

Generator Load Management and Surge Protection

- Load Dropping
- Load Regulating
- Load Management Controllers
- Wireless Applications
- Surge Protection

About PSP Products Inc.

- PSP has been in the surge protection business for 25 years.
- For the last 15 of those years we've been in the generator business.
- The first 12 years of our business we installed over 3,000 generators for a large investor owned utility in Virginia.
- The Northern VA & DC markets were one of the first to adopt the NEC 2008 code, section 220 mandating stand-by generators must be capable of handling connected loads or be capable of limiting the connected load to generator output.

About PSP Products Inc. (cont.)

- It was then we began developing load shedding devices for our installations to get them through inspections.
- Over 3 years ago we sold our installation side of the business, so we could concentrate on building & distribution of our load management products.
- PSP soon became a UL508 certified panel shop to build the products you see today; we also have the capability to custom build units with a UL listed sticker on the end product, which many inspectors want to see now.

About PSP Products Inc. (cont.)

- We test all of our products on Kohler generators & switches to make certain they're compatible and work on both single and three phase.
- This NEC code is now being enforced in over half of our country & it's gaining momentum. If you're not faced with it already, it's not a matter of if but when will it be enforced in your area.

Aside from code purposes to use load management devices another great objective is to sell more generators

- How many times have you heard - I want the whole house connected and your customers have a fit when you quote them a price?
- Everyone else is quoting a liquid cooled – Can you do something different, and still leave me lights / tv / computers / hvac? Which is what they really want anyway.
- With our load management devices you can give them exactly what they want and sell more generators.

Here are a few examples

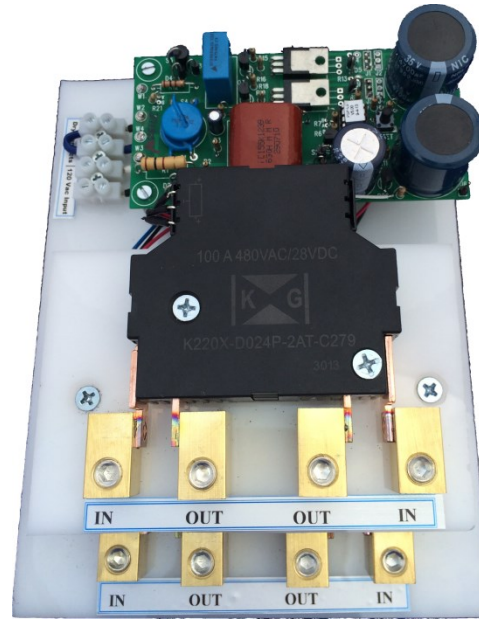
- 200 AMP service with 100 AMP sub panel on other side of home, we can drop or regulate it depending on what the customer's needs are.
- 400 AMP service with one of the panels on other side of home & they need some items out of that panel, we can regulate the 200 AMP disconnect that is feeding this panel & leave it up to them to choose what they want.
- 600 or larger AMP service, put in three 200 AMP switches & load regulate 4-6 loads with a Kohler® load shed board in the RXT switch. You can then use our relays and drop all of the rest of the double pole loads not needed.

Load Definitions

- **Load Dropping** – To eliminate a load from the circuit when the utility power is lost or generator is in transfer mode. The load is NOT restored until the utility power is returned and transferred back.
- **Load Regulating** – Managing loads by removing and restoring loads based on the generators available capacity and the loads priority.

