Honeywell

Excel 10

W7754K,P,Q,R,S,T,V FAN COIL UNIT CONTROLLERS

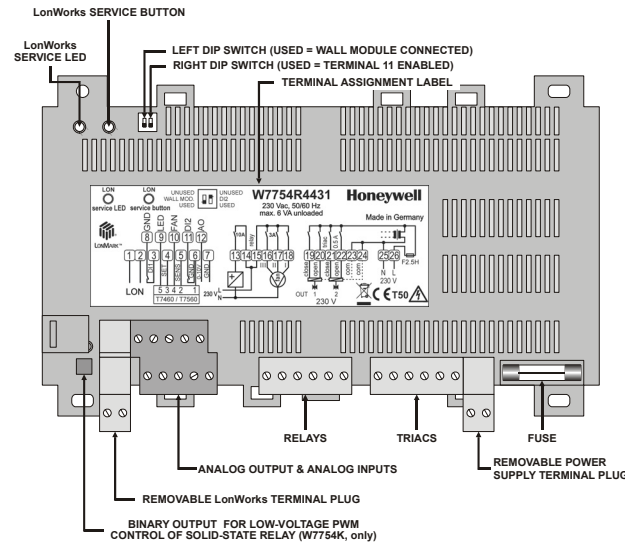### HONEYWELL EXCEL 5000 OPEN SYSTEM

GENERAL INFORMATION

Fig. 1. Excel 10 W7754 FCU Controller (w/o opt. cover)

BEFORE INSTALLATION

IMPORTANT

It is recommended that the unit be kept at room temperature for at least 24 hours before applying power; this is to allow the evaporation of any condensation resulting from low shipping / storage temperatures.

US requirement, only: This device must be installed in a UL-listed enclosure offering adequate space to maintain the segregation of line voltage field wiring and Class 2 field wiring.

⚠ CAUTION

To avoid electrical shock or equipment damage, you must switch OFF the power supply before attaching / removing connections to/from any terminals.

OS no.	power supply (removable plug)	triac voltage	binary input, for reading input from, e.g., window contact, occupancy sensor, etc.	binary input, for reading input from window contact	n.-o. relays, for 3-speed fan control			n.-o. relay, for reheat coil control	triac outputs, for opening / closing valve				output, for low-voltage PWM control of solid-state relay	analog output, for variable-speed fan control	binary input, for connection to wall module LED	analog inputs, for connection to wall module		
	25, 26	19-22	DI1	DI2	Fan I	Fan II	Fan III	Reheat	OUT1 close	OUT1 open	OUT2 close	OUT2 open	solid state	AO1	LED	FanSwitch	Sensor	Setpoint
W7754K1001	230 VAC	230 VAC	X	X	X	X	X	--	--	--	--	X	X	--	X	X	X	X
W7754P1000	230 VAC	230 VAC	X	X	X	X	X	X	X	X	X	X	--	--	X	X	X	X
W7754Q1008	24 VAC	24 VAC	X	X	X	X	X	X	X	X	X	X	--	--	X	X	X	X
W7754R4431	230 VAC	230 VAC	X	X	X	X	X	X	X	X	X	X	--	X	X	X	X	X
W7754S2230	230 VAC	230 VAC	X	X	X	X	X	--	--	X	--	X	--	--	X	X	X	X
W7754T4431	230 VAC	24 VAC	X	X	X	X	X	X	X	X	X	X	--	X	X	X	X	X
W7754V1230	230 VAC	230 VAC	X	X	--	--	--	X	--	X	--	X	--	X	X	X	X	X

Table 1. Overview of models

LONMARK 3.0

EN1B-0304GE51 R1114L

MOUNTING

All models have the same dimensions (W x L x H = 110 x 180 x 60 mm) (see Fig. 2) conforming to IP20. With optional terminal protection cover, width is 130 mm.
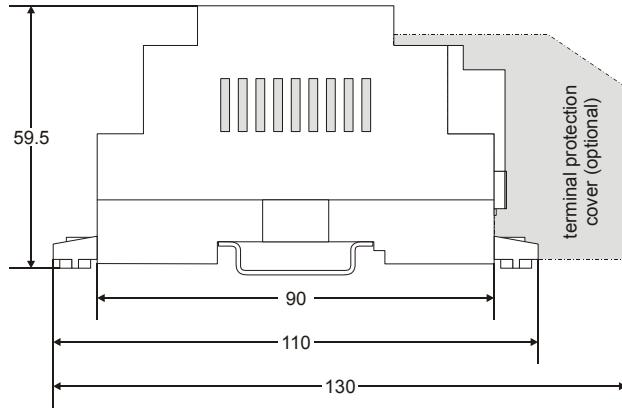

