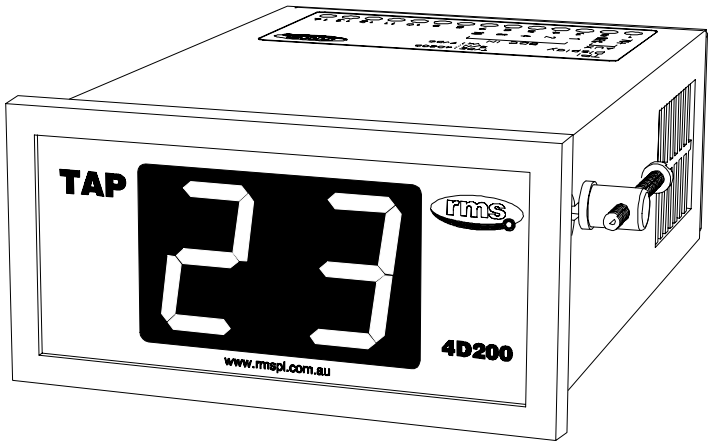
Technical Bulletin

4D200
TPI Display Module

Features

- Designed to interface with the RMS 2V200 TPI transducer
- Optional BCD / BIN input interface
- Optional BCD output signaling
- Compact panel mount case
- Bright 25mm digit red LED display
- 12V DC auxiliary supply input for use with external isolating AC power adaptor
- Double insulated high impact polystyrol case
- Simple & robust construction



Application

The 4D200 may be applied to a number of system configurations as shown below. While the 4D200 may be specified to directly accept BCD / BIN input signals, it is more convenient to simply employ an RMS 2V200 TPI transmitter unit. Refer application block diagrams 1 & 2.

This has the advantage of only requiring a two wire connection between the 2V200 mounted at the tap changer & the 4D200 display module. Refer to the 2V200 Technical bulletin for details on the other advantages this system provides.

Description

Made in Australia

The 4D200 is a compact panel mount module incorporating 2 bright 25mm LED digits for the display of a power transformer tap position over the range TAP 1 to TAP 30.

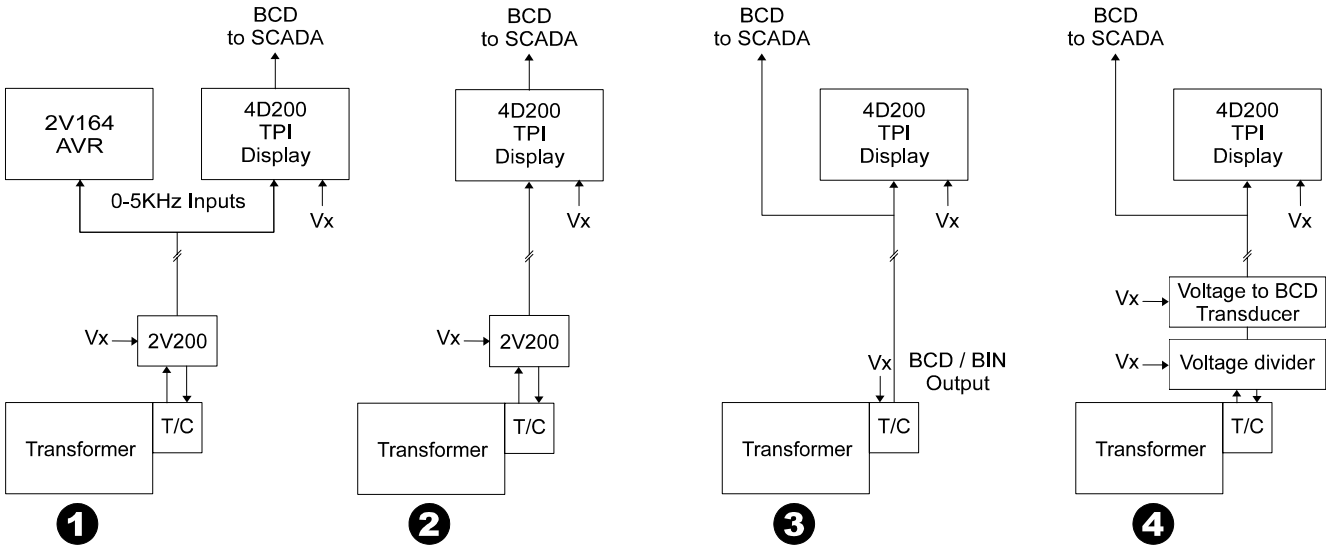
The 4D200 is specifically designed for operation with the RMS type 2V200 TPI to frequency transducer. The 2V200 provides a noise immune interface between the tap changer & the 4D200 via a 0 to 5KHZ frequency signal.

