

GOVERNMENT APPROVED TEST LABORATORY
IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **25 Mar 2021**
*Expiry date: **25 Mar 2024**
Page 1 of 9
Issue: 6

Ex – Type Examination Certificate

Certificate Number: **S-XPL/13.1598 X**
Equipment: **Valve Position Monitors**
Model / Type: **Quartz QN, QX and QC Series**
Applicant: **Neles South Africa (Pty) Ltd**
PO Box 264114
Three Rivers
1935
Manufacturer: **Neles USA Inc. dba StoneL**
Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
Neles South Africa (Pty) Ltd
Identified by Inspection Authority number
S-XPL/13.1598 X

And as described in the Explolabs file number **XPL/14841/13.1598** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

SANS 60079-0: 2019 Ed 6 Explosive atmospheres Part 0: Equipment — General requirements
IEC 60079-0: 2017 Ed 7
SANS 60079-11: 2012 Ed 4 Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-11: 2011 Ed 6

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL)	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
	Group			
Very high	Ga Group II	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 0, 1 and 2	T6 (85°C) ... T1 (450°C)

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

- SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
- Any conditions mentioned in the above report;
- Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
- Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- A revision certificate replaces all previous version of the certificate.
- * - Only covers equipment Imported between the "Issued" and "Expire" dates.
- If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

This certificate supersedes all previous documents bearing the reference no XPL/14841/13.1598 Issue 5.

DOCUMENT No: XPL0213 RELEASE DATE: 29/05/2018 REV: 7

1. GENERAL

The marking of the Valve Position Monitors shall include the following:

QN and QX Series:

Ex ia IIC T6...T1 Ga Ta*, IP66 IP67

QC Series:

Ex ia IIC T6...T1 Ga Ta*, IP66

QNabcdef-g. Valve Position Monitor.