Fig. 2. Excel 10 W7754 dimensions (in mm)

The unit is suitable for mounting on a standard rail (DIN EN 50022-35 x 7,5), on walls, as well as for installation in wiring cabinets or fuse boxes.
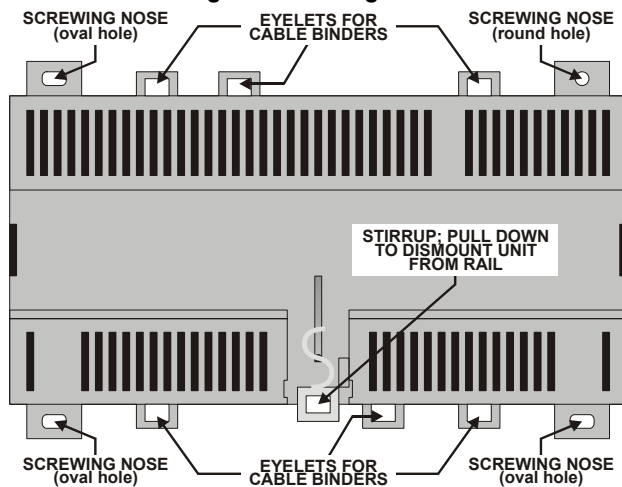
DIN Rail Mounting/Dismounting

Fig. 3. Housing base (view from below)

The unit can be mounted onto the DIN rail simply by snapping it into place. It is dismounted by gently pulling the stirrup located in the base of the housing (see Fig. 3). When mounted on a DIN rail, the unit must be secured in place with a stopper to prevent sliding.

Wall Mounting/Dismounting

The unit can be mounted on walls in any desired orientation. The unit is mounted by inserting 3.5-mm dowel screws through the corresponding screwing noses.
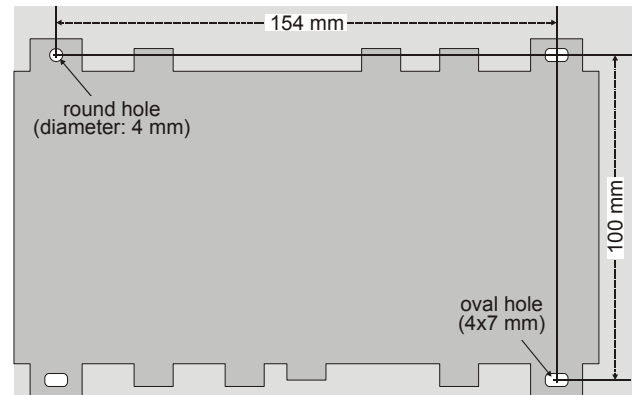

Fig. 4. Drilling template (view from above)

After mounting the unit onto the wall, provide for cable access by snipping out the terminal protection cover's cut-out tabs and snap it (by hand) into place on the housing. To remove the cover, place a screwdriver in the leverage slot and pry it loose.

Terminal Assignment

The unit features two rows of terminal blocks located on one side for the connection of cables to the relays, inputs, and outputs as well as for connecting the removable power supply terminal plug and removable LONWORKS terminal plug.

NOTE: All high-voltage terminal blocks are orange-colored.

Depending on the given hardware model, the units have different power supplies and are equipped with different numbers of triac outputs, relay outputs, etc. See Table 2 on page 3.

Every unit is therefore equipped with a terminal assignment label on the top of the housing (see Fig. 1 on page 1). Unused terminals are indicated by dotted lines.

NOTE: According to VDE guidelines, it is not allowed to mix low-voltage and high-voltage signals on the relays.

See also Table 4 on page 6.

Table 2. W7754 Controller: Overview of terminals and functions (by model)