Alternatively the 4D200 may be configured to accept a BCD / BIN coded input direct from the tap changer or via a voltage to BCD / BIN transducer.

Where an RMS 2V164 Voltage Regulating Relay is being used with a 2V200 TPI Transducer, a 4D200 may be connected in parallel to provide a local easy to read tap position indication.

The 4D200 may also be optionally specified to provide a BCD output of the tap position for interface to a SCADA system.

Application Examples



CERTIFIED QUALITY MANAGEMENT SYSTEM ISO9001

Technical Data

AUXILIARY POWER SUPPLY
Vx input: 12V DC
Use separate Idec PS5R-x12 isolating power supply module to interface with AC or DC auxiliary supplies.

POWER CONSUMPTION
<4VA (3W)

4D200 INPUTS
Application examples 1 & 2
0-5KHz frequency input provided by the RMS 2V200 TPI transducer.
Application examples 3 & 4
BCD/BIN input direct from tap changer or voltage divider to BCD/BIN transducer. 50V DC or 110/125V DC input range may be specified.

BCD / BINARY SETTING
Default setting : BCD input
Changing between BCD & Binary input setting is achieved by opening the case & setting a series of DIP switches in accordance with the 4D200 User Guide.

MAXIMUM TAP SELECTION
Where the 0-5KHz frequency input is employed the 4D200 TPI display module must be set with the maximum tap number. This is achieved by opening the case & setting a series of DIP switches in accordance with the 4D200 User Guide.

4D200 DISPLAY
2 x 7 segment 25mm red LED digits display the tap position over the range tap 1 to a maximum tap 30.

4D200 BCD OUTPUTS
Optional BCD output using clean relay contacts for interface to a SCADA system.

BCD OUTPUT CONTACT RATING Order code 4D200[A][C]

Make & carry
30A AC or DC (Limits L/R=40ms & 300V max.) for 0.2s
20A AC or DC (Limits L/R=40ms & 300V max.) for 0.5s
5A AC or DC continuously

Break (Limits 5A & 300V max.)
1,250VA AC resistive
250VA at 0.4PF AC inductive
75W DC resistive
30W DC inductive L/R = 40ms
50W DC inductive L/R = 10ms

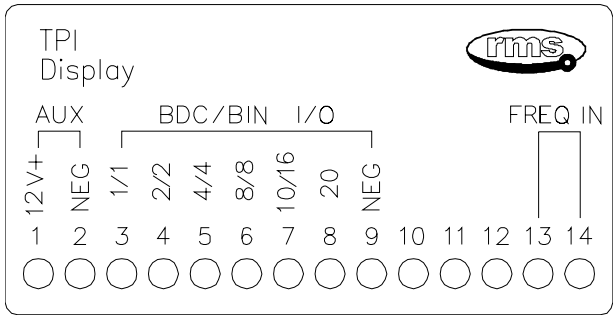
Minimum recommended load
0.5W, 10mA or 5V minimum.

OPERATING TEMPERATURE RANGE
-5 to 55 degrees C.

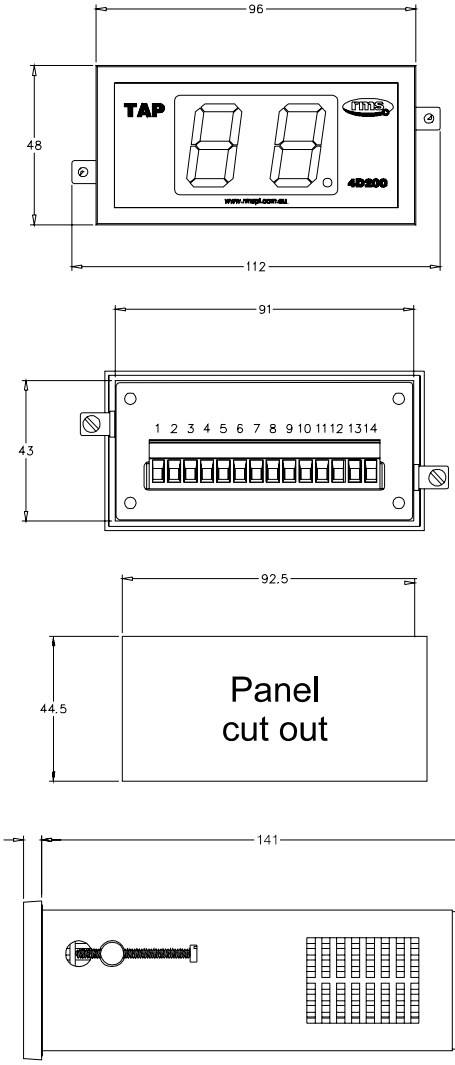
INSULATION WITHSTAND
In accordance with IEC 255-5:
2KV RMS between input & output. 1.2/50 5KV impulse input & output.