Ex ia IIC T6...T1 Ga Ta*, IP66 IP67

- a = Function: 2J, 4J, 5J, 7J, BJ, CJ, 2M, 4M, 5M, 7M, BM, CM, 5O, 7O, TO, BO, CO, 2N, 4N, 5N, 6N, 7N, TN, BN, CN, 2A, 4A, 5A, 7A, TA, BA, CA, 2B, 4B, 5B, 7B, 4C, 5C, 7C, 4D, 5D, 7D, 4E, 5E, 7E, 4F, 5F, 7F, 4G, 5G, 7G, 4H, 5H, 7H, 4I, 5I, 7I, 4J, 5J, 7J, 4K, 5K, 7K, 4L, 5L, 7L, 4M, 5M, 7M, 4N, 5N, 7N, 4O, 5O, 7O, 4P, 5P, 7P, 4Q, 5Q, 7Q, 4R, 5R, 7R, 4S, 5S, 7S, 4T, 5T, 7T, 4U, 5U, 7U, 4V, 5V, 7V, 4W, 5W, 7W, 4X, 5X, 7X, 4Y, 5Y, 7Y, 4Z, 5Z, 7Z, 4AA, 5AA, 7AA, 4AB, 5AB, 7AB, 4AC, 5AC, 7AC, 4AD, 5AD, 7AD, 4AE, 5AE, 7AE, 4AF, 5AF, 7AF, 4AG, 5AG, 7AG, 4AH, 5AH, 7AH, 4AI, 5AI, 7AI, 4AJ, 5AJ, 7AJ, 4AK, 5AK, 7AK, 4AL, 5AL, 7AL, 4AM, 5AM, 7AM, 4AN, 5AN, 7AN, 4AO, 5AO, 7AO, 4AP, 5AP, 7AP, 4AQ, 5AQ, 7AQ, 4AR, 5AR, 7AR, 4AS, 5AS, 7AS, 4AT, 5AT, 7AT, 4AU, 5AU, 7AU, 4AV, 5AV, 7AV, 4AW, 5AW, 7AW, 4AX, 5AX, 7AX, 4AY, 5AY, 7AY, 4AZ, 5AZ, 7AZ, 4BA, 5BA, 7BA, 4BB, 5BB, 7BB, 4BC, 5BC, 7BC, 4BD, 5BD, 7BD, 4BE, 5BE, 7BE, 4BF, 5BF, 7BF, 4BG, 5BG, 7BG, 4BH, 5BH, 7BH, 4BI, 5BI, 7BI, 4BJ, 5BJ, 7BJ, 4BK, 5BK, 7BK, 4BL, 5BL, 7BL, 4BM, 5BM, 7BM, 4BN, 5BN, 7BN, 4BO, 5BO, 7BO, 4BP, 5BP, 7BP, 4BQ, 5BQ, 7BQ, 4BR, 5BR, 7BR, 4BS, 5BS, 7BS, 4BT, 5BT, 7BT, 4BU, 5BU, 7BU, 4BV, 5BV, 7BV, 4BW, 5BW, 7BW, 4BX, 5BX, 7BX, 4BY, 5BY, 7BY, 4BZ, 5BZ, 7BZ, 4CA, 5CA, 7CA, 4CB, 5CB, 7CB, 4CC, 5CC, 7CC, 4CD, 5CD, 7CD, 4CE, 5CE, 7CE, 4CF, 5CF, 7CF, 4CG, 5CG, 7CG, 4CH, 5CH, 7CH, 4CI, 5CI, 7CI, 4CJ, 5CJ, 7CJ, 4CK, 5CK, 7CK, 4CL, 5CL, 7CL, 4CM, 5CM, 7CM, 4CN, 5CN, 7CN, 4CO, 5CO, 7CO, 4CP, 5CP, 7CP, 4CQ, 5CQ, 7CQ, 4CR, 5CR, 7CR, 4CS, 5CS, 7CS, 4CT, 5CT, 7CT, 4CU, 5CU, 7CU, 4CV, 5CV, 7CV, 4CW, 5CW, 7CW, 4CX, 5CX, 7CX, 4CY, 5CY, 7CY, 4CZ, 5CZ, 7CZ, 4DA, 5DA, 7DA, 4DB, 5DB, 7DB, 4DC, 5DC, 7DC, 4DD, 5DD, 7DD, 4DE, 5DE, 7DE, 4DF, 5DF, 7DF, 4DG, 5DG, 7DG, 4DH, 5DH, 7DH, 4DI, 5DI, 7DI, 4DJ, 5DJ, 7DJ, 4DK, 5DK, 7DK, 4DL, 