term. #	function	model						
		K[1]	P	Q	R	S	T	V
1+2	Removable plug; receiving/sending data on the LONWORKS network	X	X	X	X	X	X	X
3	BINARY INPUT (DI1), configurable (via the LNS plug-in) to read input from, e.g., a hardwired window contact, occupancy sensor, etc.; suitable for dry contacts, only; max. voltage at open contact = 5 Vdc	X	X	X	X	X	X	X
4	ANALOG INPUT (AI3), permanently configured to read input from a hardwired wall module's temperature setpoint adjustment knob; enabled / disabled using the **left** DIP switch (use only appropriate tool, e.g., ball-point pen)	X	X	X	X	X	X	X
5	ANALOG INPUT (AI2), permanently configured to read input from a hardwired wall module's room temperature sensor (use NTC20k sensor, only; accuracy [w/o sensor] = 0.5 °C at 25 °C); enabled / disabled using the **left** DIP switch (use only appropriate tool, e.g., ball-point pen)	X	X	X	X	X	X	X
6	GND serving terminals 4, 5, 9, 10, and 11 (I/Os for wall module)	X	X	X	X	X	X	X
7	GND serving terminal 12 (AO1)	--	--	--	X	--	X	X
8	GND serving terminal 3 (DI1)	X	X	X	X	X	X	X
9	BINARY OUTPUT (LED), permanently configured to write output to switch the LED of a hardwired wall module ON/OFF; enabled / disabled using the **left** DIP switch (use only appropriate tool, e.g., ball-point pen); max. voltage = 5 Vdc; max. current = 5 mA	X	X	X	X	X	X	X
10	ANALOG INPUT (AI1), permanently configured to read input on whether a hardwired wall module's 3-speed fan control knob has been set to AUTO, OFF, LOW, MEDIUM, or HIGH and whether its "occupancy override" button has been pressed; enabled / disabled using the **left** DIP switch (use only appropriate tool, e.g., ball-point pen)	X	X	X	X	X	X	X
11	BINARY INPUT (DI2), permanently configured to read input on condition (open/closed) of window contact; enabled / disabled using the **right** DIP switch (use only appropriate tool, e.g., ball-point pen); suitable for dry contacts, only; max. voltage at open contact = 5 Vdc	X	X	X	X	X	X	X
12	ANALOG OUTPUT (AO1), used (depending upon configuration via the LNS plug-in) to control a variable speed fan or to control a proportional valve[2] or to control a 6-way ball valve[6]	--	--	--	X	--	X	X
13+14	A normally-open relay (Rel4), permanently configured to write output to switch a hardwired electrical reheat coil ON/OFF; switching voltage = 24...230 Vac; switching current = 0.05...10 A	--	X	X	X	--	X	X
15	A common terminal for terminals 16, 17, and 18	X	X	X	X	X	X	--
16[3]	A normally-open relay (Rel3), permanently configured to write output to a hardwired three-speed fan, setting it to HIGH	X	X	X	X	X	X	--
17[3]	A normally-open relay (Rel2), permanently configured to write output to a hardwired three-speed fan, setting it to MEDIUM	X	X	X	X	X	X	--
18[3]	A normally-open relay (Rel1), permanently configured to write output to a hardwired three-speed fan, setting it to LOW	X	X	X	X	X	X	--
19[4]	Triac output (Triac1), permanently configured to write output to OUT1 & close hardwired valve	--[5]	X	X	X	--	X	--
20[4]	Triac output (Triac2), permanently configured to write output to OUT1 & open hardwired valve	--[5]	X	X	X	X	X	X
21[4]	Triac output (Triac3), permanently configured to write output to OUT2 & close hardwired valve	--	X	X	X	--	X	--
22[4]	Triac output (Triac4), permanently configured to write output to OUT2 & open hardwired valve	X	X	X	X	X	X	X
23[4]	A common terminal for terminals 19 and 20	X	X	X	X	X	X	X
24[4]	A common terminal for terminals 21 and 22	X	X	X	X	X	X	X
25+26	The "N" (25) and "L" (26) power supply terminals (removable plug); W7754Q: 24 Vac (±20%), 50/60 Hz; W7754K,P,R,S,T,V: 230 Vac (-15%/+10%), 50/60 Hz	230 Vac	230 Vac	24 Vac	230 Vac	230 Vac	230 Vac	230 Vac

[1] The W7754K features an extra socket (2-pin connector located to the left of the terminal blocks) containing an output suitable for attachment to a solid-state relay (use only Carlo Gavazzi RS1A23D25-P64; max. voltage = 12 Vdc; max. current = 12 mA at 10 Vdc) for low-voltage PWM control in high-current electrical reheat applications. To enable it, terminals 19 and 20 must be configured (via the LNS plug-in) for "Heat" -> "PWM".

[2] In order for AO1 (terminal 12) to be used to control a proportional valve, OUT1 (terminals 19 and 20) must be configured (via the LNS plug-in) for "PWM", and the fan must not be configured for "variable speed fan".

[3] If all three relays (terminals 16, 17, and 18) are switched OFF, the three-speed fan will likewise be switched OFF. Switching voltage = 24...230 Vac; switching current = 0.05...3 A (max. 3 A for all three relays together).

