 1 D: Dir Dut 1 D: Dir Dut 1 D: D: Dir Dut 1 D: D: Dir Dut 1 D: D: Dutput B Dutput B D: Dutput B Dutput B	Apply Changes
Show Logfie Show Configurator	Manual Configuration Output Action IP Address: Port: 80.250.21.84 : 80 Set to DFF C Set to DN C Set to DN when alarm active C Set to DFF when alarm active C Set to DFF when alarm active Search interfaces finished	

D Trigger 1.4.2 Config

SNMP Port 162

#17 set output

*#17

-#19

Rule Lis

Note: Unauthorized changes of output states can be prevented by requiring a password or configuring a range of allowed IP addresses, or completely denied by switching DIP 2 to ON. When DIP 2 is ON, output states cannot be changed.

CapTemp

Software for collecting and analyzing sensors readings in food processing and other industries.

CapTemp and MonTemp is a pair of utilities to monitor production processes. The programs can supervise all sensors by HW group (temperature and humidity sensors, contacts, etc) as well as sensors by other manufacturers.

CapTemp logs the readings into an internal database, displays several most recent ones, and processes conditions and alarms. Alerts to readings within an alarm range are sent by email, or by SMS via a GSM modem connected to the PC.

MonTemp subsequently processes data stored in the database, generates graphic reports, histograms, and ISO or HACCP quality assurance protocols.

- CapTemp supports Poseidon, Damocles and I/O Controller products
- Alarm alerts are sent by e-mail or SMS (GSM modem)
- o Well-designed graphical environment
- o Supports conditions and rules for simple control tasks
- o Evaluation version functions for 21 days without restrictions



Technical specifications

- Ethernet: RJ45 10BASE-T/10 Mbit/s
- 24 digital inputs: Shared "COM" terminal for every two inputs
- 4 digital outputs: Relay contact outputs, each output controls a NO and a NC contact
- Port 1: RS-232 (DB9M connector), device configuration, temperature sensor connection
- Configuration DIP switches
 - DIP1 = On activates Serial SETUP mode (9600 8N1)
 Restores factory defaults when 5x toggled within 5 seconds after power up
 - DIP2 = On prevents changes in the configuration
- Device features
 - Alarming when a reading threshold is exceeded
 - o Remote monitoring of input states and temperature sensor
 - **Pulse counter** for every input
 - Remote output control
 - Local output control with Alarm conditions (Group 1 and Group 2)
- Power supply: +12V / 250 mA
- Dimensions: 116 x 179 x 46 [mm]
- LED indicators: Power, LINK, STATUS, ALARM

60		
	CUT2 CUT2 CUT2 CUT2 CUT2 CUT2 CUT2 CUT2	group
	Damocles 2404i	SECURITY ■□■- SETUP
	N19 N110 N112 N113 N114 N115 N115 N116 N116 N116 N116 N116 N116	
1	Instant Instant	003 NC3 NC3 NC3 NC3 NC3 30

- COM Common ground for a pair of inputs
- IN1 .. IN24 Inputs I1 through I24, connected against a common ground (COM)
- +U +12 to 24 VDC supply
- **GND** Power supply ground, connected to the COM common grounds
- NO, NC, COM Electrically isolated relay outputs