5DL, 7DL, 4DM, 5DM, 7DM, 4DN, 5DN, 7DN, 4DO, 5DO, 7DO, 4DP, 5DP, 7DP, 4DQ, 5DQ, 7DQ, 4DR, 5DR, 7DR, 4DS, 5DS, 7DS, 4DT, 5DT, 7DT, 4DU, 5DU, 7DU, 4DV, 5DV, 7DV, 4DW, 5DW, 7DW, 4DX, 5DX, 7DX, 4DY, 5DY, 7DY, 4DZ, 5DZ, 7DZ, 4EA, 5EA, 7EA, 4EB, 5EB, 7EB, 4EC, 5EC, 7EC, 4ED, 5ED, 7ED, 4EE, 5EE, 7EE, 4EF, 5EF, 7EF, 4EG, 5EG, 7EG, 4EH, 5EH, 7EH, 4EI, 5EI, 7EI, 4EJ, 5EJ, 7EJ, 4EK, 5EK, 7EK, 4EL, 5EL, 7EL, 4EM, 5EM, 7EM, 4EN, 5EN, 7EN, 4EO, 5EO, 7EO, 4EP, 5EP, 7EP, 4EQ, 5EQ, 7EQ, 4ER, 5ER, 7ER, 4ES, 5ES, 7ES, 4ET, 5ET, 7ET, 4EU, 5EU, 7EU, 4EV, 5EV, 7EV, 4EW, 5EW, 7EW, 4EX, 5EX, 7EX, 4EY, 5EY, 7EY, 4EZ, 5EZ, 7EZ, 4FA, 5FA, 7FA, 4FB, 5FB, 7FB, 4FC, 5FC, 7FC, 4FD, 5FD, 7FD, 4FE, 5FE, 7FE, 4FF, 5FF, 7FF, 4FG, 5FG, 7FG, 4FH, 5FH, 7FH, 4FI, 5FI, 7FI, 4FJ, 5FJ, 7FJ, 4FK, 5FK, 7FK, 4FL, 5FL, 7FL, 4FM, 5FM, 7FM, 4FN, 5FN, 7FN, 4FO, 5FO, 7FO, 4FP, 5FP, 7FP, 4FQ, 5FQ, 7FQ, 4FR, 5FR, 7FR, 4FS, 5FS, 7FS, 4FT, 5FT, 7FT, 4FU, 5FU, 7FU, 4FV, 5FV, 7FV, 4FW, 5FW, 7FW, 4FX, 5FX, 7FX, 4FY, 5FY, 7FY, 4FZ, 5FZ, 7FZ, 4GA, 5GA, 7GA, 4GB, 5GB, 7GB, 4GC, 5GC, 7GC, 4GD, 5GD, 7GD, 4GE, 5GE, 7GE, 4GF, 5GF, 7GF, 4GG, 5GG, 7GG, 4GH, 5GH, 7GH, 4GI, 5GI, 7GI, 4GJ, 5GJ, 7GJ, 4GK, 5GK, 7GK, 4GL, 5GL, 7GL, 4GM, 5GM, 7GM, 4GN, 5GN, 7GN, 4GO, 5GO, 7GO, 4GP, 5GP, 7GP, 4GQ, 5GQ, 7GQ, 4GR, 5GR, 7GR, 4GS, 5GS, 7GS, 4GT, 5GT, 7GT, 4GU, 5GU, 7GU, 4GV, 5GV, 7GV, 4GW, 5GW, 7GW, 4GX, 5GX, 7GX, 4GY, 5GY, 7GY, 4GZ, 5GZ, 7GZ, 4HA, 5HA, 7HA, 4HB, 5HB, 7HB, 4HC, 5HC, 7HC, 4HD, 5HD, 7HD, 4HE, 5HE, 7HE, 4HF, 5HF, 7HF, 4HG, 5HG, 7HG, 4HH, 5HH, 7HH, 4HI, 5HI, 7HI, 4HJ, 5HJ, 7HJ, 4HK, 5HK, 7HK, 4HL, 5HL, 7HL, 4HM, 5HM, 7HM, 4HN, 5HN, 7HN, 4HO, 5HO, 7HO, 4HP, 5HP, 7HP, 4HQ, 5HQ, 7HQ, 4HR, 5HR, 7HR, 4HS, 5HS, 7HS, 4HT, 5HT, 7HT, 4HU, 5HU, 7HU, 4HV, 5HV, 7HV, 4HW, 5HW, 7HW, 4HX, 5HX, 7HX, 4HY, 5HY, 7HY, 4HZ, 5HZ, 7HZ, 4IA, 5IA, 7IA, 4IB, 5IB, 7IB, 4IC, 5IC, 