[4] Switching voltage = 230 Vac (W7754K,P,R,S,V) or 24 Vac (W7754Q,T), max. switching current = 0.5 A; max. peak (10 sec) current = 1 A

[5] In order for the output for low-voltage PWM control of a solid-state relay (W7754K, only) to be used, these terminals must be configured (via the LNS plug-in) for "Heat" -> "PWM".

[6] In order for AO1 (terminal 12) to be used to control a 6-way ball valve from Belimo, OUT1 must be configured for "Not USED," OUT2 (terminals 21 and 22) must be configured (via the LNS plug-in) for "Changeover Mode" type "Floating Mid," and the fan must not use the analog output (no fan or 1…3-speed fan).

Power Supply
General Information

⚠ CAUTION

To prevent a risk of injury due to electrical shock and/or damage to device due to short-circuiting, low-voltage and high-voltage lines must be kept physically separate from one another.

NOTE: All wiring must comply with applicable electrical codes and ordinances. Refer to job or manufacturers' drawings for details. Local wiring guidelines (e.g., IEC 364-6-61 or VDE 0100) may take precedence over recommendations provided in these installation instructions.

NOTE: To comply with CE requirements, devices having a voltage of 50...1000 Vac or 75...1500 Vdc but lacking a supply cord, plug, or other means for disconnecting from the power supply must have the means of disconnection incorporated in the fixed wiring. This means of disconnection must have a contact separation of at least 3 mm at all poles.

Use a min. of 18 AWG (1.0 mm^2) and a max. of 14 AWG (2.5 mm^2) for all power wiring.

Power is supplied via a removable terminal plug (attached to terminals 25, 26) allowing individual units to be disconnected from the power supply without disturbing the operation of other devices powered by the same source. See Fig. 5.
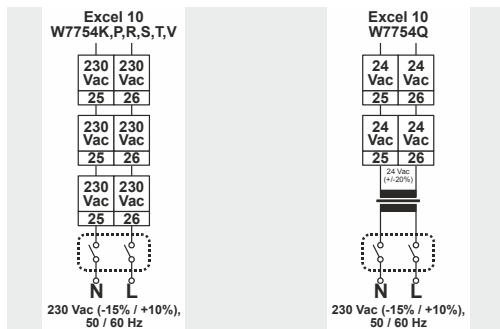

Fig. 5. Connection to power supply

NOTE: To prevent a risk of short-circuiting and damage to your unit, do not reverse the polarity of the power connection cables, and avoid ground loops (i.e. avoid connecting one field device to several controllers).

Electrical Data

W7754K,P,R,S,V: 230 Vac +10%, -15%, 50/60 Hz; max. 6 VA power consumption (unloaded)

W7754T: 230 Vac +10%, -15%, 50/60 Hz; max. 12 VA power consumption (unloaded)

W7754Q: 24 Vac ±20%, 50/60 Hz max. 6 VA power consumption (unloaded)

Wall Modules

The T7460 and T7560 Wall Modules can be used in conjunction with the W7754 to perform room temperature sensing, set-point adjustment, fan speed manual override, and occupancy override. When hardwired to the controller (via terminals 4, 5, 6, 9, and 10), the wall module's LED/LCD can be configured to provide information about

- any override of the controller by, e.g., manual operation of the wall module or the receipt by the controller of a network command (see section "Configuration of LED to Display Info on Overrides" below);

- the controller's effective occupancy mode (see sections "Configuration of LED to Display Info on Occupancy Mode" and "Configuration of LCD to Display Info on Occupancy Mode" below).

NOTE: The left DIP switch located on the top of the controller (see Fig. 1 on page 1) is used to indicate that a wall module can be hardwired to the controller. Setting the left DIP switch to USED means that a wall module can be hardwired; setting it to UNUSED means that no wall module can be hardwired.

NOTE: The intended use of the wall module's buttons must be configured using Honeywell's LNS plug-in.

Table 3. Supported wall module functions

	T7560 button	override	unit ON/OFF	fan speed
T7460C	--	●	--	--
T7460D	--	--	--	●
T7460E	--	●	●	--
T7460F	--	●	--	--
T7560A	left	--	--	●
	middle	--	●	--
	right	●	--	--
T7560B	left	--	--	●
	middle	--	●	--
	right	●	--	--

Example:

The T7560A has a left button configurable as a fan speed button, a middle button configurable as a unit ON/OFF button, and a right button for override. See T7460 Wall Modules Installation Instructions (95-7610) and T7560 Digital Wall Module Installation Instructions (EN1B-0146GE51) for details.

