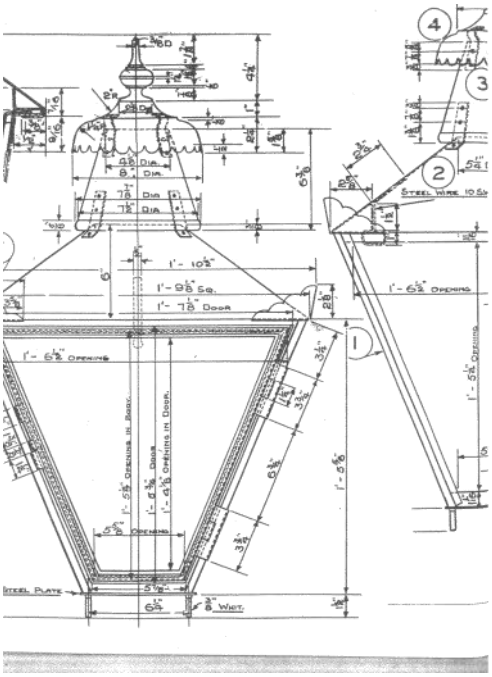
DCC concepts

4mm Scale Gas Lamps
4mm Scale Oil lamps

General instructions and installation guidance



Thank you for purchasing our finely detailed 4mm scale Station and Yard Lamps

When we embarked on the creation of these lamps we had no idea that their creation would in fact take more than a year of design, sampling and re-sampling, however we are now very pleased with the final result and we hope that you will be too.

The designs for both the oil and gas lamp are based on a series of original drawings created in Derby just before the end of the 19th century. These classic designs became the source of a huge proportion of the lamps found in many stations goods yards and engine facilities across the world, even spreading far beyond the railways to illuminate the streets of towns and villages across the country. With the coming of electricity of course some disappeared, however even more of them were simply converted to electricity, and can still be found doing the job they were designed for long ago.

Construction: How we created them and why we chose the materials.

One of the core objectives of our lamp design was to preserve the lovely fine neck of the lamp, something that every other model we could find failed to do. We also wanted to create something special, so plastic was rejected for the finer parts in order to refine the detail. So… to re-create the look we wanted, we did the following:

- Castings (post, post extensions, lamp tops) are all carefully checked against original drawings and have been made of a high grade polycarbonate which is impervious to most solvents. It also takes paint well.
- A very important factor in any model lamp is the “glass” of the lamps. We have also made this using a clear polycarbonate. We did this as it means that for those who would like to paint the lamps in their own colour, it will be easy to make a perfect job as any accidental excess on the lamp faces can be cleaned off with solvent - even strong solvents like MEK will not damage the “glass” surface!
- The post is reinforced with a fine metal capillary tube which hosts the lacquered copper wire of the lamp connections while reinforcing the overall structure and ensuring that it remains perfectly straight.
- The lamp frame, base and decorative mounting are all brass - we are particularly proud of the very fine folded etch that forms the frame for the “glass” of the lamps which is as fine as we have ever seen!
- The ladder rests are brass (they are also dead scale in length!)
- The lamp itself is an incandescent bulb: We have chosen this over an LED as it allows a softer pool of light to be created, mirroring the perhaps “overly romantic” memories of those we talked to. We really love the effect created by several of these on a platform, even though our research tells us that perhaps the gas light should have been a little “harsher” than the soft glow you all told us that you prefer!

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Connection and Electronics.

We are very conscious of the fact that a product like this should be reliable, and that the modellers who may buy it will not necessarily have the knowledge or be comfortable with choosing a power supply which is appropriate. We therefore resolved to make it easy to get the right result and as much as possible, Bullet-proof for everyone.

Each pack of lamps is therefore supplied with a special circuit board which will guarantee that no matter what form of power is used between 9 and 20 volts, the lamps will always receive exactly the right voltage and current to make them perform at their best and last for a very long time indeed!

