General Specifications

BT200
BRAIN TERMINAL

BRAIN TERMINAL

GS 1C0A11-E

As a portable terminal, the Model BT200 BRAIN TERMINAL is used in combination with equipment using brain communication for setting, changing, displaying and printing out parameters such as tag number, output mode, and range, through simultaneous communication. It also monitors I/O values and self-check results, sets constant-current output , and allows zero adjustments. The Model BT200 BRAIN TERMINAL is used by connecting it between 4 to 20 mA DC signal transmission lines of the equipment or to a dedicated connector on the ESC (Signal Conditioner Communication Card) when the system is started up or maintained.

■ FEATURES

- **Online monitoring and communication**
  The modulated communication signal does not interrupt the 4 to 20 mA DC signals during communication.
- **Common to all Yokogawa's equipment**
  The Model BT200 BRAIN TERMINAL works with all equipment that uses BRAIN communication.
- **Easy of use**
  A large display (21 characters by 8 lines) eases setup and alteration procedures in English prompting interactive sequences.
- **Diagnostics/security with error messages**
  • Self-check function
  • Security code protection of setpoints
  • Low battery voltage alarm
  • Automatic power-off
- **Printer (BT200-P00)**
  Printer prints out tag numbers and other parameters on the spot.
- **Intrinsic safety (Only for a without printer type)**
  CSA intrinsically safe approval.

■ STANDARD SPECIFICATIONS

Equipment Specifications

Applicable Equipment Remove:
DPharp, UNIΔMARKII/COM, YA63
ADMAG, ADMAG AE
YEWFLO Style E
YT200
JUXTA, Signal Conditioner

Communication Signal Connection:
Dedicated cable, 1.1 m long (3.6 ft)

Communication Line:
Line length: Up to 2 km (1.24 mile) (0.75 to 1.25 mm^2 instrumentation cable)
Load resistance: 250 to 600 Ω (including cable resistance)
Load capacitance: 0.22 μF or less
Load inductance: 3.3 mH or less
Power line spacing: 15 cm (6 inch) or more (Avoid parallel wiring.)

Display:
LCD dot matrix, 21 characters×8 lines

Controls:
Membrane switches (four function keys, 20 general operation keys, and one power switch)

Printer (BT200-P00):
Thermal paper type

Power Supply:
Five AA 1.5 V dry alkali batteries (LR6/AM3 (N))
For Intrinsic safety type; Five designated batteries (see OPTIONS)

Dimensions:
BT200-N00 . . . 228×110×51 mm (9.0×4.3×2.0 inch)
BT200-P00 . . . 321×110×61 mm (12.6×4.3×2.4 inch)

Approximate Weight:
BT200-N00 . . . 510 g (1.12 lb)
BT200-P00 . . . 700 g (1.54 lb)

■ Functional Specifications

Basic Functions:
- Setup, alteration, and display of parameters BRAIN communication.
  : constant current output
  : Zero point adjustment

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GS 1C0A11-E

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Additional Functions:

- Batch upload/download of data
- Setpoint Protection:
  Security code entry is required to alter setpoints.
- Battery Alarm:
  An alarm message appearing on the LCD announces low battery voltages.
- Automatic Power-off:
  The terminal is switched off automatically if no key access is made for approximately 5 minutes.
- LCD contrast adjustment
- Printing (BT200-P00)

Printout Information

- All parameter lists
- Parameter list within each menu item
- Setup change data list
- Uploaded data list
- Display images
- Self check list

■ EMC Conformity Standards:

For EMI (Emission)-EN55011: 1991

Test Item	Frequency Range	Basic Standard
Applicable Electromagnetic Radiation Disturbance	30 – 1000 MHz	EN55011 Class A Group 1

T01E.EPS

For EMS (Immunity)-EN50082-2: 1995

No.	Test item	Test specification	Basic standard	Performance criteria
1	Electrostatic discharge	4 kV (contact) 8 kV (air)	IEC 1000-4-2: 1995 Level 3	B
2	Radio - frequency electromagnetic field Amplitude modulated	80 MHz - 1 GHz 10 V/m (unmodulated) 80 % AM	IEC 1000-4-3: 1995 Level 3	A
3	Radio - frequency electromagnetic field Pulse modulated	900 MHz 10 V/m (unmodulated) Duty 50 %, 200 Hz REP.		A
4	Fast transients common mode	2 kV, 5/50 (Tr/Th) ns 5 kHz REP.	IEC 1000-4-4: 1995 Level 3	B
5	Radio-frequency common mode Amplitude modulated	150 kHz - 80 MHz 10 V (unmodulated) 80 % AM (1 kHz) Source Impedance 150 Ω	Draft IEC 1000-4-6: 1995 Level 3	A

T02E.EPS

Note: Definition of performance criterion A
This apparatus continues to communicate with the transmitter and to display or print out parameters during the test.
Note: Definition of performance criterion B
This apparatus continues to operate without falling in uncontrollable condition during the test.
No change of actual operating state or stored data is allowed.

