

CHANNELPLUS ELECTRONIC PROGRAMMERS

INSTALLATION INSTRUCTIONS

For models: H21.....2 Channel, 24 Hour
H27.....2 Channel, 7 Day **RS 186-5482**
H27Z.....2 Channel, 7 Day Zone Control
H121.....2 Circuit, 24 Hour, (single time base).

The following instructions can be used to install all the CHANNELPLUS models listed above.

Please read the instructions fully before proceeding and ensure the programmer is suitable for the intended application. A full technical specification is provided in section 8 of this leaflet.

NOTE: INSTALLATION AND CONNECTION SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE IEE WIRING REGULATIONS.

WARNING: ISOLATE MAINS SUPPLY BEFORE COMMENCING INSTALLATION.

1. FITTING THE WIRING PLATE

All ChannelPlus programmers use the British Gas standard wiring plate (see figure 1).

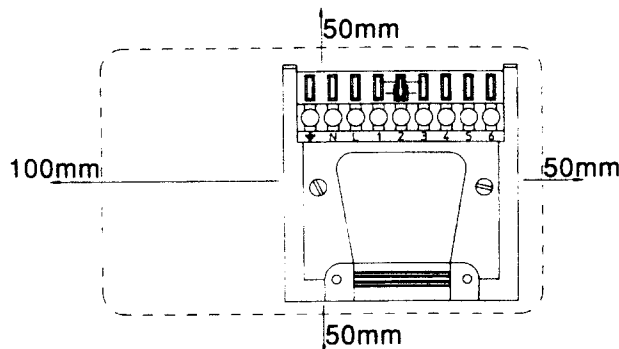


Figure 1: Wiring Plate.

Note: Once the wiring plate has been removed from the pack the latter should be re-sealed to protect the programmer from dust, debris etc.

The plate should be fitted with the wiring terminals lying along the top and the relevant clearances around it as shown in figure 1.

Direct wall mounting.

Offer the plate to the wall in the position where the programmer is to be mounted, remembering that the plate fits to the right hand end of the programmer.

Mark the fixing positions through the slots in the backplate (fixing centres 60.3 mm), drill and plug the wall, then secure the plate in place.

The slots in the plate will compensate for any misalignment of the fixings.

Wiring box mounting.

The plate may be fitted directly onto a single gang steel flush wiring box complying with BS4662, using two M3.5 screws.

ChannelPlus programmers are suitable for surface mounting only on a flat surface, they must not be mounted on a surface mounted wall box or on unearthed metal surfaces.

NOTE: These ChannelPlus models can be used to DIRECTLY REPLACE the Horstmann 425 Diadem, 425 Tiara, 525 Electronic and 527 Electronic programmers. In these instances it is usually possible to fit the unit directly to the existing wiring plate. (see section 4).

2. ELECTRICAL CONNECTIONS

All necessary electrical connections should now be made.

Flush wiring can enter from the rear through the aperture in the wiring plate. Surface wiring can only enter from beneath the programmer (see figure 2) and must be securely clamped.

Wiring plate showing methods of entry for surface and flush wiring.

