

Bill of Materials

TI DESIGNS

 TIPD166 Single Supply Analog Input Module Reference Design with
 16-Bit, 8-Channel ADC for PLC

| Designator | Quantity | Value | Manufacturer | PartNumber | Description |
|--|----------|---------|---------------------|-------------------------|---|
| IPCBoard | 1 | | Any | 6580143 | Printed Circuit Board |
| C1, C2, C3, C6, C7 | 5 | 0.1uF | AVX | 06033C104JAT2A | CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603 |
| C10 | 1 | 1uF | Kemet | C0603C105K4PACTU | CAP, CERM, 1uF, 16V, +/-10%, X5R, 0603 |
| C11 | 1 | 3000pF | MuRata | GRM1885C1H302JA01D | CAP, CERM, 3000pF, 50V, +/-5%, COG/NPO, 0603 |
| C16 | 1 | 0.022uF | Kemet | C0603C223K3RACTU | CAP, CERM, 0.022uF, 25V, +/-10%, X7R, 0603 |
| C17 | 1 | 10uF | TDK | C1608X5R1A106M | CAP, CERM, 10uF, 10V, +/-20%, X5R, 0603 |
| C24 | 1 | 1uF | Kemet | C0603C105K8PACTU | CAP, CERM, 1uF, 10V, +/-10%, X5R, 0603 |
| C25 | 1 | 2.2uF | Kemet | C0805C225K4RACTU | CAP, CERM, 2.2uF, 16V, +/-10%, X7R, 0805 |
| C26 | 1 | 0.01uF | TDK | C1608COG1H103J080AA | CAP, 10000pF, 0603, 5%, 50V, COG |
| C4 | 1 | 220pF | AVX | 06031C221KAT2A | CAP, CERM, 220pF, 100V, +/-10%, X7R, 0603 |
| C5 | 1 | 10uF | Kemet | C0603C106M9PACTU | CAP, CERM, 10uF, 6.3V, +/-20%, X5R, 0603 |
| C62 | 1 | 10uF | MuRata | GRM21BR71A106KE51L | CAP, CERM, 10uF, 10V, +/-10%, X7R, 0805 |
| C64 | 1 | 0.1uF | AVX | 06035C104KAT2A | CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603 |
| C8 | 1 | 22uF | TDK | C3225X7R1C226M | CAP, CERM, 22uF, 16V, +/-20%, X7R, 1210 |
| C9, C63 | 2 | 1uF | TDK | C1608X7R1C105K | CAP, CERM, 1uF, 16V, +/-10%, X7R, 0603 |
| D9 | 1 | 30V | Diodes Inc. | BAT54C-7-F | Diode, Schottky, 30V, 0.2A, SOT-23 |
| FID1, FID2, FID3, FID4, FID5, FID6 | 6 | | N/A | N/A | Fiducial mark. There is nothing to buy or mount. |
| H1, H2, H3, H4 | 4 | | 3M | SJ-5303 (CLEAR) | Bump-on, Hemisphere, 0.44 X 0.20, Clear |
| J1 | 1 | | Samtec | TSW-104-07-G-S | Header, TH, 100mil, 4x1, Gold plated, 230 mil above insulator |
| J19 | 1 | | Samtec, Inc. | ERF8-025-01-L-D-RA-L-TR | Receptacle, Micro High Speed Socket Strip, 0.8mm, 25x2, R/A, SMT |
| J2, J3, J4, J5, J6, J7, J9, J10, J15, J16, J21, J22 | 12 | | Samtec | TSW-102-07-G-S | Header, TH, 100mil, 2x1, Gold plated, 230 mil above insulator |
| J20 | 1 | | Molex | 502570-0893 | SD Memory Card Connector |
| J32 | 1 | | On-Shore Technology | ED555/2DS | Terminal Block, 6A, 3.5mm Pitch, 2-Pos, TH |
| J8, J11 | 2 | | Samtec | TSW-104-07-G-D | Header, TH, 100mil, 4x2, Gold plated, 230 mil above insulator |
| R10, R14, R16, R86, R87, R88, R89, R90, R91, R93, R128 | 11 | 49.9 | Vishay-Dale | CRCW040249R9FKED | RES, 49.9 ohm, 1%, 0.063W, 0402 |
| R13, R15, R18 | 3 | 47k | Vishay-Dale | CRCW040247K0JNED | RES, 47k ohm, 5%, 0.063W, 0402 |
| R19 | 1 | 4.12k | Yageo America | RT0603BRD074K12L | RES, 4.12k ohm, 0.1%, 0.1W, 0603 |
| R2, R4 | 2 | 100k | Panasonic | ERJ-3EKF1003V | RES, 100k ohm, 1%, 0.1W, 0603 |
| R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R34, R35, R37, R38, R40, R41 | 16 | 0 | Vishay-Dale | CRCW04020000Z0ED | RES, 0 ohm, 5%, 0.063W, 0402 |
| R3 | 1 | 0 | Vishay-Dale | CRCW06030000Z0EA | RES, 0 ohm, 5%, 0.1W, 0603 |
| R33, R36, R39, R42, R43, R44, R45, R46 | 8 | 249 | Susumu Co Ltd | RG1608P-2490-B-T5 | RES, 249 ohm, 0.1%, 0.1W, 0603 |
| R47, R48, R92, R97, R101, R104 | 6 | 0 | Yageo America | RC0402JR-070RL | RES, 0 ohm, 5%, 0.063W, 0402 |
| R5, R11, R21 | 3 | 2.00k | Yageo America | RT0603BRD072KL | RES, 2.00k ohm, 0.1%, 0.1W, 0603 |
| R6, R8 | 2 | 499 | Vishay-Dale | CRCW0402499RFKED | RES, 499 ohm, 1%, 0.063W, 0402 |
| R7, R94, R95, R96, R98, R99, R100, R102, R103, R107 | 10 | NI | NI | NI | Resistor, Uninstalled |
| R79, R80, R81, R82, R83, R84, R85 | 7 | 10.0k | Vishay-Dale | CRCW040210K0FKED | RES, 10.0k ohm, 1%, 0.063W, 0402 |
| R9, R22 | 2 | 4.02k | Yageo America | RT0402BRD074K02L | RES, 4.02k ohm, 0.1%, 0.063W, 0402 |
| SD1 | 1 | | SanDisk | SDSDQ-002G | SanDisk MicroSD Card, 2GB |
| SH-J2, SH-J3, SH-J4 | 3 | 1x2 | 3M | 969102-0000-DA | Shunt, 100mil, Gold plated, Black |
| U1, U4 | 2 | | Texas Instruments | OPA376AIDBV | Low-Noise, Low Quiescent Current, Precision Operational Amplifier e-trim Series, DBV0005A |

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|-----|---|--------------|-------------------|------------------|--|
| | | | | | |
| U11 | 1 | AT24C02B | Atmel | AT24C02B | IC, 2K, Serial EEPROM |
| U13 | 1 | | Texas Instruments | TPS7A6650QDGNRQ1 | High-Voltage Ultralow-Iq Low-Dropout Regulator, DGN0008D |
| U2 | 1 | | TI | ADS8688IDBT | 16 bit 500KSPS 8 Channel SAR ADC |
| U3 | 1 | OPA320AIDBVR | TI | OPA320AIDBVR | IC, Precision, 20MHz, 0.9pA, Low-Noise, RRIO, CMOS Op-Amp |
| U5 | 1 | | Texas Instruments | INA333AIDGK | Micro-Power (50mA), Zero-Drift, Rail-to-Rail Out Instrumentation Amplifier |

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