Configuration of the Wall Module's LED / LCD

When either a T7460 or a T7560 Wall Module has been hardwired to the W7754, the module's LED can be configured

(using Honeywell's LNS plug-in) to provide information about, e.g., overrides or effective occupancy modes. The LCD of a T7560 Wall Module can likewise be configured to display such information.

Configuration of LED to Display Info on Overrides

The wall module's LED can be configured to indicate if an override has been activated by either the wall module's override button being pushed or because the controller has received a network command. Specifically:

- If the wall module's LED is OFF, then no override (from the wall module or the LONWORKS network) is currently in effect.

- If the wall module's LED is ON continuously, the override button or a network command has placed the controller into the "occupied" or "override" mode (but if the override button is again pushed or if a cancellation network command is received or if the override time expires, the controller will return to its scheduled occupancy mode).

- If the wall module's LED flashes once per second, the override button or a network command has placed the controller into the "unoccupied" mode (however, if the override button is again pushed or if a cancellation network command is received, the controller will return to its scheduled occupancy mode).

- If the wall module's LED flashes twice per second, a network command has placed the controller into either the "standby" or the "occupied" mode.

- If the wall module's LED flashes four times per second, the controller is responding to a network management "wink" command.

Configuration of LED to Display Info on Occupancy Mode

The wall module's LED can also be configured to indicate the effective occupancy mode of the W7754. Specifically:

- If the wall module's LED is OFF, the controller is in the "unoccupied" mode.

- If the wall module's LED is ON, the controller is in the "occupied" mode.

- If the wall module's LED flashes once per second, the controller is in the "standby" mode.

- If the wall module's LED flashes four times per second, the controller is responding to a network management "wink" command.

Configuration of LCD to Display Info on Occupancy Mode

The T7560 Wall Module's LCD can be configured to display various symbols to indicate the effective occupancy mode of the W7754. Specifically:

- If ☀ is displayed continuously, the controller is in the "occupied" or "override" mode; if it flashes, the given mode has been overridden.

- If ☽ is displayed continuously, the controller is in the "standby" mode; if it flashes, the "standby" mode has been overridden.

- If ☾ is displayed continuously, the controller is in the "unoccupied" mode; if it flashes, the "unoccupied" mode has been overridden.

NOTE: If all three of these symbols are flashing simultaneously, the controller is responding to a network management "wink" command.

- OFF means that the controller is OFF.

- OFF and ☽ mean that the controller is OFF, but that "frost protection" has been enabled.

LonWorks Communications
General Information

The unit is equipped with a free-topology transceiver for communication on LONWORKS® networks. The LONWORKS network is insensitive to polarity, eliminating the possibility of installation errors due to miswiring.

Different network configurations (daisy-chain, loop, and star configurations, or any combination thereof) are possible (see also Excel 50/500 LONWORKS Mechanisms Interface Description, EN0B-0270GE51).

Connecting to the LONWORKS Network
IMPORTANT

Do not bundle wires carrying field device signals or LONWORKS communications together with high-voltage power supply or relay cables. Specifically, maintain a min. separation of 3 inches (76 mm) between such cables. Local wiring codes may take precedence over this recommendation.

IMPORTANT

Try to avoid installing in areas of high electro-magnetic noise (EMI).

The unit must be wired to the LONWORKS network using level IV 22 AWG (Belden part number 9D220150) or plenum-rated level IV 22 AWG (Belden part number 9H2201504) non-shielded, twisted-pair, solid-conductor wire. When possible, use Honeywell AK3781, AK3782, AK3791, or AK3792 cable (US part numbers). See Excel 50/5000 LONWORKS Mechanisms, EN0B-0270GE51, for details, including max. lengths. Use wire with a min. size of 20 AWG (0.5 mm^2) and a max. size of 14 AWG (2.5 mm^2).
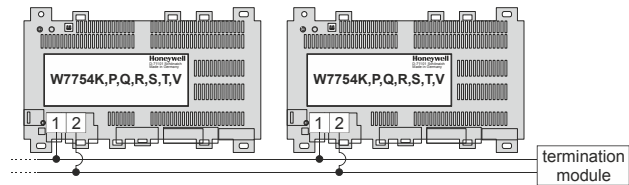

Fig. 6. Connection to LonWorks network and termination module (here: daisy-chain network configuration)

The unit is connected to the LONWORKS network via a removable terminal plug (attached to terminals 1 and 2) permitting individual units to be connected / disconnected without disturbing the operation of other devices.

Depending upon the chosen network configuration, one or two terminations (see section "LONWORKS Termination" on page 8) may be required.