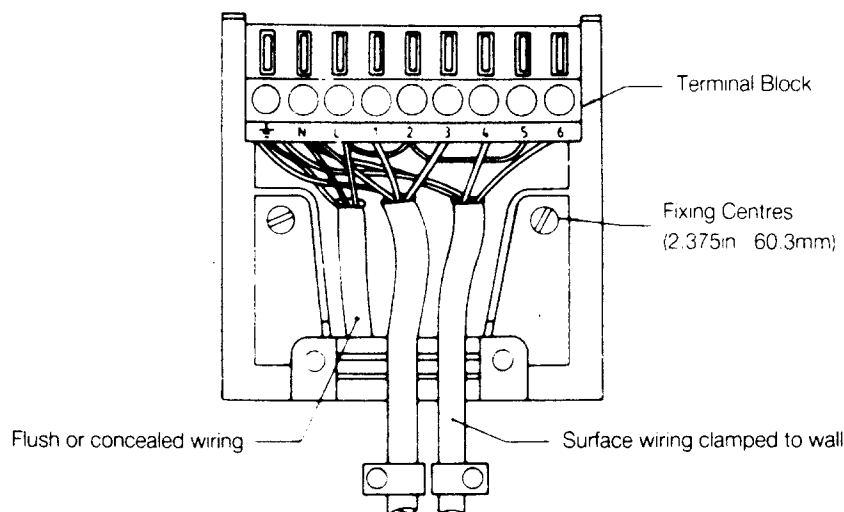


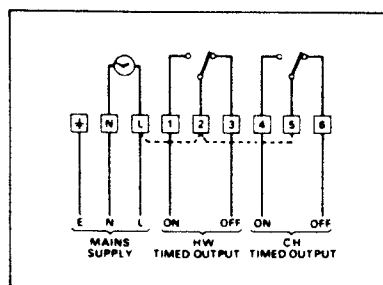
Figure 2

The mains supply terminals are intended to be connected to the supply by means of fixed wiring. The recommended cable sizes are 1/1.13 mm (1 mm²) or 1/1.38 mm (1.5 mm²).

Means for disconnection from the supply having a contact separation of at least 3 mm in both poles must be incorporated in the fixed wiring, e.g. fused Double Pole Switch.

ChannelPlus programmers are double insulated and do not require an earth connection but an earth terminal is provided on the wiring plate for terminating any cable earth conductors. Earth continuity must be maintained and all bare earth conductors must be sleeved.

Ensure that no conductors are left protruding outside the central space enclosed by the wiring plate.



INTERNAL WIRING DIAGRAM
OF H27, H21, H27Z and H121

Figure 3

NOTE: When used to control MAINS VOLTAGE SYSTEMS terminals L, 2 and 5 should be electrically linked by means of a suitable piece of sleeved conductor (see figure 3). When used to control EXTRA LOW VOLTAGE SYSTEMS these links MUST NOT be fitted.

On new installations the wiring diagrams in section 3 should prove helpful. When replacing an existing programmer the terminal conversion charts in section 4 should be referred to.

3. NEW INSTALLATIONS

The following wiring diagrams relate to the most typical heating systems and should be used when fitting the programmer as part of a new installation.

THEY ARE SCHEMATIC DIAGRAMS INTENDED FOR GUIDANCE ONLY

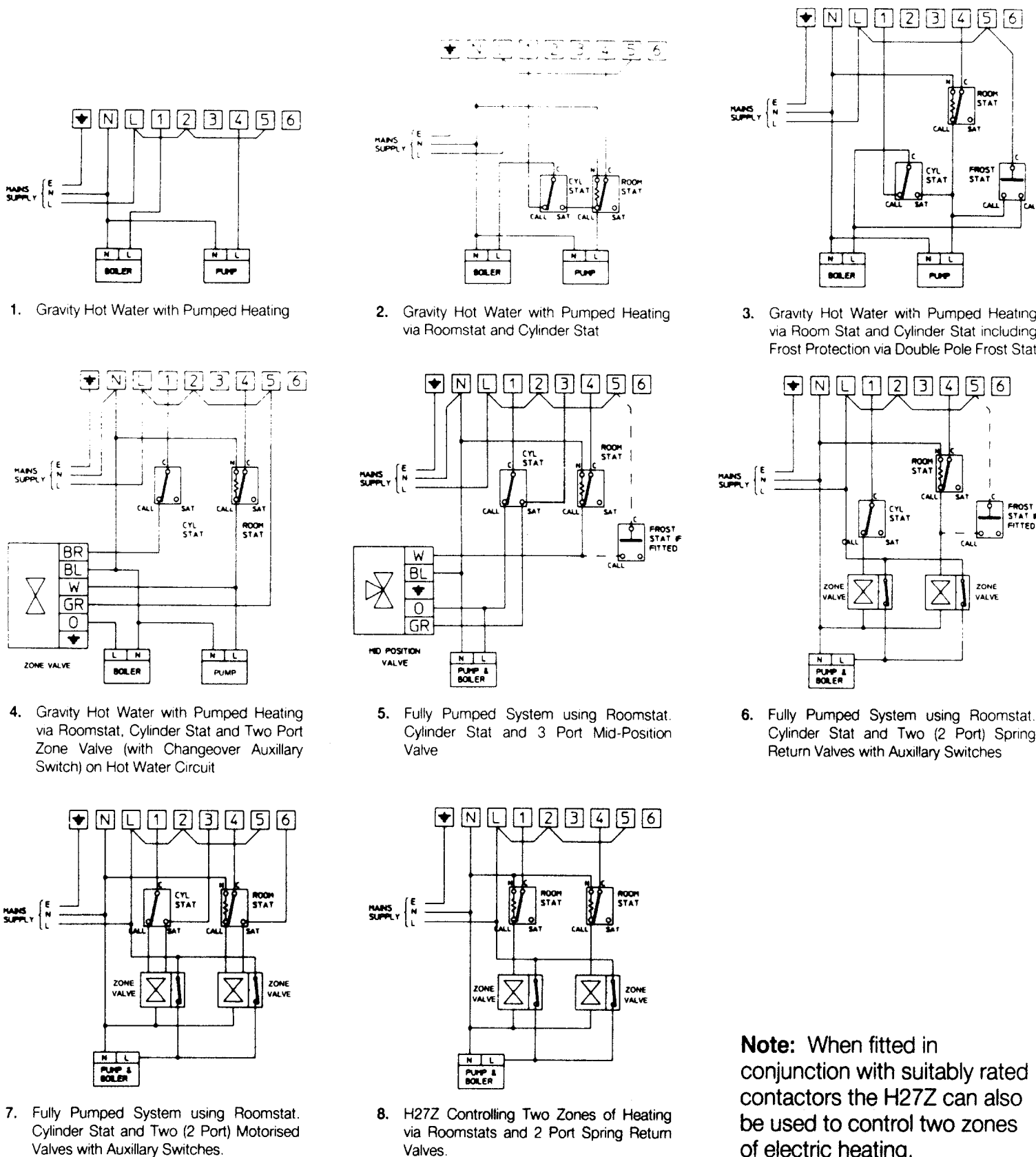
For reasons of space and clarity not every system has been included and the diagrams have been simplified, for instance the earth wiring has been omitted.