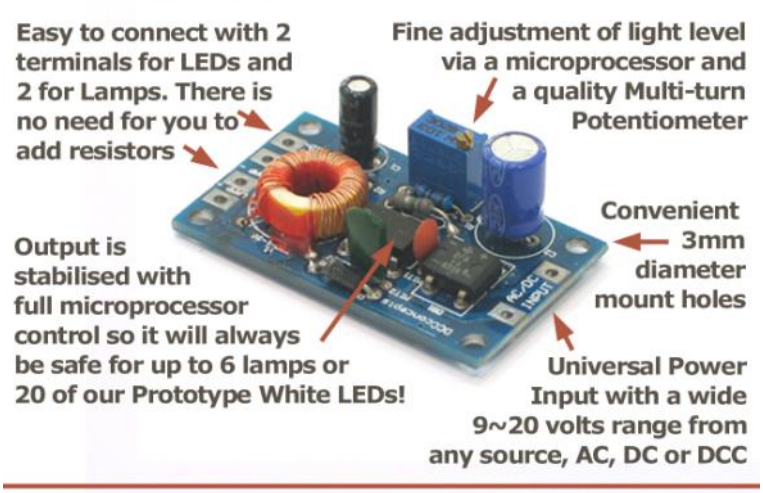
Note: *We were often asked if we would arrange a "flicker" for the gas lamps. Well, the answer was no, as while candles may flicker, Gas and Oil lamps like these were well maintained and simply didn't flicker at all. Whether gas or oil, they were newly trimmed and lit every night and gave a steady glow….*

About the Lamp Control PCB

The PCB itself is a high quality fibreglass PCB which can be secured wherever it is wanted either with a little double sided foam tape or via the 3x 3mm holes pre-drilled in each corner.

- The input is clearly marked and you can use AC, DC or DCC as long as it is between 9 and 20 volts
- The control circuit is surprisingly sophisticated, using a small processor to control the output of the bulbs in the lamps, or, if used for other than our lamps, it will also control LEDS perfectly.
- Adjustment is via a 20 turn unbreakable potentiometer. Being 20 turns from zero to full brightness, it is possible to make perfect adjustment, and as it has no "limit" stops, it is almost unbreakable, so can be used without the potential for damage that exists with a low cost standard potentiometer.
- Lamps should be connected in parallel. Each lamp board will in fact safely handle 6 of our lamps OR up to 24 white LEDs (Presuming minimum resistance for the LEDs). Therefore if you have purchased several packs of lamps, you can also have the ability to control building lights etc by connecting 6 lamps to one PCB and using the other for LEDs. ***Note:*** *The light control PCB is available separately—see our website please*
- Wiring connections are all very clearly marked, so it will be easy for even a novice.

This image clearly shows all details.



Connecting Your Lamps to the PCB

The very fine wire of the lamps is covered by a protective lacquer insulation.

Depending on your skill with a soldering Iron, it is possible to use the iron tip to "strip" a little of it to solder to - if you are less confident, you can either use a strong solvent to remove the last few mm of insulating lacquer or carefully scrape it off with a sharp scalpel.

We suggest that when you mount the lamps, you secure a small strip of PCB material close to the lamp wiring hole to act as a "strain relief". All that is needed is a small strip say 4mm x 20mm, with a gap cut in the copper to let you add 2 wires without creating a short circuit between them.

After securing the PCB strip with either glue or screw, solder the lamp wires to the PCB along with some light weight wire to run between the lamp and the control PCB.

This will ensure you cannot accidentally pull too hard on the delicate lamp wires and damage them. Lamps (or LEDs if using a PCB for other purposes) should all be wired to the PCB in Parallel.

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Preparation and Installation guide.

Choosing where to put them and how tall to make them:

OIL LAMPS: Initially used in station areas, these were replaced with gas lamps quite quickly during the early 20th centtury.

The slightly larger head of the oil lamps we chose to produce was created for use in yards, industrial areas and loco shed areas.

These were places that saw very little ongoing investment in most cases, so as neither gas reticulation nor electricity was provided, oil lamps remained in place for a very, very long time.

While most were converted to electricity after WW2, again funds were short for infrastructure improvements and so once converted, many remained in place until after nationalization.

Oil lamps will be at the correct height for ground level installation in a goods yard when used with the long post extensions provided.

Use them with no extension for full height freight platforms, or with the shorter of the two post extensions when used to provide illumination closer to buildings or in industrial areas.

