

# HYCONTROL



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The opening of the XXIX Olympiad in Beijing will be the culmination of the most ambitious and expensive investment by any host nation to date. During this mammoth construction project, the transport infrastructure has been a key area for improvement to cater for the anticipated influx of millions of visitors. Until recently the Beijing subway system has been barely adequate to handle the daily passenger requirements and, as a result, main contractors BCECCL have been tasked with refurbishing 70 existing stations and the construction of seven new lines in time for the Games. By 2008, the total length of Beijing's subway will reach almost 200 km with a capacity of 1.74 billion passengers per year. The 'Olympic Subway' linking the Olympic Green to South Beijing will be capable of carrying 40,000 to 60,000 passengers per hour.



The MINIFLEX-LR units, which are configured to operate in a conventional dual pump mode, are being installed at all the stations to control the water levels in wet wells. All underground networks stand the risk of being flooded during heavy rain storms and because the wells handle both waste and storm water, accurate and reliable control is vital. If any of the pumping systems fail, the stark reality is that stations could become flooded with sewage. It is clear that the Chinese authorities need to be confident that no such mishaps can occur, especially when the eyes of the world are on them during the Olympics.

Hycontrol's export manager Maurice Mahoney is justifiably proud of his company's achievement in gaining the order and as he explains: *"The contract was won against very stiff international competition and involved extensive site trials over three years. Throughout this time our Beijing based engineers have worked very closely with the authorities and main contractors. The Hycontrol unit was the only instrument to meet all the customer's stringent requirements and consequently the MINIFLEX-LR is now written into the Beijing Subway Design Institute's main specification."*

At each installation the relay outputs from the MINIFLEX are fed locally to the PLC controlling the pumps. There is also a high level alarm and analogue output. Details of alarm status and level information from each installation are transmitted via a telemetry system to a central control hub.

The pump control mode offers seven different operating configurations depending on the requirement for specific applications. In addition to the standard *Duty standby and assist* mode, options include *alternating duty* to even out pump wear, *pump exerciser* to test idle pumps periodically and *pump monitoring* to record pump usage.

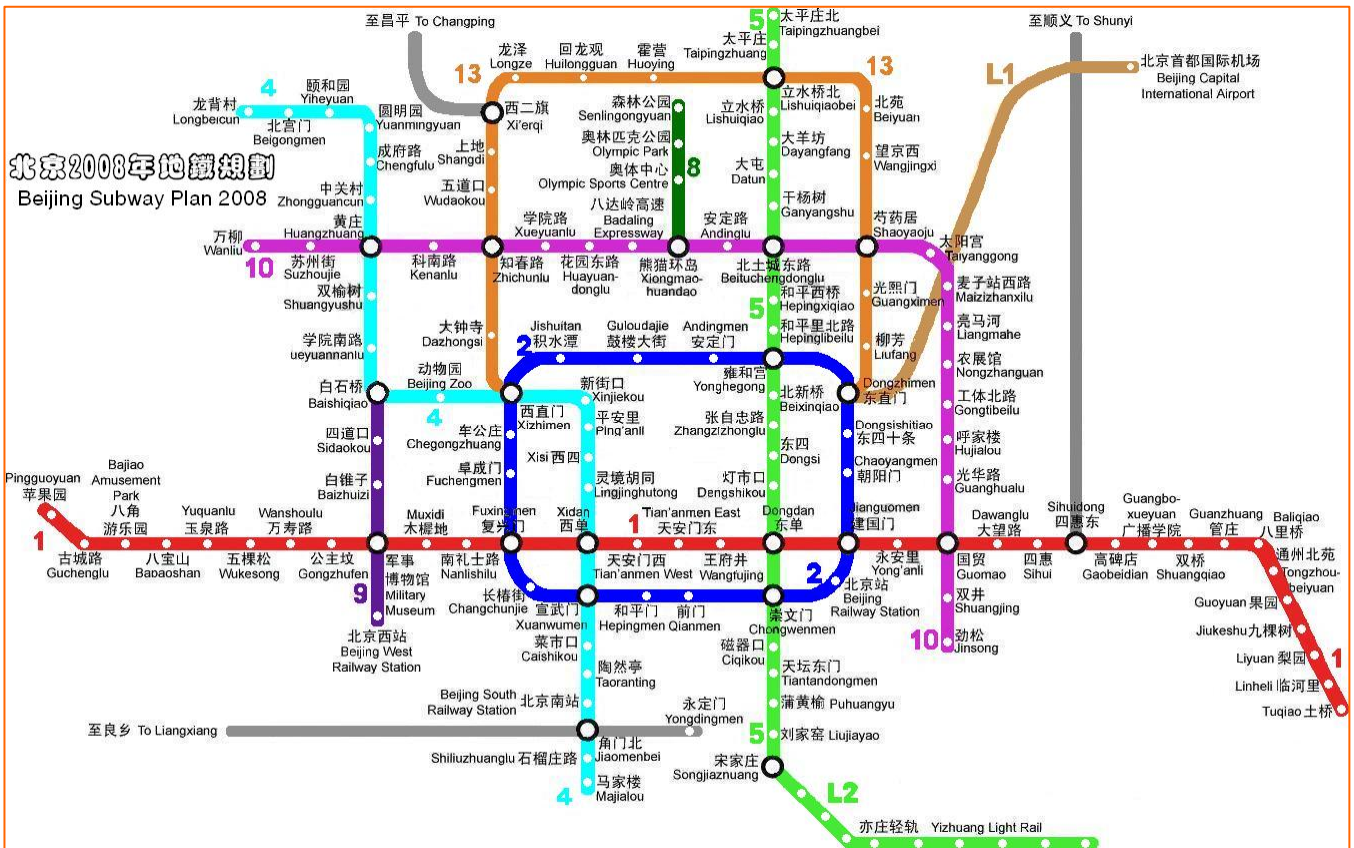
The development of the MINIFLEX has come from hard won experience in the design and application of ultrasonic level control equipment over the past 30 years. This cost effective



instrument, which has a an impressive 10 metre measuring range, boasts a host of features normally associated with units costing over twice as much. In fact the MINIFLEX-LR offers four instruments in one: in addition to pump control, it can be configured for standard level measuring, open channel flow measurement and differential control. Design focus has been on reliability, versatility and ease of use. The simple,

security-coded five button programming guides the operator rapidly through the set up and calibration procedure. This is further facilitated by the bright multi-line 16 digit per line backlit display, which gives excellent parameter clarity under varying light conditions. The front panel LEDs give a clear status indication of the ultrasonic echo and the three multi-function SPDT relays.

Transducer design is crucial to effective level control and Hycontrol's extensive experience is embedded in their range of transducers, which includes flange and standard mounting versions with GR epoxy or PVDF face materials. At the heart of the MINIFLEX-LR is Hycontrol's proprietary Proven Ultrasonic Level Signal Extraction technology or PULSE. PULSE has been specifically developed to overcome traditional level control problems associated with unwanted or spurious echoes. Utilizing a unique window technology, the MINIFLEX recognises and then ignores signals from obstacles such as stirrers, cross beams, fill pipes or ladders.



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