7IC, 4ID, 5ID, 7ID, 4IE, 5IE, 7IE, 4IF, 5IF, 7IF, 4IG, 5IG, 7IG, 4IH, 5IH, 7IH, 4II, 5II, 7II, 4IJ, 5IJ, 7IJ, 4IK, 5IK, 7IK, 4IL, 5IL, 7IL, 4IM, 5IM, 7IM, 4IN, 5IN, 7IN, 4IO, 5IO, 7IO, 4IP, 5IP, 7IP, 4IQ, 5IQ, 7IQ, 4IR, 5IR, 7IR, 4IS, 5IS, 7IS, 4IT, 5IT, 7IT, 4IU, 5IU, 7IU, 4IV, 5IV, 7IV, 4IW, 5IW, 7IW, 4IX, 5IX, 7IX, 4IY, 5IY, 7IY, 4IZ, 5IZ, 7IZ, 4JA, 5JA, 7JA, 4JB, 5JB, 7JB, 4JC, 5JC, 7JC, 4JD, 5JD, 7JD, 4JE, 5JE, 7JE, 4JF, 5JF, 7JF, 4JG, 5JG, 7JG, 4JH, 5JH, 7JH, 4JI, 5JI, 7JI, 4JJ, 5JJ, 7JJ, 4JK, 5JK, 7JK, 4JL, 5JL, 7JL, 4JM, 5JM, 7JM, 4JN, 5JN, 7JN, 4JO, 5JO, 7JO, 4JP, 5JP, 7JP, 4JQ, 5JQ, 7JQ, 4JR, 5JR, 7JR, 4JS, 5JS, 7JS, 4JT, 5JT, 7JT, 4JU, 5JU, 7JU, 4JV, 5JV, 7JV, 4JW, 5JW, 7JW, 4JX, 5JX, 7JX, 4JY, 5JY, 7JY, 4JZ, 5JZ, 7JZ, 4KA, 5KA, 7KA, 4KB, 5KB, 7KB, 4KC, 5KC, 7KC, 4KD, 5KD, 7KD, 4KE, 5KE, 7KE, 4KF, 5KF, 7KF, 4KG, 5KG, 7KG, 4KH, 5KH, 7KH, 4KI, 5KI, 7KI, 4KJ, 5KJ, 7KJ, 4KK, 5KK, 7KK, 4KL, 5KL, 7KL, 4KM, 5KM, 7KM, 4KN, 5KN, 7KN, 4KO, 5KO, 7KO, 4KP, 5KP, 7KP, 4KQ, 5KQ, 7KQ, 4KR, 5KR, 7KR, 4KS, 5KS, 7KS, 4KT, 5KT, 7KT, 4KU, 5KU, 7KU, 4KV, 5KV, 7KV, 4KW, 5KW, 7KW, 4KX, 5KX, 7KX, 4KY, 5KY, 7KY, 4KZ, 5KZ, 7KZ, 4LA, 5LA, 7LA, 4LB, 5LB, 7LB, 4LC, 5LC, 7LC, 4LD, 5LD, 7LD, 4LE, 5LE, 7LE, 4LF, 5LF, 7LF, 4LG, 5LG, 7LG, 4LH, 5LH, 7LH, 4LI, 5LI, 7LI, 4LJ, 5LJ, 7LJ, 4LK, 5LK, 7LK, 4LL, 5LL, 7LL, 4LM, 5LM, 7LM, 4LN, 5LN, 7LN, 4LO, 5LO, 7LO, 4LP, 5LP, 7LP, 4LQ, 5LQ, 7LQ, 4LR, 5LR, 7LR, 4LS, 5LS, 7LS, 4LT, 5LT, 7LT, 4LU, 5LU, 7LU, 4LV, 5LV, 7LV, 4LW, 5LW, 7LW, 4LX, 5LX, 7LX, 4LY, 5LY, 7LY, 4LZ, 5LZ, 7LZ, 4MA, 5MA, 7MA, 4MB, 5MB, 7MB, 4MC, 5MC, 7MC, 4MD, 5MD, 7MD, 4ME, 5ME, 7ME, 4MF, 5MF, 7MF, 4MG, 5MG, 7MG, 4MH, 5MH, 7MH, 4MI, 5MI, 7MI, 4MJ, 5MJ, 7MJ, 4MK, 5MK, 7MK, 4ML, 5ML, 7ML, 4MM, 5MM, 7MM, 4MN, 5MN, 7MN, 4MO, 5MO, 7MO, 4MP, 5MP, 7MP, 4MQ, 5MQ, 7MQ, 4MR, 5MR, 7MR, 4MS, 5MS, 7MS, 4MT, 5MT, 7MT, 4MU, 