Load Dropping

Load Dropping Latching Relays For Loads Over 50 Amps

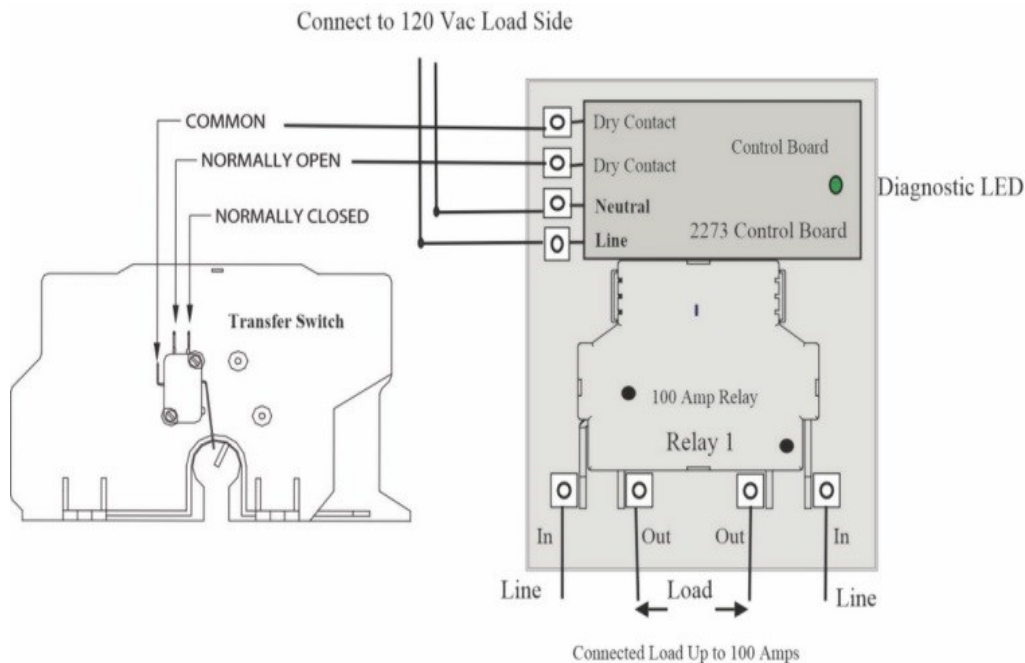


Two 100 amp latching relays stacked

Pro's

- Silent when ON or OFF No Humming, Buzzing or Chattering
- No heat produced in On or Off state
- Available for loads up to 200 Amps
- Extremely reliable and carry a 5 year warranty on the relays

Latching Relay Applications (Load Dropping 1-4 Loads)



Available with 1-4 Relays

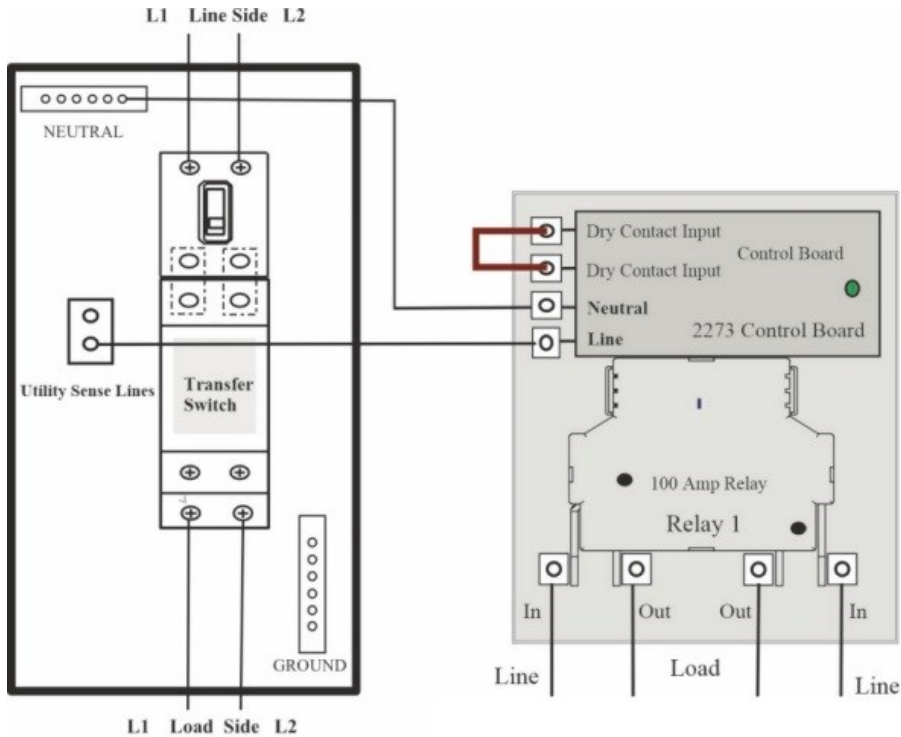
Load dropping utilizing the transfer switch dry contact leaf switch (5 Minute Return Delay)

Under \$200 – 1 Relay + 2 Hours Labor

Under \$400 – 4 Relays + 4-5 Hours Labor

PSP Products Inc, 800-648-6802
www.pspproducts.com

Latching Relay Applications (Load Dropping)