■ NORMAL OPERATION CONDITIONS

Ambient Temperature:
-15 to 55 °C (with a printer: 0 to 50 °C)

■ STORAGE CONDITIONS

Ambient Temperature:
0 to 50 °C

■ ACCESSORIES

- **Communication Cable:**
  Two cables, one with alligator clips and one with IC clips (both snap-removable)
- **Five AA 1.5 V dry alkali batteries**
- **Handy carry case**

■ MODEL AND CODE

Model	Suffix Codes	Description
BT200	. . . . .	BRAIN Terminal
Printer	**-N**	With no printer
	-P	With printer
–	**00**	Always 00
Options		/ □□

T03E.EPS

■ PART NUMBERS

Item		Parts No.
Communication Cable	With IC clips	F9182EA
	With alligator clips	F9182EB
	with 3-pin connector	F9182ED
	with 5-pin connector	F9182EE
Roll paper		F9182DS
Handy carry case		F9182BP
Printer Assembly		F9182AS

T04E.EPS

■ OPTIONS

Item	Description	Code
Communication Cable with 5-pin connector **(*1)**	for SC (Signal conditioner)	/C1
Intrinsic Safety type **(*1)** **(*2)** **(*3)**	CSA Intrinsically safe approval Class I, Groups A,B,C and D Temp. code T4 Vmax (in)=30 V, Imax (in)=165 mA, Pmax (in)=0.9 W, Ci=0, Li=730 μF Vmax (out)=2 V, Imax (out)=22 mA, Pmax (out)=11 mW, Ca=3000 μF, La=30 mH	/CS1

T05E.EPS

*1: Optional code /C1 cannot be combined with /CS1

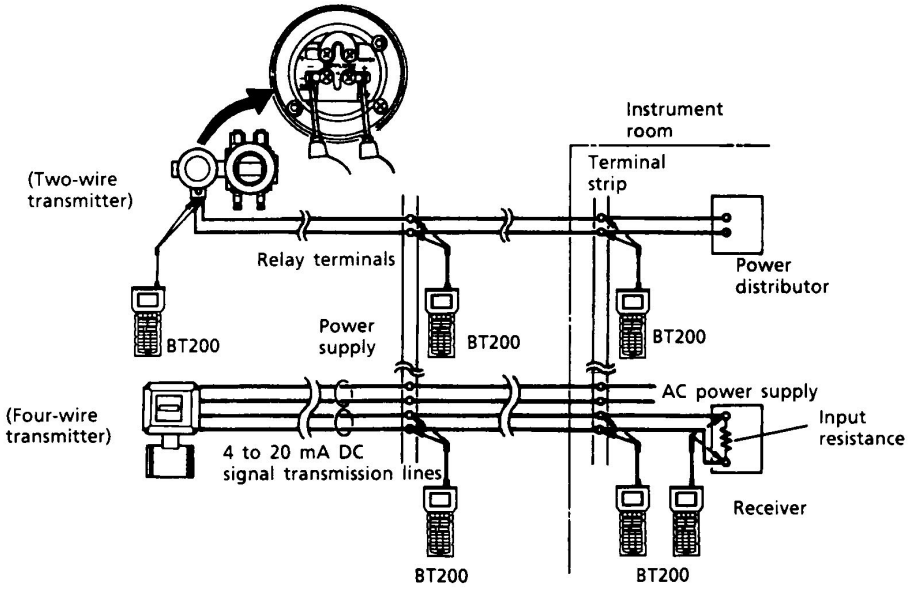
*2: Applicable only for Model BT200-N00.
The battery used in BT200 must be as follows.