Ethernet port	
+ Interface	RJ45 (10BASE-T) – 10 Mbps or 10/100 Mbps network compatible
+ Supported protocols	IP: ARP, TCP/IP (HTTP, Modbus over TCP), UDP/IP (SNMP)
+ SNMP compatibility	Ver:1.00 compatible, some parts of the ver 2.0 implemented
Serial port 1 DB9M - RS-232	
+ Connector	Cannon 9 male (DB9M)
+ Pinout	Standard IBM PC - DB9M (RxD,TxD,RTS,CTS, GND)
+ Usage	Serial setup, 9600 8N1
1 000g0	Temperature sensor (max 1 sensor)
+ Max. distance	Up to 2m
Digital Inputs	
+ Input type	24 Contact Input (Ready to Dry contact or Wet contact)
+ Isolation	Optoisolated (1kV)
+ Wet contact	Logic 0: 0-3V / Logic 1: 5-30V
+ Input current	Min current 4mA, max current 50 mA
+ Pulse counter	Each Digital input , min pulse width 100 ms
	Power violation memory for all input counters
+ Max. distance	Up to 30m
Digital Outputs	
+ Output type	4 Relay contacts (NC, NO every output)
+ Max. load	up to 4A/24V
+ State	Power up state (NO state memory)
LED Status Indicators	
	Green - power OK
+ LINK & ACTIVITY	Green - Ethernet connectivity
+ Alarm & RS-232 Setup	Rea - bilnking - Device is in the RS-232 Setup mode
DIP SWITCH configuration	ON DC 000 Ceture media avec Dert 4 (DC 000 media entry)
	ON = RS-232 Setup mode over Port 1 (RS-232 mode only)
+ DIP1 - RS232 Setup mode	UFF = Ruil III0000 Lead defaulte: Toggle 2 times during first 5 seconds after
	device power-up to load default settings
	ON - Security mode - remote configuration disabled
+ DIP2 - Security	OFF = Non-Security mode - remote configuration disabled
+ DIP3-8	Not used
	100 000
Physical parameters	
+ Voltage requirements	12-24 V/ 600 mA DC
+ Power connection	- coaxial power connector (barrel, inner 2.5 mm outer 16.3 mm)
	- connect power directly to the terminal board (pin 15.16 and 65. 66)
+ Dimensions / Weight	116 x 179 x 46 [mm] / 500 g
+ Temperature	-10°C to 60°C

Mechanical dimensions



DO – Outputs

Each output controls two independent relay contacts: one "**Normally Open**" contact (**NO**, open when the power is off and after startup), and one "**Normally Closed**" contact (**NC**, closed when the power is off and after startup).



Both contacts ale electrically isolated; hence, two separate devices (one connected to the NO terminals, the other to the NC terminals) can be connected to a single output.

Contact state (closed / open) is indicated by the corresponding LED.

The picture shows an example of connecting a 12V light bulb, powered from the same source as the unit and controlled by the Normally Open contact of output No. 4.



DI – Inputs

Digital inputs can be connected to external voltage, or to dry contacts (using the recommended wiring). The inputs are electrically isolated from the device supply voltage, unless the same supply is used to control them.

- Unconnected inputs read as "0 (Off)".
 - Disconnected sensor detection: None, disconnected sensor reads as "O (Off)".
- Activated inputs read as "1 (On)", maximum resistance is given by the switching current and driving voltage.
 - $_{\odot}$ For a 12V supply, the resistance must be less than 3kΩ.
 - $_{\odot}~$ For a 24V supply, the resistance must be less than 7k $\Omega.$
- Maximum wiring length: 50 m
- Supported sensors: Any contact without external voltage (dry contact)
- Polling period: 800 ms
- Range of sensor IDs: Inputs use IDs from 1 to 24
- Sensor names: An input can be named using up to 12 characters
 - State names: Input state (On and Off) can be named with up to 6 characters (e.g. "Fuel Tank 14" "Full" / "Empty")



Updating the firmware over the WEB

Upload the firmware in a **.hwg** file over http to http://x.x.x.x/upload/. Connection problems etc. must be avoided during file transfer. If the update fails, upload the firmware over RS-232.

🚰 File Upload - Microsoft Internet Explorer	
<u>S</u> oubor Úpr <u>a</u> vy <u>Z</u> obrazit <u>O</u> blíbené <u>N</u> ástroje Nápo <u>v</u> ěda	*1
← Zpět → → → 🙆 😰 🖓 🔞 🥘 Hledat 🛛 👋 😡 Google →	»
Adresa 🙆 http://192.168.6.19/upload 🔽 🔗 Přejít	Odkazy »
	A
Upload Firmware	
Procházet Upload	
	1
	-
🕙 Hotovo 👘 👘 🕐 Internet	

Firmware in the .HWg format is available at our website, or on the supplied CD.

TIP

• For a complete description of the Flash Setup user interface and for further details, see the detailed manual for the Damocles line of products.