GAS LAMPS: These are the classic station and city street lamp seen across the UK and almost everywhere else in the world that the UK companies who supplied the Colonies and Commonwealth railways operated.

While they were initially designed and created as gas fired lamps, many were simply re-born as electric lamps as time progressed, and lamps of this type adorned not only station platforms and related areas, but many a city or town street corner too! Today of course, their design is seen as a re minder of a classic age and so they are being restored and used once more… 100 years after most were made!

The gas lamp is the correct height for platform use without any extension base. It was also often used with an extension base at various heights around stairways or footbridges, and where utilized as a centerpiece for a village intersection or similar use, would have been slightly higher than for platform use, so the short extension would be appropriate.

We could find no fixed spacing info for these lamps on platforms. However, they were reasonably close on city platforms, wider spaced in country areas. The image above gives a clear example of their use on platforms.

Installing the Oil and Vas Lamps:

Before we start, lets check the pack contents…

You will have three lamps, three short extension bases, three long extension bases and one control PCB.

You will need the following tools… Most modellers will have all the tools needed - there are a few items that are important however, so they are listed here:

You will need a drill, a 1mm drill bit, a 2.75mm drill bit, a small rat tail file, a small strip of PCB material or tag strip, solder and a soldering Iron.

The 1mm Drill: This is the hole diameter needed when using the extension bases… however if you prefer to drill only a small hole in platforms etc, you can also remove the white polycarbonate mounting sleeve below the base of the post. To do this very carefully cut around the lamp base, then cut away the sleeve.

Note: Once this is done, utilising the post extensions will be difficult, so plan well.

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Preparation and Installation guide…. continued

The 2.75mm Drill: This is the drill size that will accommodate the white unpainted base of the lamps when used without any extension base.

Important: No matter which drill you use, be very careful to drill a perfectly vertical hole to ensure that the installed lamp is properly upright, with no lead in any direction. Spend time getting this right!

There is no need to glue the lamps in position, however if you want to do so, a tiny drop of PVA or similar glue smeared onto the metal capillary tube will be enough to hold firmly without making it impossible to remover.

Installation Step by Step:

- Plan where the lamp is to go, decide the height it will be installed at and preassemble.
- Use the appropriate drill to make a vertical hole where the lamp is to be placed.
- Carefully remove a little insulation off the end of the lacquered wires and then thread both wires carefully through the hole.
- Orient the lamp appropriately
- Fasten a small strip of PCB material under the baseboard and close to the lamp installation hole. Be sure to gap it so there are two separated copper pads.
- Solder one lamp wire to each pad.
- Current draw is low so you can choose any convenient light-ish wire to connect the lamps to the control PCB. Solder a length of this wire to each pad of the copperclad PCB strip.
- When all lamps are installed, run wires tidily to the control PCB and wire all lamps in Parallel to the solder pads marked “Lamps” on the PCB surface. You may connect up to SIX lamps to one PCB.
- Connect your power supply to the power input terminals of the lamp control PCB. You may use AC, DC or DCC for this. You can use any voltage power supply between 9 and 20 volts. (we used a simple wall plug pack of 12v DC for our own installations)
- Using a small screwdriver, adjust the potentiometer to give the light level you want. This fine adjustment potentiometer takes 20 full turns to span all levels between off and full brightness. It has no stops, so cannot be broken by over enthusiastic use! Please note that the outputs have been limited to ensure that no matter what power supply you use, the bulbs are never stressed, so they will last almost forever!
- All lamps are given a 100& check prior to leaving the factory, so if you have a problem getting one working, suspect a bad solder joint or power supply problem first!
- If you still have no luck, please contact your retailer or DCCconcepts for assistance. If you prefer to email us , our address is questions@dccconcepts.com.

Show us your results… please!

We are very proud of our lamps and as we are modellers too, we really like to see the things we create in use on the layouts of other modellers. We sincerely hope you enjoy them! If you have a digital camera and have time to take photographs of your lamps in use we would love to see them, so please… email or post them to us and at the same time, if you have suggestions for other items you’d like to see us add to the range, let us know!

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