NOISE IMMUNITY
Withstands the high frequency interference test detailed in IEC 255-22-1.

4D200 Rear Panel Screw Terminals



CASE DIMENSIONS & MOUNTING



CASE TERMINALS
14 way plug in screw terminal block.

IDEC PS5R-x12 POWER SUPPLY MODULE
The Idec PS5R DIN rail mount power supply is suitable for providing the 12V DC auxiliary supplied required to operate the 4D200 TPI Display module.

Vx input: 85 to 264V AC
105 to 370V DC
Power output: 7.5, 15 or 30W continuous (Refer order codes)

Ordering Information

PS5R Power Supply Module

Generate the required ordering code as follows: e.g. PS5R A12

PS5R [1] **12**

1 OUTPUT POWER RATING

A	7.5W version to power one 4D200 module
B	15W version to power two or three 4D200 modules
C	30W version to power four 4D200 modules

4D200 TPI Display Module

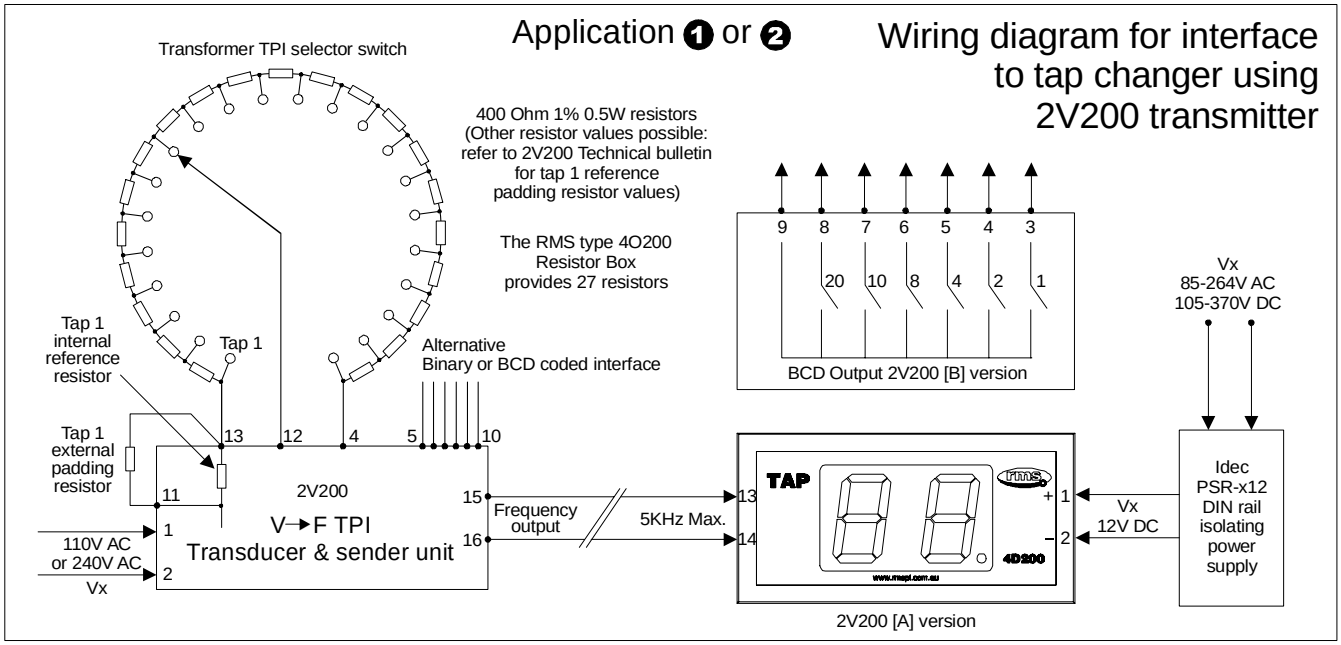
Generate the required ordering code as follows: e.g. 4D200A

4D200 [1]