5MU, 7MU, 4MV, 5MV, 7MV, 4MW, 5MW, 7MW, 4MX, 5MX, 7MX, 4MY, 5MY, 7MY, 4MZ, 5MZ, 7MZ, 4NA, 5NA, 7NA, 4NB, 5NB, 7NB, 4NC, 5NC, 7NC, 4ND, 5ND, 7ND, 4NE, 5NE, 7NE, 4NF, 5NF, 7NF, 4NG, 5NG, 7NG, 4NH, 5NH, 7NH, 4NI, 5NI, 7NI, 4NJ, 5NJ, 7NJ, 4NK, 5NK, 7NK, 4NL, 5NL, 7NL, 4NM, 5NM, 7NM, 4NO, 5NO, 7NO, 4NP, 5NP, 7NP, 4NQ, 5NQ, 7NQ, 4NR, 5NR, 7NR, 4NS, 5NS, 7NS, 4NT, 5NT, 7NT, 4NU, 5NU, 7NU, 4NV, 5NV, 7NV, 4NW, 5NW, 7NW, 4NX, 5NX, 7NX, 4NY, 5NY, 7NY, 4NZ, 5NZ, 7NZ, 4OA, 5OA, 7OA, 4OB, 5OB, 7OB, 4OC, 5OC, 7OC, 4OD, 5OD, 7OD, 4OE, 5OE, 7OE, 4OF, 5OF, 7OF, 4OG, 5OG, 7OG, 4OH, 5OH, 7OH, 4OI, 5OI, 7OI, 4OJ, 5OJ, 7OJ, 4OK, 5OK, 7OK, 4OL, 5OL, 7OL, 4OM, 5OM, 7OM, 4ON, 5ON, 7ON, 4OO, 5OO, 7OO, 4OP, 5OP, 7OP, 4OQ, 5OQ, 7OQ, 4OR, 5OR, 7OR, 4OS, 5OS, 7OS, 4OT, 5OT, 7OT, 4OU, 5OU, 7OU, 4OV, 5OV, 7OV, 4OW, 5OW, 7OW, 4OX, 5OX, 7OX, 4OY, 5OY, 7OY, 4OZ, 5OZ, 7OZ, 4PA, 5PA, 7PA, 4PB, 5PB, 7PB, 4PC, 5PC, 7PC, 4PD, 5PD, 7PD, 4PE, 5PE, 7PE, 4PF, 5PF, 7PF, 4PG, 5PG, 7PG, 4PH, 5PH, 7PH, 4PI, 5PI, 7PI, 4PJ, 5PJ, 7PJ, 4PK, 5PK, 7PK, 4PL, 5PL, 7PL, 4PM, 5PM, 7PM, 4PN, 5PN, 7PN, 4PO, 5PO, 7PO, 4PP, 5PP, 7PP, 4PQ, 5PQ, 7PQ, 4PR, 5PR, 7PR, 4PS, 5PS, 7PS, 4PT, 5PT, 7PT, 4PU, 5PU, 7PU, 4PV, 5PV, 7PV, 4PW, 5PW, 7PW, 4PX, 5PX, 7PX, 4PY, 5PY, 7PY, 4PZ, 5PZ, 7PZ, 4QA, 5QA, 7QA, 4QB, 5QB, 7QB, 4QC, 5QC, 7QC, 4QD, 5QD, 7QD, 4QE, 5QE, 7QE, 4QF, 5QF, 7QF, 4QG, 5QG, 7QG, 4QH, 5QH, 7QH, 4QI, 5QI, 7QI, 4QJ, 5QJ, 7QJ, 4QK, 5QK, 7QK, 4QL, 5QL, 7QL, 4QM, 5QM, 7QM, 4QN, 5QN, 7QN, 4QO, 5QO, 7QO, 4QP, 5QP, 7QP, 4QQ, 5QQ, 7QQ, 4QR, 5QR, 7QR, 4QS, 5QS, 7QS, 4QT, 5QT, 7QT, 4QU, 5QU, 7QU, 4QV, 5QV, 7QV, 4QW, 5QW, 7QW, 4QX, 5QX, 7QX, 4QY, 5QY, 7QY, 4QZ, 5QZ, 7QZ, 4RA, 5RA, 7RA, 4RB, 5RB, 7RB, 4RC, 5RC, 7RC, 4RD, 5RD, 7RD, 4RE, 5RE, 7RE, 4RF, 5RF, 7RF, 4RG, 5RG, 7RG, 4RH, 5RH, 7RH, 4RI, 5RI, 7RI, 4RJ, 5RJ, 7RJ, 4RK, 5RK, 7RK, 4RL, 5RL, 7RL, 4RM, 5RM, 