Please ensure that the installation complies with the current IEE regulations.

Other control components shown in the diagrams i.e. valves, room thermostats and cylinder thermostats are general representations only. However, the wiring details can be applied to the corresponding models of most manufacturers e.g. Horstmann, Honeywell, Danfoss Randall, ACL Drayton etc.

Cylinder and Room thermostat key:

C = Common CALL = Call for heat or break on rise SAT = Satisfied or make on rise N = Neutral



1. Gravity Hot Water with Pumped Heating

2. Gravity Hot Water with Pumped Heating via Roomstat and Cylinder Stat

3. Gravity Hot Water with Pumped Heating via Room Stat and Cylinder Stat including Frost Protection via Double Pole Frost Stat

4. Gravity Hot Water with Pumped Heating via Roomstat, Cylinder Stat and Two Port Zone Valve (with Changeover Auxillary Switch) on Hot Water Circuit

5. Fully Pumped System using Roomstat, Cylinder Stat and 3 Port Mid-Position Valve

6. Fully Pumped System using Roomstat, Cylinder Stat and Two (2 Port) Spring Return Valves with Auxillary Switches

7. Fully Pumped System using Roomstat, Cylinder Stat and Two (2 Port) Motorised Valves with Auxillary Switches.

8. H27Z Controlling Two Zones of Heating via Roomstats and 2 Port Spring Return Valves.

Note: When fitted in conjunction with suitably rated contactors the H27Z can also be used to control two zones of electric heating.

4. REPLACING AN EXISTING PROGRAMMER

For mains voltage systems the following Terminal Conversion Table can be used when replacing any of the programmers listed below.