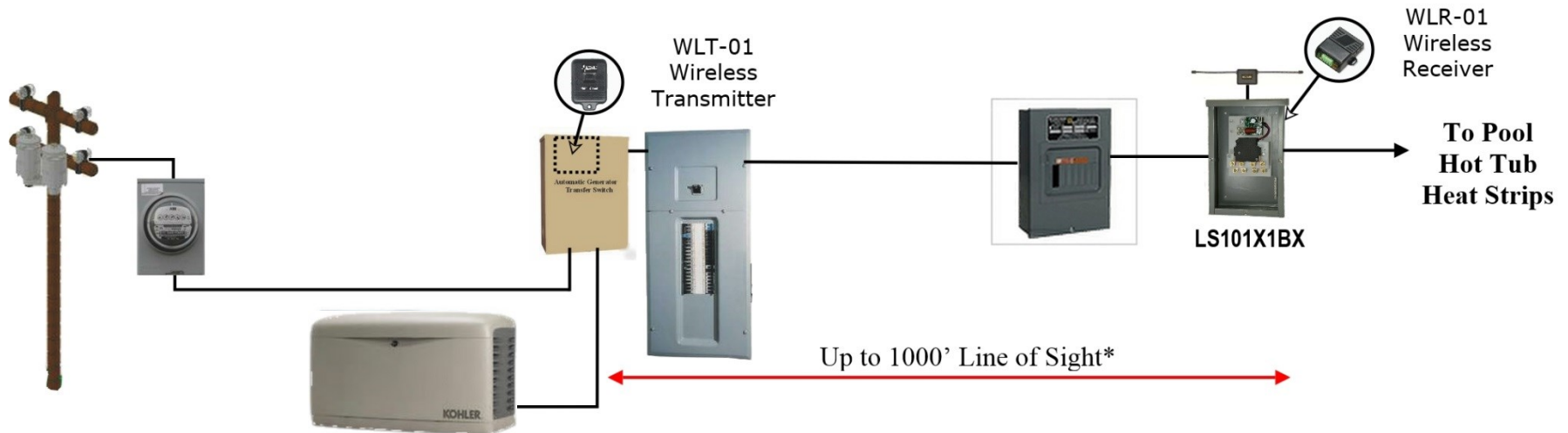


LS101X1BX

Available with 1-4 Relays

Load dropping utilizing the Utility Sense Voltage (5 Minute Return Delay)

Latching Relay Applications (Load Dropping Wirelessly)



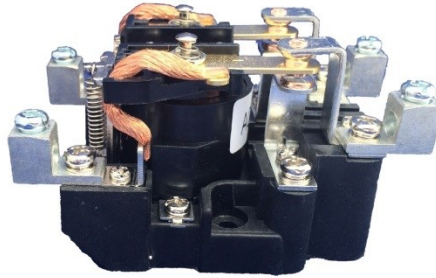
Load Dropping by wirelessly detecting loss of utility voltage

With multiple remote loads to drop you can set a sub panel and control with one 100 amp relay

Load Regulating With Latching Relays and Open Frame Relays

Open Frame Relay

N/C or NC/NO



Pro's

- Normally Closed – Silent 97% of the time in use (not energized)
- Small low profile foot print
- Available in a full range of control voltages 120 VAV – 24 VAC 12 VDC Etc.
- Available for loads up to 50 Amps
- Fail closed

Con's

- Only available up to 50 amps
- Will produce noise and heat when active 3% of time (Load shedding)