Inputs/Outputs

Wiring the Inputs/Outputs

Use a min. size of 20 AWG (0.5 mm^2) and a max. of 14 AWG (2.5 mm^2) for all input/output connections. The max. length of all input/output cables is 400 m.

Two wires with a total thickness of 14 AWG can be twisted together and connected using a wire nut (include a pigtail with this wire group and attach the pigtail to the individual terminal block). Deviations from this rule can result in improper electrical contact. Local wiring codes may take precedence over this recommendation.

Binary Inputs

The unit's binary inputs are suitable for connection with dry contacts, only.

Relay Outputs

The relay outputs can be configured (via the LNS plug-in) for a variety of different functions. Once the relay outputs have been configured, the corresponding devices can then be connected to them directly.

Hardware Limits

- Min. current of 50 mA required to ensure reliable contact.

- The normally-open contacts are designed for a max. continuous current of 3 A (for relays 1, 2, and 3 together) and 10 A (relay 4), respectively.

NOTE: If inductive components are to be connected to the relays and if these relays switch more often than once every two minutes, these components must be prevented from causing harmful interference to radio or television reception (conformance with EN 45014).

Triac Outputs

The triac outputs can be configured (via the LNS plug-in) for a variety of different functions, e.g., for connection to either a floating drive or to a thermal actuator (see Table 4 to Table 6). Once the triac outputs have been configured, the corresponding devices can then be connected to them directly.

NOTE: VC6983 generates high-voltage pulses in the end position and therefore cannot be used in conjunction with the W7754.

Hardware Limits for W7754K,P,R,S,T,V (230 Vac Power Supply)
- Low signal: 0 V; high signal: 230 Vac
- Max. allowable continuous current for each individual triac output: 500 mA
- Max. allowable peak current (for 10 seconds) for each individual triac output: 1 A
- Max. allowable continuous current for all of the triac outputs together: 1 A.
- cos φ > 0.8

Hardware Limits for W7754Q1008 (24 Vac Power Supply)

- Low signal: 0 V; high signal: 24 Vac

- Max. allowable continuous current for each individual triac output: 500 mA

- Max. allowable peak current (for 10 seconds) for each individual triac output: 1 A

- Max. allowable continuous current for all of the triac outputs together: 1 A.

- cos φ > 0.8

Table 4. W7754K Output assignments

output type	stage	solid state plug	OUT2 terminal 22
1-stage	0	--	OFF
	1	--	ON
PWM	--	enabled for heating	PWM
thermal	--	enabled for heating	ON/OFF

Table 5. W7754P,Q,R,V Output assignments

output type	stage	OUT1		OUT2		AO (W7754R,T,V only)
		19	20	21	22	12
floating	--	close	open	close	open	--
1-stage	0	--	OFF	--	OFF	--
	1	--	ON	--	ON	--
2-stage	0	OFF	OFF	OFF	OFF	--
	1	OFF	ON	OFF	ON	--
	2	ON	ON	ON	ON	--
3-stage	0	OFF	OFF	OFF	OFF	--
	1	OFF	ON	OFF	ON	--
	2	ON	OFF	ON	OFF	--
	3	ON	ON	ON	ON	--
PWM	--	--	PWM	--	PWM	If OUT1 is con-figured for "PWM" and fan is not configured for "variable-speed fan", AO runs in parallel to OUT1
thermal	--	--	ON/ OFF	--	ON/ OFF	--

Table 6. W7754S,V Output assignments

output type	stage	OUT1		OUT2	
		19	20	21	22
1-stage	0	--	OFF	--	OFF
	1	--	ON	--	ON
PWM	--	--	PWM	--	PWM
thermal	--	--	ON/OFF	--	ON/OFF

Analog Inputs

The unit is equipped with two analog inputs (for connection to a room sensor and to a wall module with temperature setpoint adjustment, respectively).

Table 7. Analog input usage

analog input	wall module
AI1	room sensor [1]
AI2	setpoint adjustment
1) If sensor measures a temperature outside range of 0...70 °C, this is interpreted as a sensor break / short circuit.	

Analog Output

The W7754R, W7754T, and W7754V feature an analog output which can be used to control

- a variable speed fan, or
- a proportional valve (provided that, via the LNS plug-in, OUT1 has been configured for "PWM" and the fan has not been configured for "variable speed fan"), or
- a 6-way valve (provided that, via the LNS plug-in, OUT1 has been configured for "Not USED," OUT2 has been configured for the "Changeover Mode" of type "Floating Mid," and the fan is not using the analog output (no fan or 1...3-speed fan)).

