ELECTRIC FENCING PRODUCTS THAT DELIVER PEACE OF MIND

NEMTEK
Electric Fencing Products

DRUID™ 24 (DUAL ZONE)

The Druid 24 LCD is the dual zone version for the LCD range. Each independently controlled zone offers 2 joules of output energy into a 500 ohms load. This integral unit is ideal for dual zone systems and can be expanded to a 4 zone system.

- Two independently monitored and controlled zones
- A four zone system can be created by linking two D24 LCD energizers together
- Keypad programmable
- Each zone can be set independently to on/off or high/low voltage mode
- LCD display – quick and easy to read
- The unit can be used as a standard electric fence energizer, but can also be programmed to use the expansion card to be an integral part of an alarm system

D24 EXPANSION CARD

- 10 relay outputs
- 4 relay inputs
- Programmable configuration for relays
- Relay outputs can be programmed to show and mimic
  - Zones 1 or 2 on and off
  - Zone 1 or 2 high and low voltage
  - Mains fail
  - Battery low
  - Alarms zone 1 and 2
  - Service indication
  - Tamper indication
  - Check indication zone 1 and 2
  - Communication time out
- Relay inputs can be programmed to control
  - Zone 1 and 2 on and off
  - Zone 1 and 2 high and low voltage

FG7 TOUCHSCREEN

The FG7 is a touch screen LCD keypad interface that can be used to control a multiple number of energizers. The FG7 can be used with the Druid 24 LCD or with both the Merlin M25S and the M28S energizers.

ENERGIZER SPECIFICATIONS

Nemtek Energizer Brand	Wizord		Merlin	Merlin Stealth ™				Stealth Master		Druid				
Model Number	**2**	**4**	**4**	**M15S**	**M18S**	**M25S**	**M28S M28X**	**M25M**	**M28M**	**13 LCD**	**15 LCD**	**18 LCD**	**114 LCD**	**24 LCD**
Energizer Dimensions														
	L180 x W205 x D120			L365 x W230 x D140						L180 x W205 x D120		L365 x W230 x D140		
High Voltage Outputs														
Typical energy output into 500 Ohms load (Joules)	2J	3.7J	3.7J	4.8J	7.6J	4.8J	7.6J	4.8J	7.6J	3J	4.6J	7.6J	13.8J (150 Ω)	1.9J x 2 zones
Output Voltage into an open circuit	7 400V	8 000V	8 000V	8 500V	9 300V	8 500V	9 300V	8 500V	9 300V	9 000V	9 000V	9 600V	9 000V	10kV
High or Low Voltage modes, alarm monitoring is enabled in both modes. Output voltage settings can be changed for both the High and the Low voltage modes	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of High Voltage monitored zones	1	1	1	1	1	2	2	2	2	1	1	1	1	2
Number of Earth loop monitored zones	1	1	1	1	1	2	2	2	2	1	1	1	1	2
Adaptive Power Technology (APT), reducing false alarms and arcing on the fence	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Fence Interference detection from foreign energizers	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Energizer Controls and Displays														
Keypads for the remote control of the energizer	No	No	4 max 1 incl	4 max	4 max	4 max	4 max	4 max	4 max	2 max	2 max	2 max	2 max	2 max
Tag switch – to control the energizer without using a keypad	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote On/Off input	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes
Displays the output and return voltages	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Display type	LED	LED	LED	LED	LED	LED	LED	LED	LED	LCD	LCD	LCD	LCD	LCD
Gate and Panic Button inputs														
Timed gate switch input, used to monitor open and closing of the gate	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes
Panic button input	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes
Alarm outputs														
Siren output, time programmable	Fixed	Fixed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Strobe light output to visually indicate an alarm condition	1	1	1	1	1	2	2	2	2	1	1	1	1	2
Power supply and battery backup systems														
Mains supply voltage***	230V	230V	230V	230V	230V	230V	230V	230V	230V	230V	230V	230V	230V	100 – 240Vac / 50 – 60Hz
Typical power consumption under normal operating conditions	17VA	18VA	16VA	27VA	27VA	27VA	27VA	27VA	27VA	18VA	18VA	25VA	27VA	25VA
Internal battery backup system in case of power failure, capacity of battery	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah	7 Ah
Typical standby time, with a fully charged battery	24 hrs	36 hrs	24 hrs	6 hrs	8 hrs	7 hrs	6 hrs	7 hrs	6 hrs	24 hrs	24 hrs	24 hrs	9 hrs	24 hrs
Solar power panels can be connected to power the energizers, (recommend Watt size for 24 hr operation)**	60 Watts	60 Watts	60 Watts	120 Watts	140 Watts	120 Watts	140 Watts	120 Watts	140 Watts	60 Watts	60 Watts	140 Watts	140 Watts	60 Watts

