



SYNECTIC
ELECTRONICS

SY27* Pulse Splitter Series



User Manual

DESCRIPTION

The SY27 series of pulse splitters accepts pulse signals from a wide range of meters; Gas, Electric, Water, or other pulse transmitting devices. The outputs from the meters can be Opto coupler , Reed switch , Open collector or TTL pulse. The Pulse splitter gives 2 isolated solid state relay out puts for each pulse in.

The SY27 series can be specified to have from 1 to four meters or pulse generating devices attached. It can be AC or DC powered and it can be Din rail mounting or in an IP65 sealed case.

The Standard Din rail mounting unit SY27*-XX

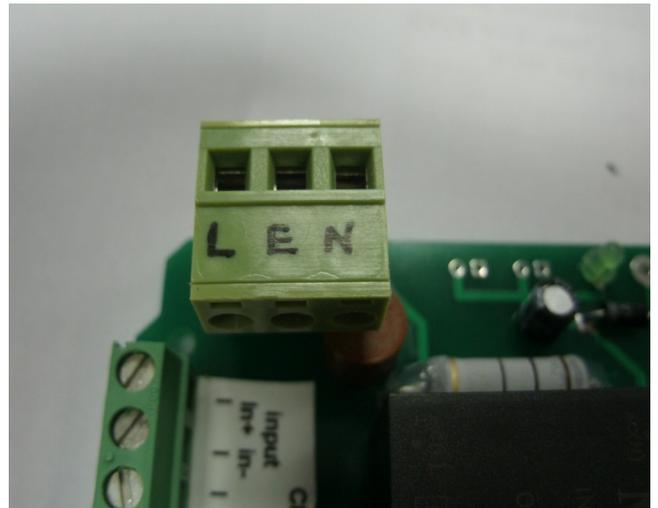
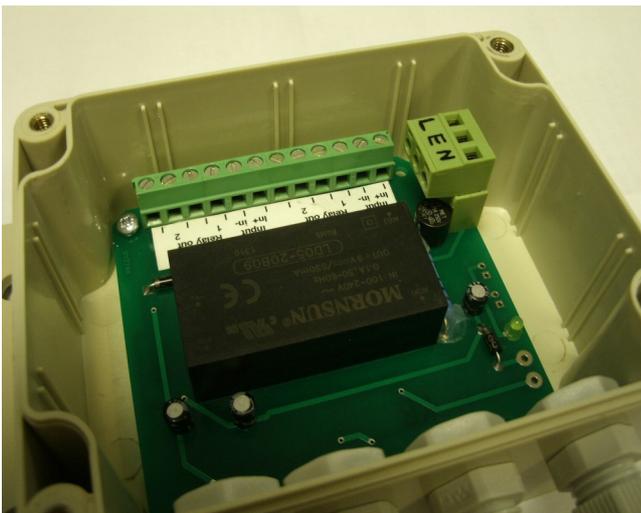
The Din rail unit is fitted with pluggable terminal blocks for ease of connection, and DC links for multiple unit installation. Specify the number of inputs eg; SY273-XX

Wall mounted IP65 unit SY27*-XX-IP65

The IP65 sealed unit is in an ABS wall mounting case and comes with a variable number of M12 sealed cable glands dependent on the number of inputs required.

An important note reference AC power connection

If you choose the SY27*-AC-IP65 versions the mains power connection details are the reverse of the DIN rail cased unit as the connections are on the back of the circuit board (**see images below**).



POWER

The SY27*-DC can be powered from a DC supply of between 8 and 27V.

The SY27*-AC is the mains powered version and operates off a mains supply of between 85V and 264V. It can also have a battery back up connected to the DC input rated at 8.4V. When the mains is connected to the SY27 it won't drain the battery but if the mains drops out the battery will then start powering the unit.

A single mains powered SY27* can be linked to up to 9 other DC units to power them and a simple linking cable is supplied to ease the installation of multiple din rail mounting units.

Once power has been connected to The appropriate plug in terminal block (2 way for DC, 3 way for mains or 24V AC), up to 9 other DC units can be powered using linking cables. A linking cable is supplied with each SY27* to simplify wiring.

Figure 1 (right) shows the internal power connections. The main circuit is powered from the regulated 5V supply. When DC power is used the 2 way terminal block connects the DC source directly to the input of the 5V regulator.

When mains power is used the 3 way terminal block connects the mains source to a 9V power supply which then connects to the input of the 5V regulator. The diodes prevent conflict if both mains and DC inputs are connected. They also prevent damage if the DC input is the wrong polarity.

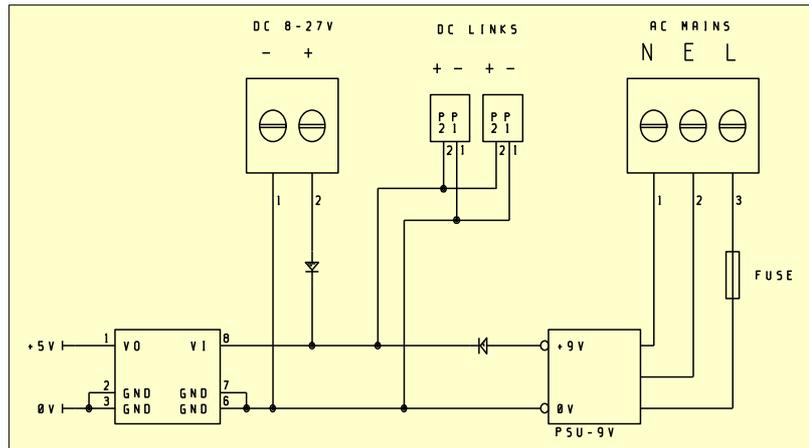


Fig.1

The 2 DC link connectors allow power to be bussed easily to other units, reducing the number of terminal block connections required in a system. A single mains powered SY27* can be linked to up to 9 other DC units. A green LED on each SY27* indicates the presence of the 5V supply.