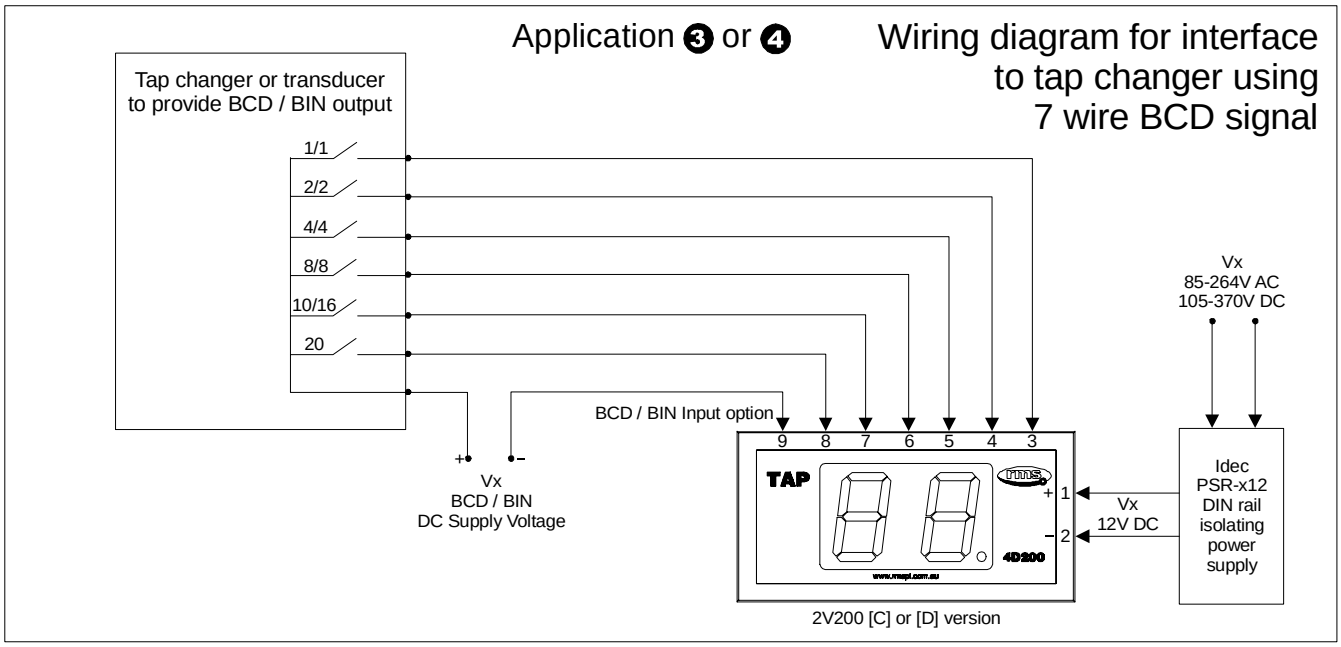
1 I/O INTERFACE SPECIFICATION

A	0-5KHz frequency input version	(Application 1 or 2)
B	[A] version with BCD output signaling	(Application 1 or 2)
C	BCD/Binary input - 50V DC input	(Application 3 or 4)
D	BCD/Binary input - 110/125V DC input	(Application 3 or 4)

Application ❶ or ❷ — Wiring diagram for interface to tap changer using 2V200 transmitter



Application ❸ or ❹ — Wiring diagram for interface to tap changer using 7 wire BCD signal



Australian Content

Unless otherwise stated the product(s) quoted are manufactured by RMS at our production facility in Melbourne Australia. Approximately 60% of our sales volume is derived from equipment manufactured in house with a local content close to 90%. Imported components such as semi-conductors are sourced from local suppliers & preference is given for reasonable stock holding to support our build requirements.

Quality Assurance

RMS holds NCSI (NATA Certification Services International), registration number 6869 for the certification of a quality assurance system to AS/NZS ISO9001-2000. Quality plans for all products involve 100% inspection and testing carried out before despatch. Further details on specific test plans, quality policy & procedures may be found in section A4 of the RMS product catalogue.

Product Packaging

Protection relays are supplied in secure individual packing cardboard boxes with moulded styrene inserts suitable for recycling. Each product & packing box is labeled with the product part number, customer name & order details.

Design References

The products & components produced by RMS are based on many years of field experience since Relays Pty Ltd was formed in 1955. A large population of equipment is in service throughout Australia, New Zealand, South Africa & South East Asia attesting to this fact. Specific product & customer reference sites may be provided on application.

Product Warranty

All utility grade protection & auxiliary relay products, unless otherwise stated, are warranted for a period of 24 months from shipment for materials & labour on a return to factory basis. Repair of products damaged through poor application or circumstances outside the product ratings will be carried out at the customer's expense.

Standard Conditions of Sale

Unless otherwise agreed RMS Standard Terms & Conditions (QF 907) shall apply to all sales. These are available on request or from our web site.

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