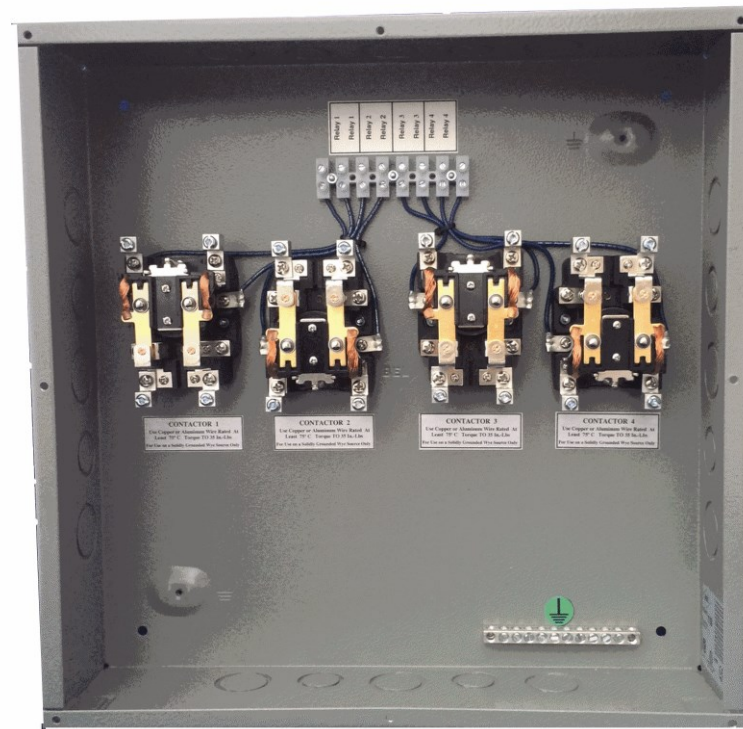
Open Frame Relay Assemblies



LS051X2EX



LS051X3EX



LS051X4EX

Enclosures available with 2 and 3 relays in NEMA 01 and 4 relays in 3R can

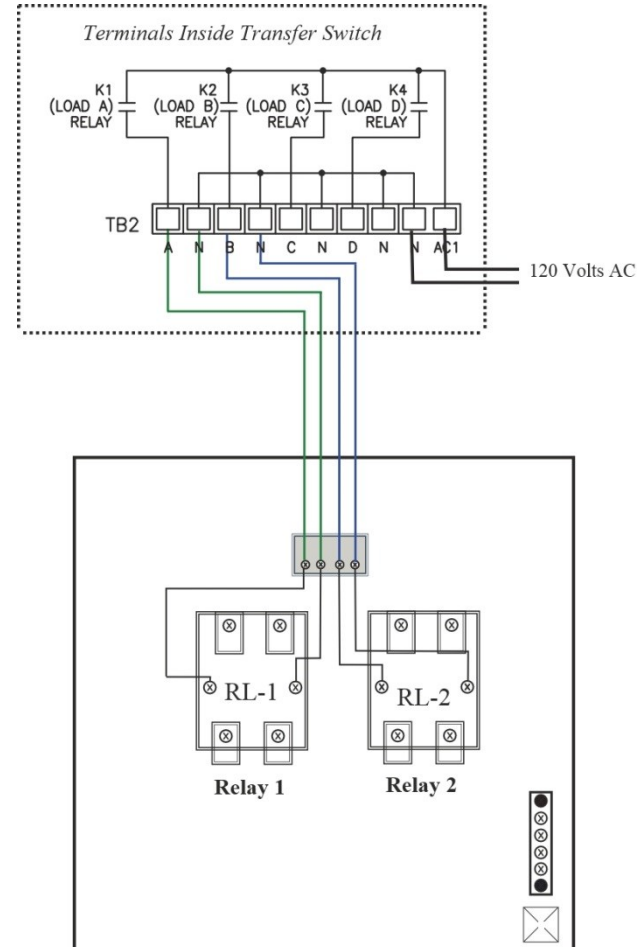
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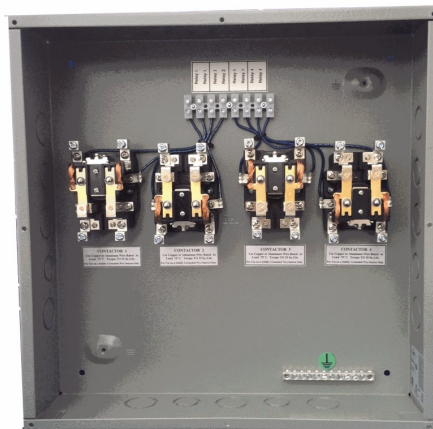
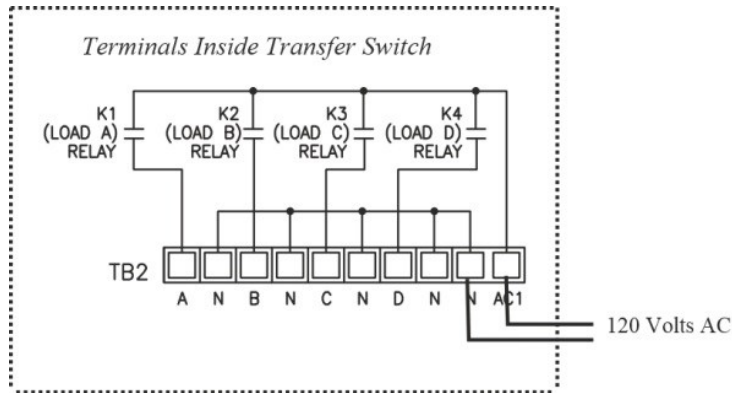
2-4 Relay Enclosure assemblies for direct connect to KOHLER Board



LS051X2EX



2-4 Relay Enclosure assemblies for direct connect to KOHLER Board



LS051X4EX



Kohler load shedding board and LS051X4EX with 4 50 amp relays now equal the discontinued product

