GNS Associates Pty Ltd

Remote Asset-Monitoring System

TYPE REMKA™-01P

- **Fully-portable system**
- **Setup in a matter of minutes**
- **Ideal for rotating machinery**
- **Up to 20 independent channels**
- **Flexible data communications**
- **Powerful, user-friendly software**

OVERVIEW

REMKA-01P is a flexible, self-contained, fully-portable system for remotely monitoring electrical and mechanical plant, economically and painlessly.

It has some of the features of conventional Scada systems, but there are also important differences. Rather than accommodating a complete process or a complete operational network, REMKA-01P is designed primarily for individual machines such as motors, generators, pumps, compressors, etc., and simple groups of assets such as motor-load and engine-generator combinations.

There are no "fixed" or "normal" locations for either the base station or the target asset(s). Rather, REMKA-01P has the flexibility to send operational information to and from any site in Australia or overseas.

The system is optimised for use with the cellular-mobile telephone network, and this will normally be the first-choice mode of communications wherever the necessary signal coverage is available. However, various other communications options are available for use outside the (rapidly expanding) limits of cellphone coverage.

Another feature is the ease of setting up and operating the equipment in any new location, which makes ad hoc and short-term performance monitoring entirely practicable.

At the central (base station) location the only facilities normally required are a desktop computer (of suitable performance) and a standard telephone outlet.

Whether for plant commissioning, in-service condition monitoring, or fault diagnosis, REMKA-01P represents an important strategic advance for the owners and operators of electrical and mechanical plant.

SYSTEM OUTLINE

A simplified block diagram of the REMKA system is shown in Fig. 1. Transducers and sensors which measure the various electrical and physical parameters (volts, amps, temperature, etc.) are connected to interfacing circuits which condition the signals and prepare them for transmission via the communications sub-system. (Normally the remote terminal will use its own built-in radio antenna, but various means of enhancing the performance of the RF link are available). At the master control station (MCS) the signals are received, decoded, and displayed in the required digital/graphical format.

The MCS is basically a dedicated, high-performance, desktop computer with the special software required to receive, manipulate and present the data. Some representative screen displays available at the master terminal are shown in Fig.2.

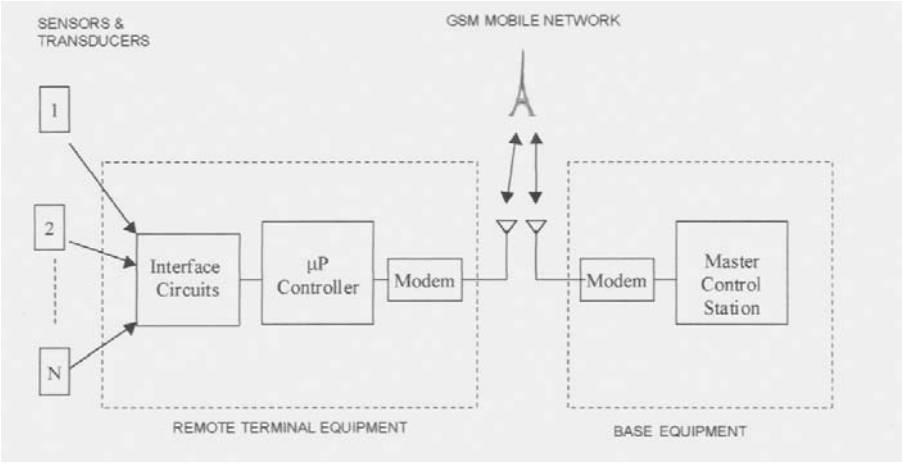

Fig. 1 – REMKA system functional diagram

Although the MCS typically will remain in a single location, flexibility of movement is also possible. For example, it is a simple matter to load the necessary software into a notebook computer (of appropriate technical performance) so as to create a portable base station. To operate such a portable MCS, it is only necessary to connect to a standard telephone outlet. Or, with the addition of a suitable radio modem, completely tether-free operation can be achieved.

At the remote installation, the parameters chosen for monitoring will depend on the particular operational requirements and the nature of the target asset(s). In the case of electrical machines, volts, amps, speed, temperature and vibration are commonly required, with multiple channel allocations to cover three-phase volts/amps, multi-axis vibrations, multiple temperature readings, etc.

Fig. 2 - A typical screen display at the master control station.

MODES OF OPERATION

The normal mode of operation is for the MCS to contact the remote station and request an "update" of the relevant data. (The necessary dialling and downloading instructions are generated automatically, with minimal operator effort required at the MCS). The types of data available for immediate examination include: *a)* a real-time readout of all parameters, in both digital and bar-chart form; *b)* a short-term (24-hour) log of all parameters; *c)* a schedule of any alarms and out-of-range values detected by the system during the preceding monitoring period.

Various other operating modes can also be incorporated. For example, the remote terminal can have the capability of reporting-in automatically rather than simply responding when contacted. There is considerable scope for customisation - please contact us regarding particular user requirements.

MULTIPLE-ACCESS SYSTEM

Where a REMKA system involves more than two or three target assets, and particularly where more than one site is to be accessed, it is desirable to use an additional central computer as a server. The server can also be used to (transparently) control more than one monitor

ELECTRICAL SPECIFICATIONS

(remote unit only)

No. of channels	16 - 12 ac + 4 RTD standard + 1 speed/frequency; 20 (max. - any configuration)
Inputs and sensitivity	0-5V rms (ac channels) 0-200 °C (RTD channels) 0-10,000 r/min (speed)
Communications (standard)	GSM mobile system
Power supply	100-260V ac, 50/60Hz
Operating temperature	0-40ºC (standard)
Enclosure	IP55 (standard)

PERIPHERALS

The peripheral equipment listed below is normally available ex-stock and must be ordered separately (other items to special order). Please contact us for full technical information.

Potential transformer	500:5 V, 3-phase, 50/60 Hz
Current clamps	0-300 A, 50/60 Hz
	0-1000 A, 50/60 Hz
Vibration transducer	0-20 mm/s
Photoelectric speed transducer	0-5000 r/min

ELECTROMAGNETIC COMPATIBILITY

The REMKA-01P system is fully-compliant with Australian and New Zealand electromagnetic compatibility (EMC) Standards.

DIMENSIONS AND WEIGHT

(Remote terminal unit only - not including peripherals)

360mm x 320mm x 190mm (WxHxD)
Mass: 5 kg (approx.)

ORDERING INFORMATION

Please specify as appropriate:-

-power supply voltage/frequency
-number/sensitivity of all channels (ac, dc, r/min)
-ac channel bandwidth
-number speed/frequency channels

INQUIRIES

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