TERMINAL FUNCTION:	MAINS			HW ON	COMM	HW OFF	CH ON	COMM	CH OFF	SPARE
	E	N	L							
CHANNEL PLUS H21, H27, H27Z, H121 (Link terminals L, 2 & 5)	E	N	L	1	2	3	4	5	6	None see note over.*
ACL LS241, LS522, LS722, LP241, LP522, LP722 LS112 ACL/TOWERCHRON	E E	N N	L L	3 3	- -	1 2	4 4	- -	2 -	None None
Grasslin 2000 MP FP	E E E	N 2 2	L 1 1	HW ON 6 6	C - -	HW OFF - 8	CH ON 10 10	C - -	CH OFF - 11	None 8,7&3 3
DRAYTON Tempus 3, 4 & 7	E	N	L	3	-	1	4	-	2	None
DANFOSS RANDALL 102, 102E, 102E5, 102E7 SET 2, SET 5, SET 3M FP15, FP75, CP15, CP75 MP15, MP75 3020P, 3060 3033 4033 701, 702 922, 972	E E E E 8 8 8 E E	5 N N N 1,7 1,7 7 N N	6 L L L 6 6 6 L L	1 1 3 3 4 4 4 3 3	3 2 - - - - 6 2	- 3 1 1 - 5 5 4 1	2 4 4 4 2 2 2 1 6	- 5 - - - - 5 5	- 6 2 2 - - 3 2 4	None None 5,6 5,6 3,5 None None None None
HONEYWELL ST699B (Fully Pumped) ST699B (Gravity) ST7100 ST6200, ST6300, ST6400	E E E -	N N N N	L L L L	6 8 HW ON 3	8 6 COM -	7 - HW OFF 1	3 3 CH ON 4	5 5 COM -	4 - CH OFF 2	None None - None
HORSTMANN Amethyst Coral Gem 423 Diamond 424 Diamond 425 Tiara, 425 Diadem, 525 & 527 Electronic Centaur TC1, TC7	E E E E E E E	2,3 2,3 2,3 N N N N	1 1 1 L L/1 L	5 8 4 2 2 2	- - 5 1 - -	4 - 6 - - -	7 4 7 4 4 4	- 7 8 3 3 -	6 - 9 - - -	None 5,6 None 5,6 5 None
	These models can be DIRECTLY replaced by ChannelPlus. Use existing wiring plate. NOTE: When replacing 425 model ensure there is 100mm clearance to left of wiring plate.									
LANDIS & GYR RWB2, RWB20, RWB40, RWB200, RWB252	-	N	L	3	-	1	4	-	2	None
PEGLER SUNVIC SP50, SP100	E	N	L	2	-	1	5	3	4	S,S
POTTERTON EP2000, EP3000 Mini Minder, Mini Minder E	E -	N N	L L	3 3	- -	1 1	4 4	- -	2 2	A,B,C,D None
SMITHS INDUSTRIES Centroller 60, 70, 90 Centroller 100 Centroller 1000	E E E	1 N N	2 L L	5 3 3	- - -	- - 1	4 2 4	- - -	- - 2	3,6 1,4 None
SMITHS METERS Switchmaster 320, 350 Switchmaster 400 Switchmaster 600 Switchmaster 800, 805 Switchmaster 900, 9000, 9001	E E E E E	N,2 N N N N	L L L L L	3 3 3 3 3	4 - - - -	- - - 4 4	1 1 1 1 1	- - - - -	- 4 - 2 2	None 2 2,4 None A,B,C
VENNER (AMF) CHC/W2 Venetrol 80 Venetrol 80M Venetrol 80P Venetrol 80/P/M	E E E E E	N,2,4 N,1,3,4 N,3 N,1,3 N,3	L L L L L	1 2 2 2 2	- - - - -	- - 1 - 1	A/S A/S A/S A/S A/S	- - - - -	- - 4 - 4	A/S,3 A/S,5 A/S,5 A/S,4,5 A/S,5

NOTE: A/S terminals on Venner models may be linked if there is no room stat fitted.

* See Note Over

* **NOTE:** The ChannelPlus models covered by this leaflet do not have any SPARE or LINKING terminals. If spare terminals have been used on the programmer being replaced then any connected wires should be removed and re-connected into a separate piece of terminal block. Wires from different spare terminals should not be joined together.

5. COMMISSIONING THE PROGRAMMER

Ensure all dust and debris has been cleared away from the work area before removing the control from its pack.

All ChannelPlus programmers are suitable for either GRAVITY HOT WATER or FULLY PUMPED systems.

On fully pumped and controlled systems it is possible to program independent time settings for hot water and heating.

On gravity or partially controlled systems the hot water and heating follow the same set of times and it is not usually possible to have heating without hot water.

Correct control of each type of system is ensured by means of a COMMISSIONING SWITCH on the back of the unit (see figure 4).