Nemtek Energizer Brand	Wizord		Merlin	Merlin Stealth ™				Stealth Master		Druid				
Model Number	**2**	**4**	**4**	**M15S**	**M18S**	**M25S**	**M28S M28X**	**M25M**	**M28M**	**13 LCD**	**15 LCD**	**18 LCD**	**114 LCD**	**24 LCD**
Solar voltage regulator	5 Amp	5 Amp	5 Amp	9 Amp	10 Amp	9 Amp	10 Amp	9 Amp	10 Amp	5 Amp	5 Amp	10 Amp	10 Amp	5Amp
Deep cycle battery size recommended in Amp hours (20 % discharge over a 24 hr cycle)	60 Ah	60 Ah	60 Ah	120 Ah	150 Ah	120 Ah	150 Ah	120 Ah	150 Ah	60 Ah	60 Ah	150 Ah	150 Ah	60 Ah
Wire length per energizer (live wires in a series system) for both solid and stranded wires														
Galvanised wires, 1.2mm														
• Optimal performance up to	2km	3km	3km	8km	10km	2x4km	2x5km	2x4km	2x5km	3km	5km	10km	15km	2x2km
• Maximum	4km	5km	5km	18km	25km	2x9km	2x13km	2x9km	2x13km	5km	8km	25km	35km	2x4km
Galvanised wires, 2.0mm, 2.24mm														
• Optimal performance up to	3km	4km	4km	16km	20km	2x8km	2x10km	2x8km	2x10km	3.3km	5km	20km	20km	2x3km
• Maximum	6km	10km	10km	35km	50km	2x17km	2x25km	2x17km	2x25km	6.6km	12km	50km	50km	2x6km
Stainless Steel 1.0mm, 304 and 316 grade														
• Optimal performance up to	0.5km	0.6km	0.6km	0.6km	0.7km	2x0.7km	2x0.8km	2x0.7km	2x0.8km	0.6km	0.7km	0.8km	0.9km	2x0.5km
• Maximum	0.6km	0.9km	0.9km	0.9km	1km	2x1km	2x1.2km	2x1km	2x1.2km	0.9km	1km	1km	1.2km	2x0.6km
Stainless Steel 1.2mm, 304 and 316 grade														
• Optimal performance up to	0.6km	0.7km	0.7km	0.8km	1km	2x0.8km	2x1km	2x0.8km	2x1km	0.7km	0.8km	1km	1km	2x0.6km
• Maximum	0.9km	1km	1km	1.1km	1.3km	2x1.1km	2x1.3km	2x1.1km	2x1.3km	1km	1.1km	1.3km	1.3km	2x0.9km
Stainless Steel 1.6mm, 304 and 316 grade														
• Optimal performance up to	1.2km	1.4km	1.4km	1.6km	2km	2x1.6km	2x2km	2x1.6km	2x2km	1.4km	1.6km	2km	2km	2x1.2km
• Maximum	1.8km	2km	2km	2.2km	2.6km	2x2.2km	2x2.6km	2x2.2km	2x2.6km	2km	2.2km	2.6km	2.6km	2x1.8km
Stainless Steel 2.0mm, 304 and 316 grade														
• Optimal performance up to	1.8km	2.1km	2.1km	2.4km	3.3km	2x2.4km	2x3km	2x2.4km	2x3km	2.1km	2.4km	3.3km	3km	2x1.8km
• Maximum	2.7km	3km	3km	3.3km	3.9km	2x3.3km	2x3.9km	2x3.3km	2x3.9km	3km	3.3km	3.9km	3.9km	2x2.7km
Aluminium Wire 1.6mm and 2.0mm														
• Optimal performance up to	6km	8km	8km	32km	40km	2x16km	2x20km	2x16km	2x20km	8km	10km	40km	40km	2x6km
• Maximum	12km	16km	16km	60km	80km	2x30km	2x40km	2x30km	2x40km	16km	20km	80km	80km	2x12km
Multi energizer systems														
Can be used in multi-energizer network system	No	No	No	No	No	Yes	Yes No	Yes	Yes	No	No	No	No	Yes
Compliance														
IEC 60335-2-76	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cispr 14, EN 61000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Output energy is a function of component tolerance and energy settings, and is reduced during power failure.

YES* Indicates that this function is available at the cost of another function, further details are on our website www.nemtek.com.

** Solar Panel sizes and Battery capacities are based on the exposure to sunlight in southern Africa and can change depending on the location of the solar panels.