Around \$200 and 4 hours labor to install 4 relays

½ The products cost

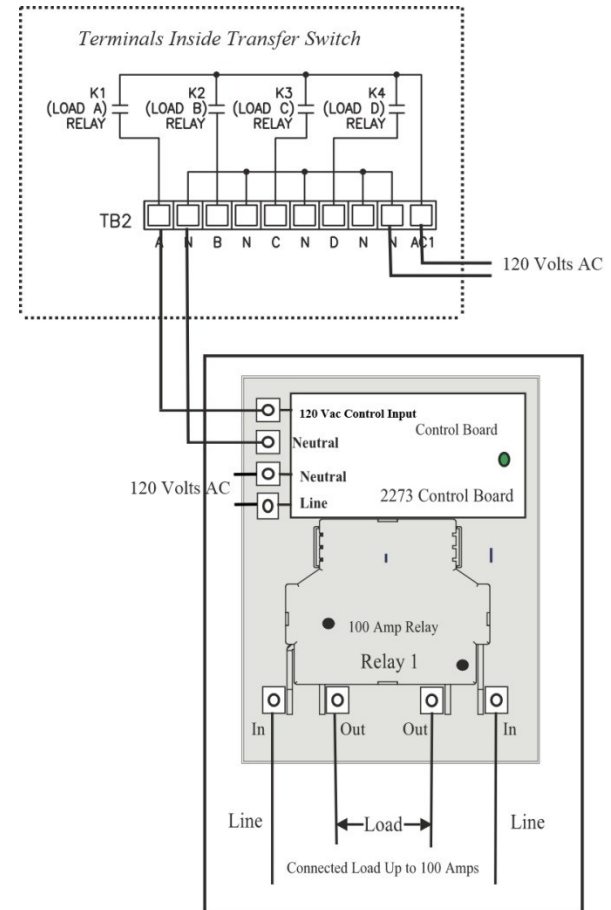
PSP Products Inc, 800-648-6802
www.pspproducts.com

Load regulating with Latching Relays



LS101X1BX

Available with 100 & 200 Amp Relays



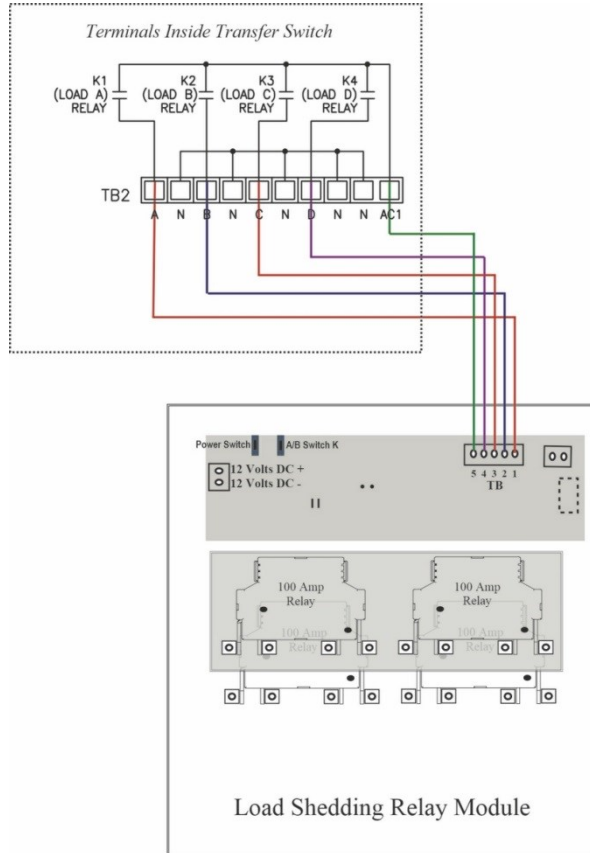
Manage a single load up to 200 amps with latching relays and KOHLER Load Shedding Board