7RM, 4RN, 5RN, 7RN, 4RO, 5RO, 7RO, 4RP, 5RP, 7RP, 4RQ, 5RQ, 7RQ, 4RR, 5RR, 7RR, 4RS, 5RS, 7RS, 4RT, 5RT, 7RT, 4RU, 5RU, 7RU, 4RV, 5RV, 7RV, 4RW, 5RW, 7RW, 4RX, 5RX, 7RX, 4RY, 5RY, 7RY, 4RZ, 5RZ, 7RZ, 4SA, 5SA, 7SA, 4SB, 5SB, 7SB, 4SC, 5SC, 7SC, 4SD, 5SD, 7SD, 4SE, 5SE, 7SE, 4SF, 5SF, 7SF, 4SG, 5SG, 7SG, 4SH, 5SH, 7SH, 4SI, 5SI, 7SI, 4SJ, 5SJ, 7SJ, 4SK, 5SK, 7SK, 4SL, 5SL, 7SL, 4SM, 5SM, 7SM, 4SN, 5SN, 7SN, 4SO, 5SO, 7SO, 4SP, 5SP, 7SP, 4SQ, 5SQ, 7SQ, 4SR, 5SR, 7SR, 4SS, 5SS, 7SS, 4ST, 5ST, 7ST, 4SU, 5SU, 7SU, 4SV, 5SV, 7SV, 4SW, 5SW, 7SW, 4SX, 5SX, 7SX, 4SY, 5SY, 7SY, 4SZ, 5SZ, 7SZ, 4TA, 5TA, 7TA, 4TB, 5TB, 7TB, 4TC, 5TC, 7TC, 4TD, 5TD, 7TD, 4TE, 5TE, 7TE, 4TF, 5TF, 7TF, 4TG, 5TG, 7TG, 4TH, 5TH, 7TH, 4TI, 5TI, 7TI, 4TJ, 5TJ, 7TJ, 4TK, 5TK, 7TK, 4TL, 5TL, 7TL, 4TM, 5TM, 7TM, 4TN, 5TN, 7TN, 4TO, 5TO, 7TO, 4TP, 5TP, 7TP, 4TQ, 5TQ, 7TQ, 4TR, 5TR, 7TR, 4TS, 5TS, 7TS, 4TT, 5TT, 7TT, 4TU, 5TU, 7TU, 4TV, 5TV, 7TV, 4TW, 5TW, 7TW, 4TX, 5TX, 7TX, 4TY, 5TY, 7TY, 4TZ, 5TZ, 7TZ, 4UA, 5UA, 7UA, 4UB, 5UB, 7UB, 4UC, 5UC, 7UC, 4UD, 5UD, 7UD, 4UE, 5UE, 7UE, 4UF, 5UF, 7UF, 4UG, 5UG, 7UG, 4UH, 5UH, 7UH, 4UI, 5UI, 7UI, 4UJ, 5UJ, 7UJ, 4UK, 5UK, 7UK, 4UL, 5UL, 7UL, 4UM, 5UM, 7UM, 4UN, 5UN, 7UN, 4UO, 5UO, 7UO, 4UP, 5UP, 7UP, 4UQ, 5UQ, 7UQ, 4UR, 5UR, 7UR, 4US, 5US, 7US, 4UT, 5UT, 7UT, 4UU, 5UU, 7UU, 4UV, 5UV, 7UV, 4UW, 5UW, 7UW, 4UX, 5UX, 7UX, 4UY, 5UY, 7UY, 4UZ, 5UZ, 7UZ, 4VA, 5VA, 7VA, 4VB, 5VB, 7VB, 4VC, 5VC, 7VC, 4VD, 5VD, 7VD, 4VE, 5VE, 7VE, 4VF, 5VF, 7VF, 4VG, 5VG, 7VG, 4VH, 5VH, 7VH, 4VI, 5VI, 7VI, 4VJ, 5VJ, 7VJ, 4VK, 5VK, 7VK, 4VL, 5VL, 7VL, 4VM, 5VM, 7VM, 4VN, 5VN, 7VN, 4VO, 5VO, 7VO, 4VP, 5VP, 7VP, 4VQ, 5VQ, 7VQ, 4VR, 5VR, 7VR, 4VS, 5VS, 7VS, 4VT, 5VT, 7VT, 4VU, 5VU, 7VU, 4VV, 5VV, 7VV, 4VW, 5VW, 7VW, 4VX, 5VX, 7VX, 4VY, 5VY, 7VY, 4VZ, 5VZ, 7VZ, 4WA, 5WA, 7WA, 4WB, 5WB, 7WB, 4WC, 5WC, 7WC, 4WD, 5WD, 7WD, 4WE, 