Manufacture	Model	Type	Voltage
DURACELL	MN1500 (PC1500)	Alkaline-maganese	1.5 V

F01E.EPS

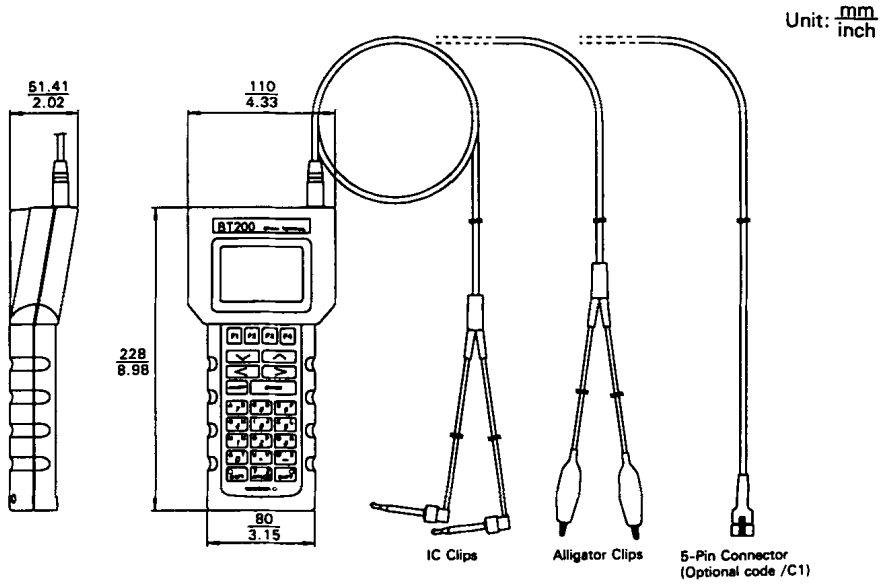
*3: Safety Barriers Parameters
Ioc≦28 V, Isc≦143 mA, Pmax≦889 mW
Intrinsically Safe Apparatus Connected with BT200
Vmax≧(Voc of Safety Barrier)+2 V
Imax≧(Isc of Safety Barrier)+22 mA
Pmax≧(Pmax of Safety Barrier)+11 mW
Current CSA Intrinsically safe type instruments which can combine with BT200-N00/CS1.
• DPharp EJA series ex) Model EJA110-DM . . . . /CS1
• YT200 ex) Model YT200 . . . . / CS1

■ CONNECTION METHOD

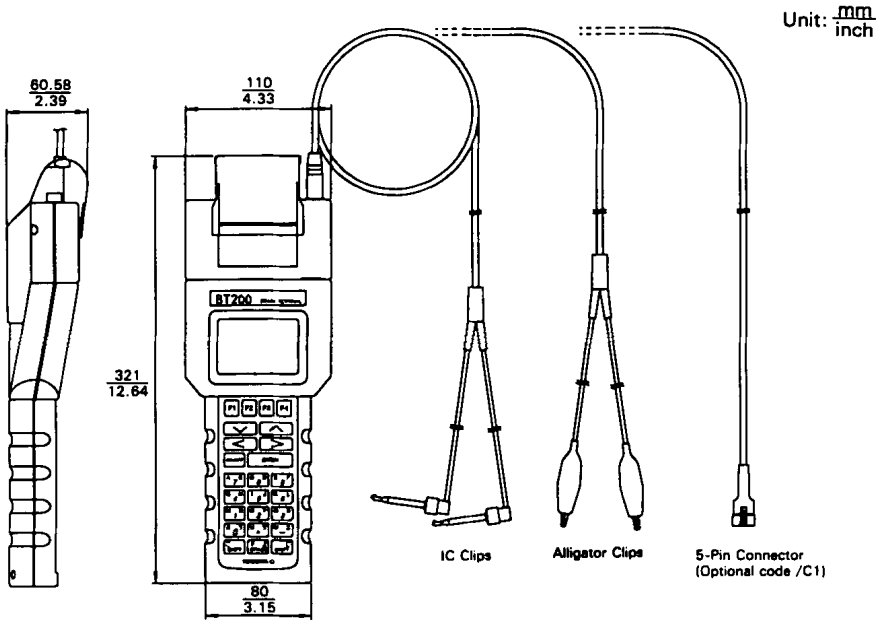


■ DIMENSIONS

Model BT200-N00



Model BT200-P00



Ordering Information

1. Model and suffix codes

<Associated Equipment>

DPharp . . . . . GS 1C20B1-E
DPharp EJA . . . . . GS 1C22B1-E
UNIΔ MARKII /COM . . . . . GS 1C5N0-E
YA63 . . . . . GS 1C5B6-E
ADMAG . . . . . GS 1E6A0-E
ADMAG AE . . . . . GS 1E7B0-E
YEWFLO Style E . . . . . GS 1F2B4-E
YT200 . . . . . GS 6B8B2-E
Signal conditioner . . . . . GS 34A9N11-01E