*** All energizers are manufactured with a 230Vac ± 10% transformer, 110 Volts are available on request. Batteries are supplied as a standard.

Specification may change without prior notice.

USING THE DRUID 24 LCD ENERGIZERS

1. DRUID 24 LCD 4 ZONE SYSTEM

The Druid 24 LCD energizer can be networked into a 4 zone system using a second Druid 24 LCD energizer. No communication cards are needed for this simple and cost-effective 4 zone solution.

2. FG7 SYSTEM. 2 TO 64 ZONE SYSTEMS

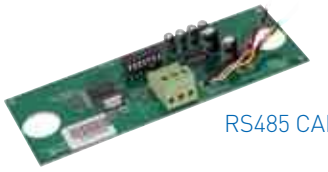
The FG7 system comprises of a LCD touch pad and up to 32 Druid dual zone energizers. Up to 32 Druid dual zone energizers can be controlled by the FG7 offering up to 64 independent zones. This system can also control relay cards for other functions such as gate control and monitoring.

3. THIRD PARTY SOFTWARE

The Druid 24 dual zone energizers can be integrated with other software systems using software development kits (SDK) once these systems have been qualified by Nemtek.

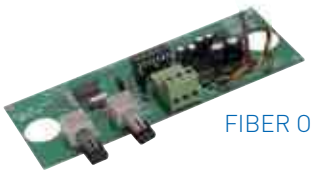
COMMUNICATION CARDS (• •)

RS485 and fiber optic communication cards are available for both the Merlin Stealth and the Druid 24 dual zone energizers. These cards allow energizers that are located far apart to communicate with each other and the system. They are housed near or inside the energizers and are powered by the energizer.



RS485 CARD

RS485 CARD
FOR D24 LCD



FIBER OPTIC CARD

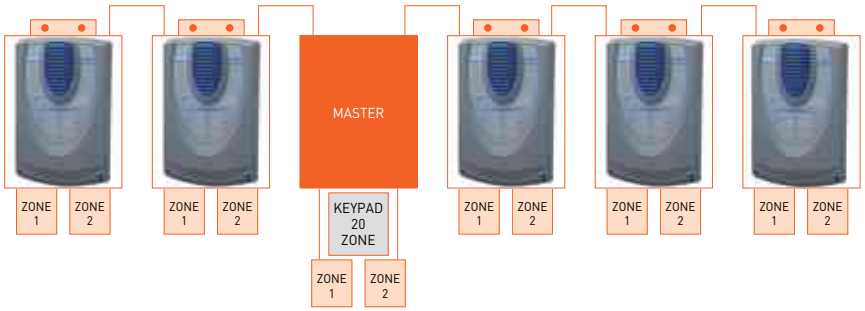
Network Type	Energizer types	Max Zones per sites	Number of sites	Display and control	Physical network communication cards	External interface (Connectivity)
Master system	M25M, M28M, M25S, M25S	20	1	Led 20 zone keypad	1. RS485 2. Fiber optics	Mimic (relays)
FG7 system	M25S, M28S	32	1	LCD 7" touch pad	1. RS485 2. Fiber optics	
Nemtek Fence Probe software	M25S, M28S	32	5 (standard package)	Computer, screen and keyboard	1. RS485 2. Fiber optics	TCP/IP
Cortech Developments	M25S, M28S	32	Multiple	Computer, screen and keyboard	1. RS485 2. Fiber optics	TCP/IP, Expansion cards (Netiom)
Druid 24 – 4 zone system	D24	4	1	Led 4 zone keypad		Expansion card
FG7 system	D24	64	1	LCD 7" touch pad	1. RS485 2. Fiber optics	Expansion card TCP/IP
Third party software	D24	64	Multiple	Computer, screen and keyboard	1. RS485 2. Fiber optics	TCP/IP

MULTI ZONED SYSTEMS

In situations where multiple electric fence zones are required both the Merlin Stealth and the Druid dual zone energizer systems offer a range of options.

USING THE MERLIN STEALTH M25S AND M28S ENERGIZERS

1. MASTER 4 – 20 ZONE SYSTEM

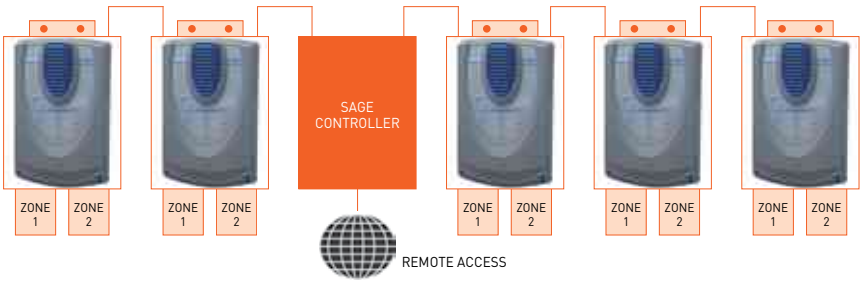


The Merlin master system comprises of a Merlin Stealth Master energizer and up to 9 standard dual zone Merlin Stealth energizers acting as sub-energizers or "slaves" to the Master. The master energizer has two zones and by adding 9 slaves to the system up to 20 electric fence zones can be controlled by one 20 zone LED keypad.