Table 8. Analog output usage

voltage / current	0…10 V, -1 / +5 mA
resolution	8 bit

NOTE: Connecting 24 Vac to the analog output will damage the hardware.

Table 9. Use of the analog output

| function	fan	output 1 mode	output 1 type	output 2 mode	output 2 type
var.-speed fan	var.-speed fan	don't care	don't care	don't care	don't care
0…10 V actuator with prop. characteristic	no fan or 1…3-speed fan	heat, cool or change-over	PWM	don't care	don't care
0…10 V actuator with "floating mid" characteristic	no fan or 1…3-speed fan	change-over mode	floating mid	not used	-
2…10 V actuator with 6-way valve characteristic	no fan or 1…3-speed fan	not used	-	change-over mode	floating mid
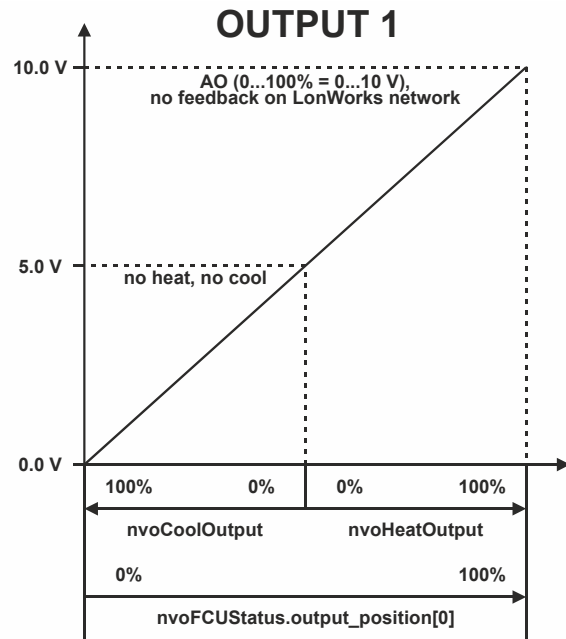
Fig. 7. Operational sequence with "floating mid characteristic" on the analog output (0….10 V)
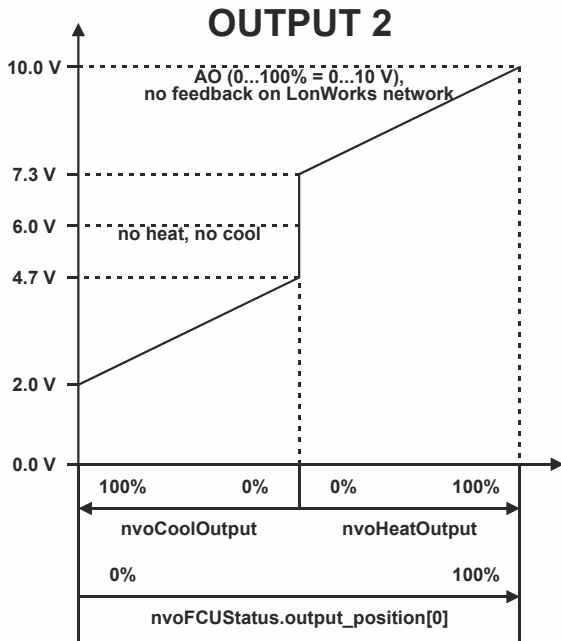
OUTPUT 2

Fig. 8. Operational sequence with Belimo 6-way valve connected to the analog output (2….10 V)

Replacing the Fuse

NOTE: Before replacing the fuse (see also Fig. 1 on page 1), disconnect the controller from the power source by detaching the removable terminal plug attached to terminals 25 and 26.

⚠ CAUTION

Depending upon actual wiring, even after you have switched OFF the power supply, the relays may still be under high voltage.

When replacing the controller's fuse, please replace with the same type listed on the terminal assignment label (e.g.: F2.5H250V).

Troubleshooting

All units feature a LONWORKS service LED and corresponding LONWORKS service button (see Fig. 1) for commissioning and troubleshooting.

When the service button is pressed, the service pin message is broadcast.

See Table 10 on page 9 for a description of the meaning of the various different possible behaviors of the LONWORKS service LED. For more information on standard service LED behavior, refer to Motorola LONWORKS Technology Device Data Manual, page AL-190.

Possible Problems and Recommended Actions

Check if the LONWORKS service LED's behavior is changed if you switch the power OFF/ON. Please contact Honeywell if this does not solve the problem.

Accessories
Terminal Protection Cover

Required for wall mounting. Set of eight covers.