5WE, 7WE, 4WF, 5WF, 7WF, 4WG, 5WG, 7WG, 4WH, 5WH, 7WH, 4WI, 5WI, 7WI, 4WJ, 5WJ, 7WJ, 4WK, 5WK, 7WK, 4WL, 5WL, 7WL, 4WM, 5WM, 7WM, 4WN, 5WN, 7WN, 4WO, 5WO, 7WO, 4WP, 5WP, 7WP, 4WQ, 5WQ, 7WQ, 4WR, 5WR, 7WR, 4WS, 5WS, 7WS, 4WT, 5WT, 7WT, 4WU, 5WU, 7WU, 4WV, 5WV, 7WV, 4WW, 5WW, 7WW, 4WX, 5WX, 7WX, 4WY, 5WY, 7WY, 4WZ, 5WZ, 7WZ, 4XA, 5XA, 7XA, 4XB, 5XB, 7XB, 4XC, 5XC, 7XC, 4XD, 5XD, 7XD, 4XE, 5XE, 7XE, 4XF, 5XF, 7XF, 4XG, 5XG, 7XG, 4XH, 5XH, 7XH, 4XI, 5XI, 7XI, 4XJ, 5XJ, 7XJ, 4XK, 5XK, 7XK, 4XL, 5XL, 7XL, 4XM, 5XM, 7XM, 4XN, 5XN, 7XN, 4XO, 5XO, 7XO, 4XP, 5XP, 7XP, 4XQ, 5XQ, 7XQ, 4XR, 5XR, 7XR, 4XS, 5XS, 7XS, 4XT, 5XT, 7XT, 4XU, 5XU, 7XU, 4XV, 5XV, 7XV, 4XW, 5XW, 7XW, 4XX, 5XX, 7XX, 4XY, 5XY, 7XY, 4XZ, 5XZ, 7XZ, 4YA, 5YA, 7YA, 4YB, 5YB, 7YB, 4YC, 5YC, 7YC, 4YD, 5YD, 7YD, 4YE, 5YE, 7YE, 4YF, 5YF, 7YF, 4YG, 5YG, 7YG, 4YH, 5YH, 7YH, 4YI, 5YI, 7YI, 4YJ, 5YJ, 7YJ, 4YK, 5YK, 7YK, 4YL, 5YL, 7YL, 4YM, 5YM, 7YM, 4YN, 5YN, 7YN, 4YO, 5YO, 7YO, 4YP, 5YP, 7YP, 4YQ, 5YQ, 7YQ, 4YR, 5YR, 7YR, 4YS, 5YS, 7YS, 4YT, 5YT, 7YT, 4YU, 5YU, 7YU, 4YV, 5YV, 7YV, 4YW, 5YW, 7YW, 4YX, 5YX, 7YX, 4YY, 5YY, 7YY, 4YZ, 5YZ, 7YZ, 4ZA, 5ZA, 7ZA, 4ZB, 5ZB, 7ZB, 4ZC, 5ZC, 7ZC, 4ZD, 5ZD, 7ZD, 4ZE, 5ZE, 7ZE, 4ZF, 5ZF, 7ZF, 4ZG, 5ZG, 7ZG, 4ZH, 5ZH, 7ZH, 4ZI, 5ZI, 7ZI, 4ZJ, 5ZJ, 7ZJ, 4ZK, 5ZK, 7ZK, 4ZL, 5ZL, 7ZL, 4ZM, 5ZM, 7ZM, 4ZN, 5ZN, 7ZN, 4ZO, 5ZO, 7ZO, 4ZP, 5ZP, 7ZP, 4ZQ, 5ZQ, 7ZQ, 4ZR, 5ZR, 7ZR, 4ZS, 5ZS, 7ZS, 4ZT, 5ZT, 7ZT, 4ZU, 5ZU, 7ZU, 4ZV, 5ZV, 7ZV, 4ZW, 5ZW, 7ZW, 4ZX, 5ZX, 7ZX, 4ZY, 5ZY, 7ZY, 4ZZ, 5ZZ, 7ZZ
- b = Enclosure: D, R, A, K, T, N, Z, or Q
- c = Junction: 02, 03, 05, or 06
- d = Shaft Output: X, S, N or H
- e = Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, B, E, Y, H, J, K, M, P, N, D, A, S, T, U, V or W
- f = Branding: A or M
- g = Options: '1-5 alpha or numeric digits for special and marketing identification'