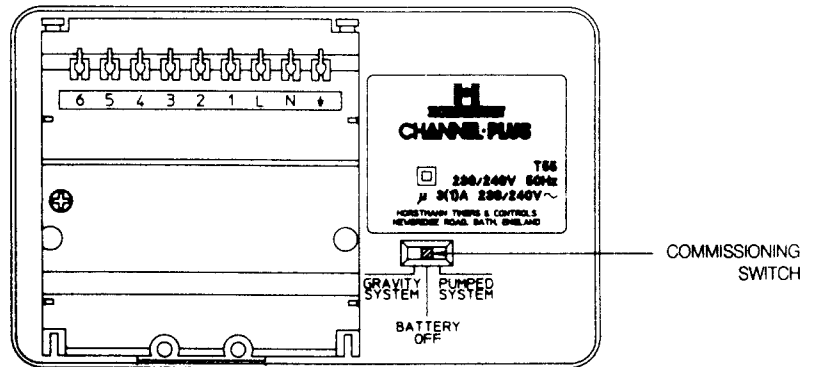


Figure 4

When the programmer is supplied the switch is in the OFF position. Using a suitably sized screwdriver or similar the switch should now be moved to either the Gravity or Pumped position, depending on the type of system being controlled.

Moving the switch from the OFF position also activates the programmer's BATTERY RESERVE. If the unit is installed with the commissioning switch in the OFF position, the word "bAt" will flash on the display when mains power is supplied (see figure 5).

The switch will then need to be moved into the correct position before proceeding further.



Figure 5

NOTE: When the programmer is running on battery reserve the clock display will remain blank.

6. FITTING THE PROGRAMMER

If surface wiring has been used, remove the knockout/insert from the bottom of the unit to accommodate it.

Loosen the two "captive" retaining screws on the top of the unit.

Now fit the programmer to the wiring plate by offering up the bottom of the unit to the bottom of the wiring plate, ensuring that the lugs on the programmer engage under the flanges of the plate (see figure 6).

Swing the top of the programmer into position ensuring that the connector blades on the back of the unit locate into the terminal slots in the wiring plate.

Tighten the two "captive" retaining screws to fix the unit securely, then switch on the mains supply.

The unit can now be programmed to suit the user's requirements (see users' instruction leaflet).

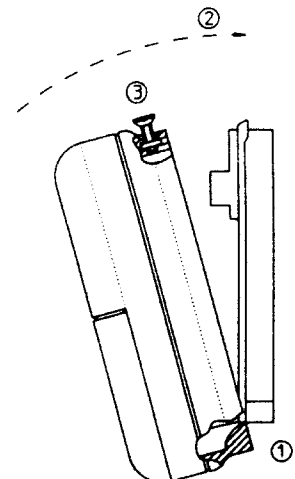


Figure 6

7. GENERAL.

Before handing over the installation to the user, always verify that the system responds correctly on all control programmes and that other electrically operated equipment and controls are correctly adjusted.

Explain how to operate the control to the user and hand over the operating instructions.

ChannelPlus units are NOT user serviceable but can easily be replaced without disturbing the wiring. Ensure power is switched off and follow the fitting procedure in reverse as described in section 6 of this leaflet.

8. SPECIFICATION.

MODELS: H21, H27, H27Z, and H121

Contact type: Microgap changeover (voltage free).

Contact rating: 3(1)Amps 230 to 240V AC

Power supply: 230 to 240V AC 50Hz

Operating temperature range: 0°C to 55°C

Double Insulated.

Dirt Protection: Normal situations.

Enclosure Protection: IP30

Purpose of Control: Electronic time switch

Independantly mounted control for surface mounting.

Operating Time Limitation: Continuous.

Type 1 Action.

Battery Reserve: 10 Months continuous operation (minimum)

Case material: Thermoplastic, flame retardant

Dimensions: 101 mm x 163 mm x 33 mm

Display: Liquid crystal with day of week (H27 & H27Z only), next switch time, and current programme indication.

Clock: 12 hour AM/PM

Displayed time adjustment: 1 Minute steps

Switched time adjustment: 10 minute steps

Programme Selection: Auto, On all day, On constant, Off, Holiday

Operating periods per day: H21-Three for HW, three for CH.

H27 & H27Z - Three for HW, three for CH.

Separate daily programme for each day of the week.

H121 - Three for HW and CH.

Override: Boost-(1 or 2 hour)

Extension to on period-(1 or 2 hour).

Instant advance

Wiring plate: To British Gas standard specification.