PSP Products Inc, 800-648-6802
www.pspproducts.com

Around \$200 and 2 hour labor

Load Regulating with Latching Relay

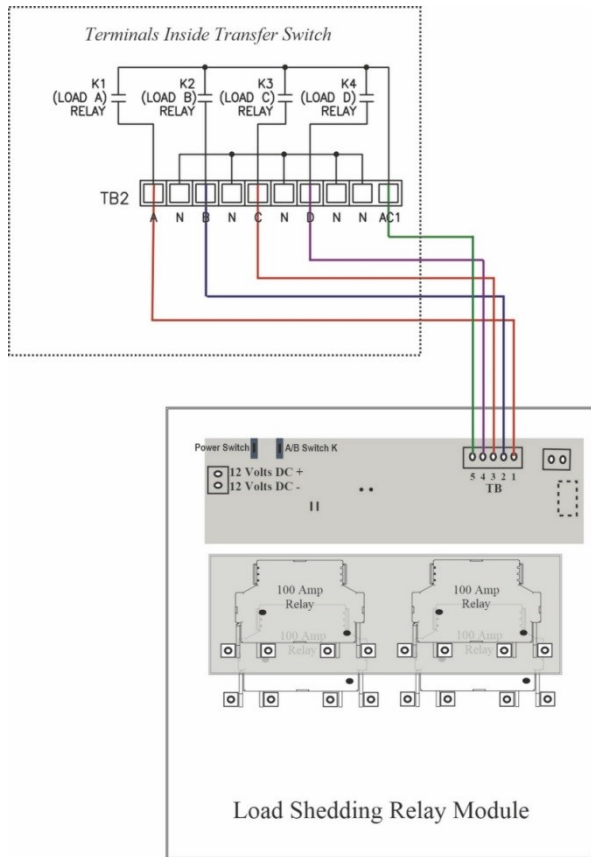
Regulates From 2 to 4 100 Amp Loads Independently



LS101X4LX

Load Regulating with Latching Relay

Regulates From 2 to 4 100 Amp Loads Independently



LS101X4LX



Kohler load shedding board and LS101X4LX with 4 100 amp latching relays exceed discontinued product

Under \$500 + 4-5 hours labor

BSP Products Inc. 800-648-6802
About the same price as the Kohler 4 Relay Box with twice the capacity
www.pspproducts.com

Stand Alone Load Shedding System

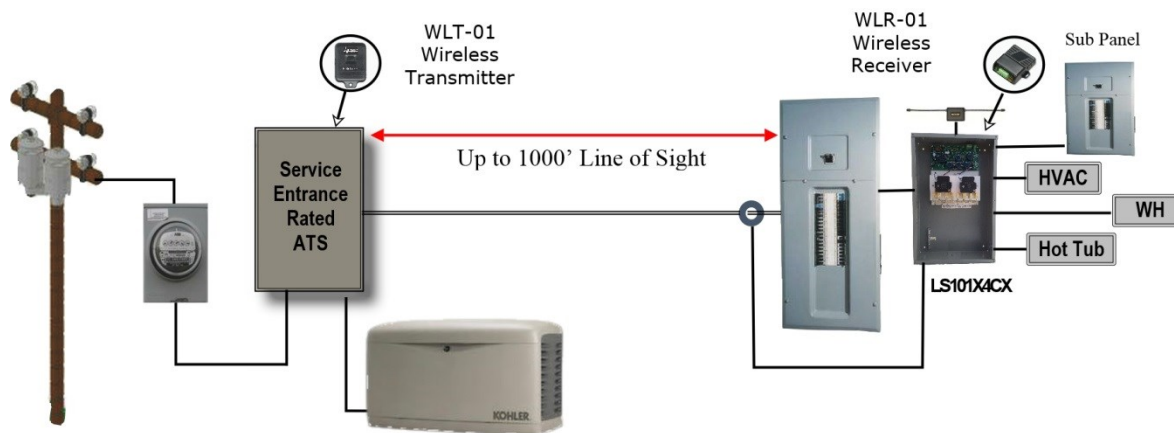


LS101X4CX



Complete stand-alone load shedding system. Comes complete with 2, 3 or 4 magnetic latching 100 amp relays. Control board, CT's. Flush mountable with optional over sized cover. Utilizes CT's and intelligent logic controls for precision control unlike frequency monitoring that allows generators to run at higher loads and relies on overloading generator for load shedding control. Great for RDT switches and liquid cooled.

Wireless Load Management



LS101X4CX

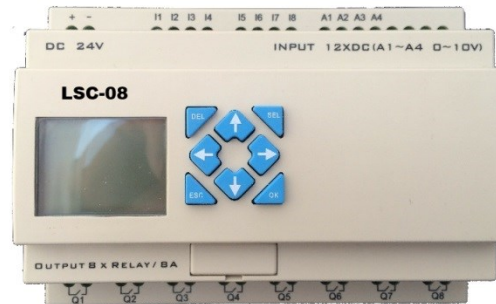
The LS101X4CX can be used in conjunction with the WLT-01 transmitter and WRL-01 receiver for wireless utility loss detection. Applied to application where the transfer switch and generator are located away from the main electric panel and a utility sense wire is not available to the load shedding controller.

