CEM20 Channel Expansion Module

Intelligent Data Logging Products

Applications include:

Building & Construction
Concrete Cure Monitoring
Building Services
Geotechnical
Dam Monitoring
Land Slip
Mining
Tunnels

Scientific & Research
Thermal Profiling
Thermistor Arrays
Static Load Testing
General Industry
Refrigeration Monitoring
Oven Calibration
Process Monitoring

***FREE** Software & Technical Support*

» Compact size

» Cost effective method of adding analog channels to a data logger

» Extremely low power

» Each CEM20 multiplexes 20 analog channels into one analog channel on the data logger

Increased channel capacity

Increasing the channel capacity of the *dataTaker* DT80 range is made very easy by adding *dataTaker* Channel Expansion Modules (CEM20). Each CEM20 connects 20 universal data logging channels to the *dataTaker* data logger. A *dataTaker* CEM20 connects to one analogue channel of the *dataTaker* data logger. This effectively expands the total channel capacity of the DT80 to 300 analog inputs and the DT85 to an incredible 960 inputs. Incorporating the same dual isolation technology as the DT80 range *dataTaker* data loggers each channel of the CEM20 can be used for two isolated inputs or three common reference inputs so the maximum inputs increases further.

	Four wire Isolated Input	Two wire Isolated Input	Two wire Common Reference Input
DT80	100	200	300
DT85	320	640	960

Easy set up and connection

Connecting a channel expansion module to a *dataTaker* data logger is very easy. The CEM20 is powered directly from the *dataTaker* data logger 12V output. Analog output connections of the CEM20 connect to a analog channel of the data logger.See sample wiring diagram shown.

Solid construction and design

The construction of the CEM20 is similar to the rugged *dataTaker* DT80 range. The case is made from an anodized aluminium extrusion with powder coated steel end plates. Removable screw terminals provide flexible options for installation and maintenance.

Compatibility

The *dataTaker* CEM20 is compatible with all variants of the DT80 and DT85 data loggers series 2 and above.

Proven relays from the DT80 range provides excellent isolation between channels and resistance to over voltag damage. Maximum sample speed is 12Hz.

Internal RTD temperature reference allows very accurate thermocouple measurements.

Status LED indicates measurement activity and is a useful commissioning and troubleshooting aid.

Simple address configuration by 4-way DIP switch.

20 analog input channels for sensors supported by DT80 range loggers, includes thermocouples, VWSG, RTDs, 4-20mA loops, voltage, resistance, frequency etc.

Connections to Logger

Digital control connections: 5D & 6D in/out terminals
Power Connections: 12V & DGND twin terminals
Analog Connections: *,+ ,- ,#
Each CEM20 attached to a logger uses a separate 4 wire analog channel on the logger.
Maximum distance between logger and last CEM20: 100m
Maximum number of CEM20 units per data logger:
DT80 Variants (Series 2 and above)
DT85 Variants (Series 2 and above)

Multiplexer

Type: Relay multiplexer
Maximum Input Voltage: 30Vdc
Maximum Sampling Speed: 12Hz

System

Status LED: Sample activity
Address Selection: 4-way DIP switch. Address 1-15

Power Supply

Recommended: Logger's switched 12V output
Alternative: External regulated 12Vdc ± 5%
Power Consumption
Sampling: 0.36W (12V 30mA)
Idle: CEM20 is automatically turned off when not sampling.

Physical and Environment

Construction: Powder coated steel and anodized aluminium
Dimensions: 180 x 100 x 50mm
Weight: 0.55kg
Temperature Range: -45°C to 70°C
Humidity: 85% RH, non-condensing

Assessories Included

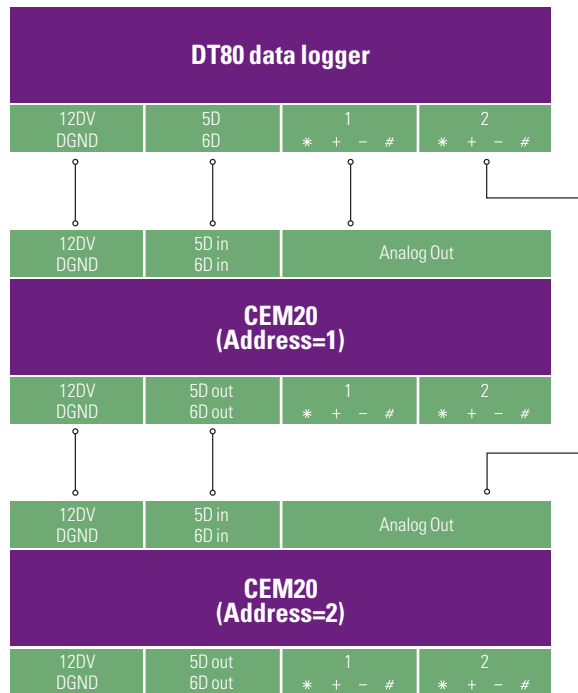Analog and control cables for connection to the
dataTaker data logger.

Diagram shows functional connections for DT80 data logger and two CEM20 units. Cable lengths should always be kept as short as possible to minimise noise and signal losses.

DT80 data logger			
12DV DGND	5D 6D	1 * + − #	2 * + − #

12DV DGND	5D in 6D in	Analog Out	
CEM20 (Address=1)			
12DV DGND	5D out 6D out	1 * + − #	2 * + − #

12DV DGND	5D in 6D in	Analog Out	
CEM20 (Address=2)			
12DV DGND	5D out 6D out	1 * + − #	2 * + − #

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