• order no.: **XAL_COV_L**

LONWORKS Termination

One or two LONWORKS terminations are required, depending on the given LonWorks bus layout. See section "Connecting to the LONWORKS Network" on page 5.

The following LONWORKS termination module is available:

• XAL-Term2 LONWORKS Connection and Termination Module, which can be mounted on DIN rails and in fuse boxes
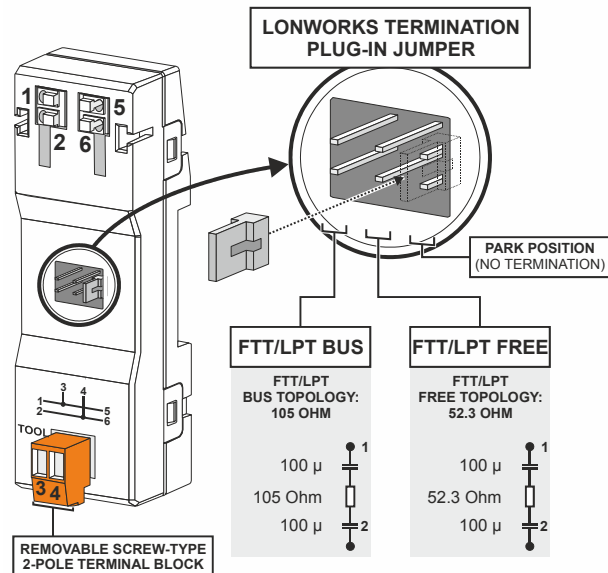

Fig. 9. LONWORKS connection and termination module

Table 10. LONWORKS Service LED Behaviors and Meanings

	LED blinking pattern	meaning
1	LED remains OFF after power-up.	Defective device hardware. Suspect power supply problems, clock problems, or defective Neuron Chip.
2	LED is lit continuously after first power-up.	Defective hardware.
3	LED flashes at power-up, goes OFF, then is lit continuously.	Controller lacks application.
4	LED flashes briefly periodically.	Controller probably experiencing continuous watchdog resets, or external memory or EEPROM is corrupt.
5	LED repeatedly blinks ON for 1 s and OFF for 1 s.	Controller is unconfigured but has an application.
6a	OFF ≈ 10 s. Afterwards, service LED turns ON and remains ON, indicating completion of blanking process.	Using EEBLANK on a Neuron 3150 Chip-based custom node.
6b	OFF ≈ 1 s. The service LED is then lit continuously.	First power-up with a new PROM on a Neuron 3150 Chip-based customized node. Application-less firmware state exported.
6c	OFF = 1...15 s, depending on application size and system clock. Service LED then repeatedly blinks ON for 1 s and OFF for 1 s.	
6d	OFF indefinitely (1...15 s to load internal EEPROM; remains OFF).	
7	LED remains OFF after a short ON duration.	Controller is configured and running normally.
8	LED flashes ON.	Controller has received WINK command from network. Other physical outputs are unaffected.

Approvals, Certifications, and Standards
Approvals and Certifications
- CE-approved
- Certified as per LonMark® Application Layer Guidelines V 3.0, thus interoperable with all other devices in open LONWORKS® networks (incl. 3rd-party devices)
- EUBAC-certified as follows:

W7754Q1008:	020706	W7754S2230:	211176
W7754R4431:	211182	W7754V1230:	211181

Temperature Control Accuracy (CA)
W7754P1000, W7754Q1008 with Motorized Actuator

FCU heating mode:	0.5 K
FCU cooling mode:	0.2 K

(min. CA values requested by EUBAC for fan coil unit applications: ≤ 1.4 K)

W7754R4431, W7754S2230 with Low-Cost Thermal Actuator

FCU heating mode:	0.8 K
FCU cooling mode:	0.9 K

(min. CA values requested by EUBAC for fan coil unit applications: ≤ 1.4 K)

Classification according to EN 60730-1

EN 60730 sub part:	EN 60730-2-9
Environmental conditions:	For use in home (residential, commercial, and light-industrial) environments
Construction:	independently mounted control
Action:	type 1.C
Rated impulse voltage:	2500 V at 230 V; 500 V at 24 V
Pollution degree:	Class 2
Protection against shock:	Class 0 (without terminal cover) Class II (with terminal cover)
Software class:	Class A

Classification according to EN 60529
(Degree of protection provided by enclosures)
IP20

Ambient Environmental Limits

Operating temperature:	0 … +50 °C at 5…90% r.H.
Storage temperature:	-40 … +70 °C at 5…90% r.H.

Honeywell