Stand-Alone Load Shedding Controller with 4-12 **Dry Contact** relays

**Stand-Alone Load Management Controllers work with
ANY generator or transfer switch to manage up to 12 loads**



LSC-04 4 Load Controller
Single Phase



LSC-08 8 load Controller
Single or Three Phase

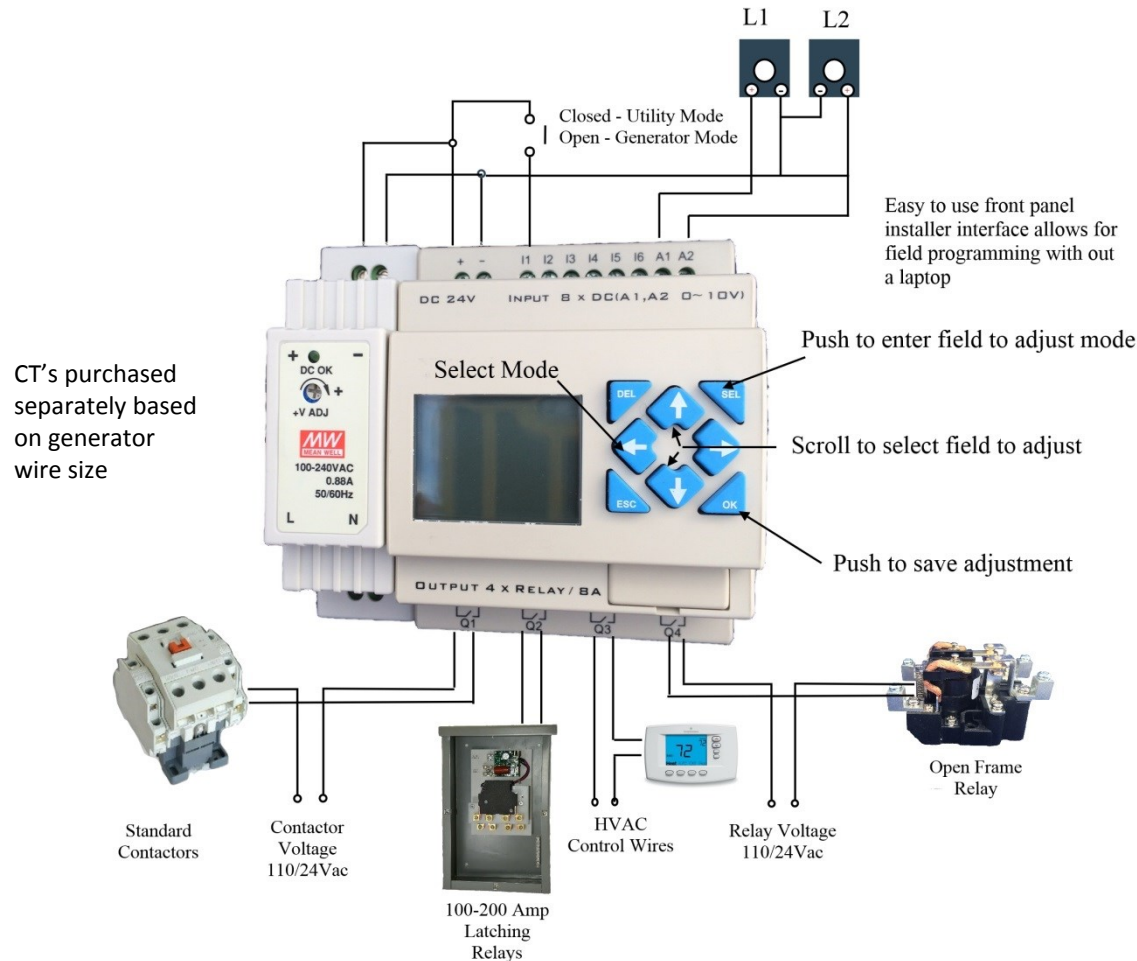


LSC-04X 4 Load Expander
Works with LSC-08

Programmable from the front panel display. Uses CT's for precision control and works with single and three phase applications. Din rail mountable, small foot print fits in most transfer switches.

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Stand-Alone Load Shedding Controllers can be configured for NO or NC Relays



Program Settings	
Generator Full Load Amps	0-1000 Amps
Start Up Delay	0-10,000 Sec
Full Load Amps Relay 1-12	0-1000 Amps
Delay Between Load Restore	0-10,000 Sec
In-Rush Delay	0-10,000 Sec
Active Open Circuit	On-Off
Active Closed Circuit	On-Off
Generator Actual Amps	Monitor Only
Relay Status	Monitor Only

All relays must be configured for either normally open or normally closed. Cannot be configured independently.