2. FG7 SYSTEM. 2 TO 32 ZONE SYSTEMS

The FG7 system provides the system operator with a touch screen user interface. This allows the operator to control and monitor up to 32 Merlin Stealth dual zone energizers, allowing for 64 zones. The FG7 communicates with a proxy controller that provides battery backup in the case of power failure. The administrator of the system can configure the system to allocate what is considered as an alarm condition.

3. NEMTEK FENCE PROBE SOFTWARE



The Sage controller provides TCP/IP connectivity to the outside world and in particular the Nemtek Fence Probe software allows a visual map image of the fence and its zones to be displayed on a computer screen. Each zone can be seen and controlled from a central computer. The Nemtek Fence Probe software can control a multitude of sites, logging events and visually displaying what is happening on the system.

4. THIRD PARTY SOFTWARE

The Merlin Stealth dual zone energizers range can be integrated with other technologies such as fire alarms, access control, CCTV and be part of a larger system using the Cortech Developments software. Visit www.cortech.co.uk for more information of this high-end management system.

TIPS TO INCREASE YOUR SECURITY

Nemtek's worldclass products are designed and manufactured to ensure a high security solution and offer reliability for many years. Due to the large range of products on offer here are a few tips to ensure your system meets your security needs and operates reliably.

- Spacing between fence wires must not exceed 100mm. This will reduce attempts to part wires. Earth or live loops fitted on the fence will cause an alarm when there is an attempt to part the wire.
- The bottom fence wire where possible should be live and fitted with an anti lift loop where there is a threat of lifting this bottom wire. The top wire must also be live.
- All electric fencing live wires must be connected in a series circuit so that a cut live wire can be detected anywhere along the fence.
- Spacing between posts must not exceed 3 metres. This will discourage attempts to part wires. In the case of freestanding fencing it is recommended that a shorter post be placed between the main posts reducing the span to 1.5m. This in-between shorter post will stop any attempts to lift the bottom wires. Ensure that the ground under the freestanding fencing is secure and not easy to dig under. The height of the freestanding fence must be at least 2m.
- The height of the bracket above the wall is important, the higher the wall brackets the more it discourages attempts to step over the fence. The wider walls will need higher and angled brackets to cover the span of the wall top and reduce any chance of standing on the wall.
- The fence wires must be under constant tension using compression springs. This will improve the aesthetics and the security of the fence.
- Alarm zones lengths should not be longer than 200 metres. The zones must be powered by independent energizer zones. This will help locate the fault faster. This is not always possible due to cost and location constraints. In high security areas shorter zones are recommended.
- No two zones must rely on each other being intact to operate effectively and must be independently alarm monitored. This is important in the case of an attempted multi-point entry breach of the fence.
- Gates can be a weak point. Make sure that sliding gates cannot be lifted up off the rack and be slid open. In the case of swing gates they can be forced open when they are closed. These gates can be monitored for unauthorised entry using a magnetic switch.
- Ensure that the fence is kept free of vegetation.

Frequent testing of the fence is imperative. This test must be on a few points along the fence line.

GENERAL INFORMATION

WARRANTIES: Energizer electronics come with a one year warranty, subject to our standard terms and conditions as set out on the Nemtek website.

COMPLIANCE: Nemtek energizers and products conform to the standards set out by the IEC 60355-2-76, CISPR 14 and EN 6100. Please refer to energizer section of the Nemtek website for more details **(www.nemtek.com)**.

SPECIFICATIONS: Product details can change without prior notice. This brochure is for general information and marketing purposes only.

TERMS AND CONDITIONS OF SALE: Sales of all Nemtek products are done subject to our standard terms and conditions of sale and our distribution agreements. Nemtek terms and conditions of sale are available at all Nemtek branches.

Authorised distributors and representative offices are available around the world, please contact us at **exports@nemtek.com** for further information.

TRAINING COURSES: Nemtek offers training courses for beginners and advanced training on the principles of electric fencing and also on all the products that it manufactures. The scheduled course dates are displayed on our website on **www.nemtek.co.za** or email us at **training@nemtek.com**.

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