2. INPUT/OUTPUT SIGNALS

The outputs are isolated polarity independent solid state relays for maximum flexibility. They have an on state resistance of 35Ω max and can switch up to 110mA and withstand 350V. These are suitable for connecting to the vast majority of circuits designed for meter signal inputs. In the unlikely event of being unsuitable for your application, contact us.

The diagrams below indicate how various types of meter output signals can be connected to the SY27*.

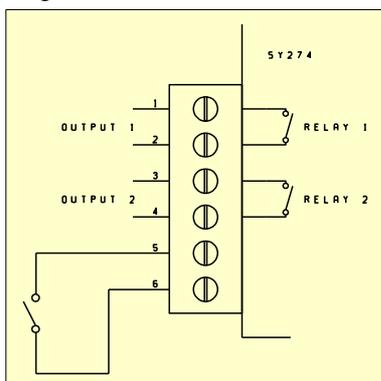


Fig.2

Reed switch/relay contacts

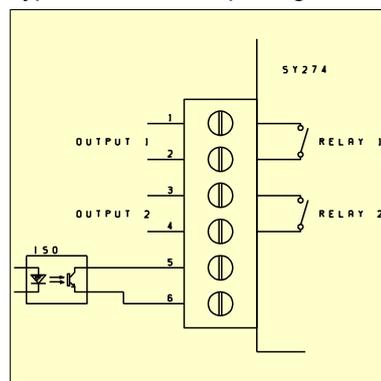


Fig.3

Opto isolator NPN transistor

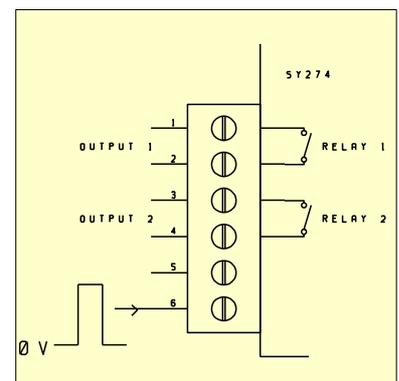


Fig.4

Voltage Pulse

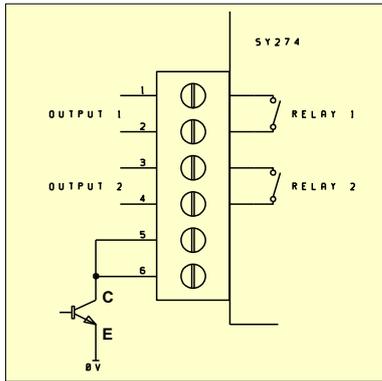


Fig.5

Open collector NPN transistor

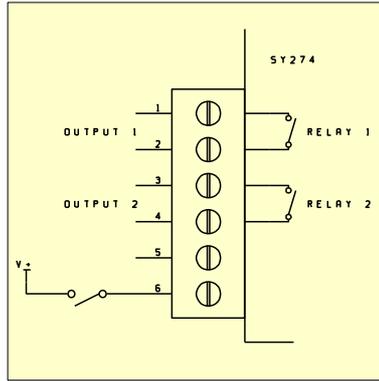


Fig.6

Switched positive voltage

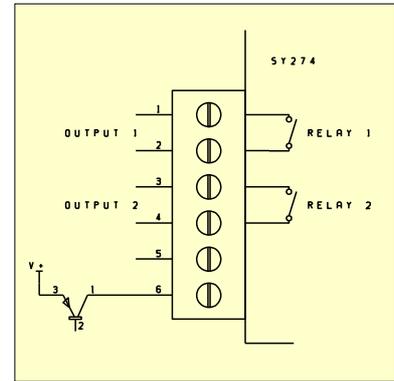


Fig.7

PNP transistor switched +ve

Notes:

1 SUPPLY REFERENCED SIGNALS

Connections illustrated by figures 4,5,6 and 7 all involve signals which are relative to a supply negative. In many cases this would be the meter supply voltage. If the same DC supply is used to power the SY274, no other connection is required, since both will be referenced to the same supply negative. Otherwise a connection needs to be made between the meter output common and the SY274 supply negative.

2 PULSE OUTPUTS

Many meters, including electricity meters, often quote isolated pulse outputs. A closer look at the data sheet indicates that the outputs are "N/O volt free contact" or "Optically isolated FET". In both cases connection should be as shown in Fig.2.

Specifications

Parameter	Min	Typ	Max
Supply voltage (DC power version)	8		27
AC mains power version	85		264
Input options	OPTO Coupler, reed switch, open collector, TTL pulse		
Current consumption (mA)	10	25	50
Relay Isolation Voltage (Vrms)	1500	-	-
Relay switching voltage (at 110mA)			280V
Relay on resistance (Ω)			35
Frequency range (Hz)	0		2k

EMC

Tested to
BE EN 61000-4-21:2011

Operating temp.(C)

-20

65

Storage temperature (C)

-55

125

Case

Green flame resistant
polyamide. H(on rail) =
100mm, W=22.5mm, D =
82mm. For use with
asymmetric rails EN50035
(DIN46277-1) or
symmetric EN50022
(DIN46277-3) .

Inquiries and trouble shooting

For any inquiries and problems with the SY27* or other available products checkout our Website or send an email using the appropriate link below.

Website: www.synectic.co.uk

Email: technical@synectic.co.uk