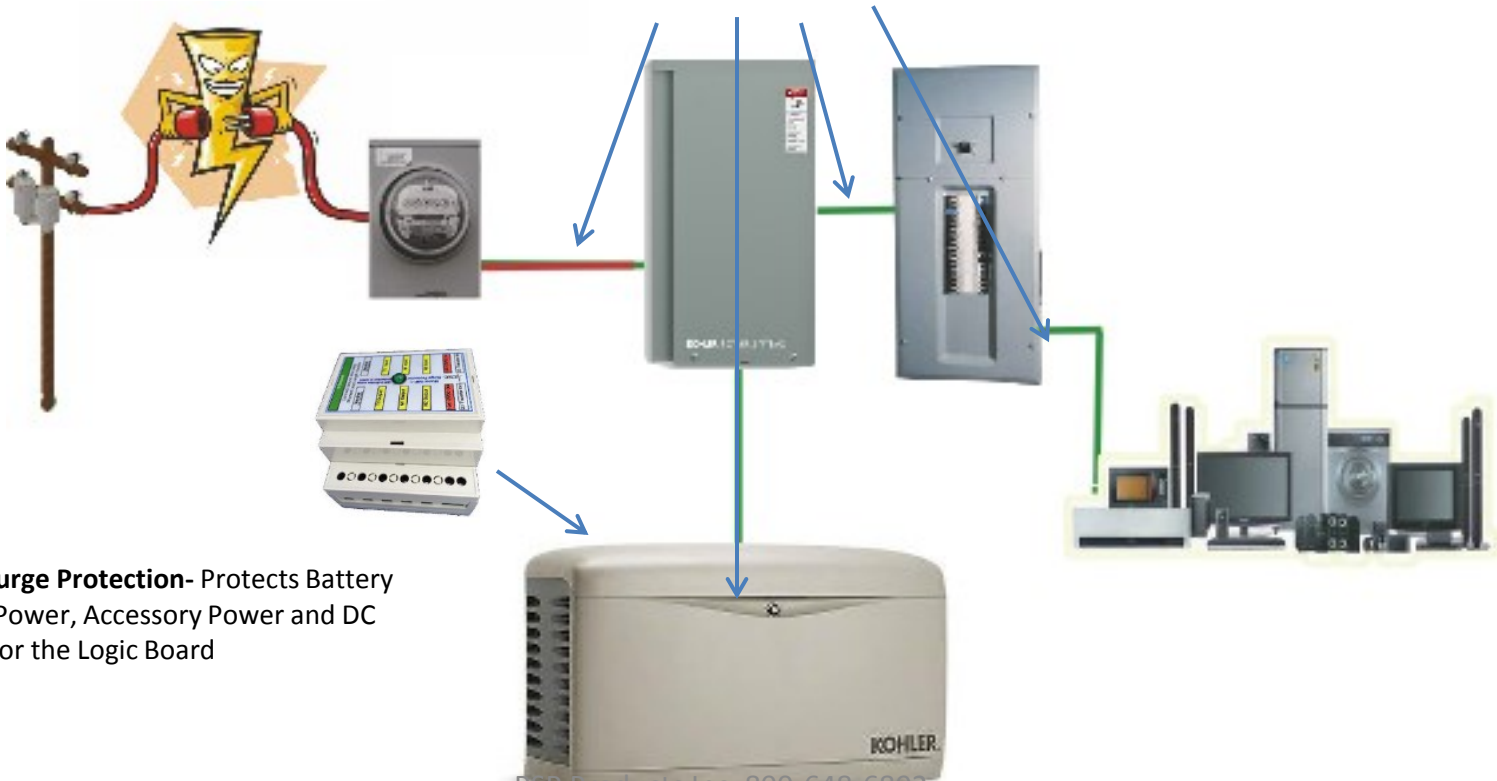
\$1000 - \$1500 in product cost + 8 hours labor you can handle up to 12 loads

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Surge Protection Opportunities



Type One Surge Protector- U.L. Approved For Installation at the Line or Load side of The transfer switch or at the main Electrical panel



In-Line Surge Protection- Protects Battery Charger Power, Accessory Power and DC Voltage for the Logic Board

Bring Us Your Toughest Load Management Challenge and Put Our Technical Team To The Test

We can custom build most any panel to meet your exact requirement's

Decades of experience and a diverse pool of knowledge are at your disposal.
Your toughest challenges today are our new products for tomorrow.

Ask Yourself These Questions/and then call us

If only there was a way to -----, Installs would be much easier.

If it weren't for -----, Generator installs would go much faster.

If only I had -----, I could sell a lot more generators.

I think -----, would make a great add on item when selling generators

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