*When a = 5O, 7O

For T4 Ta* = -40°C to +80°C

Entity Limitation Parameters: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30 Vdc, Ii = 120 mA

*When a = BO, CO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters: Ui = 26 V, Ii = 14 mA, Pi = 50 mW, Ci = 0 nF, Li = 0 mH

*When a = 2J, 4J, 2M, 4M

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

*When a = 5J, 7J, 5M, 7M

For T4 Ta* = -40°C to +80°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = BJ, CJ, BM, CM

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Potentiometer: Ui = 26 Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

*When a = 44

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 2W, Ci = 98 nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

*When a = 54, 74

For T4 Ta* = -40°C to +80°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 2W, Ci = 98 nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

Transmitter: Ui = 30 Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

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*When a = B4, C4

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 2W, Ci = 98nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Potentiometer: Ui = 26 Vdc, li = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

*When a = 45

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

*When a = 5R, 7R

For T4 Ta* = -40°C to +80°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22Vdc, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120 mA

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30V, li = 120 mA

*When a = BR, CR

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Transmitter: Ui = 26 Vdc, li = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

* When a = 2N, 4N, 6N

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	li mA	Pi mW	Ci nF	Li mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

* When a = 5N, 7N

Switch/Sensor:

For T4...T1, Ta*=	Ui V	li mA	Pi mW	Ci nF	Li mH
-25°C to +80°C	16	25	34	40	0.05
-25°C to +80°C	16	25	64	40	0.05
-25°C to +68°C	16	52	169	40	0.05
-25°C to +53°C	16	76	242	40	0.05

Transmitter; Ui = 30Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

* When a = TN

Switch/Sensor

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	li mA	Pi mW	Ci nF	Li mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

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DOCUMENT No: XPL0213

RELEASE DATE: 29/05/2018

REV : 7

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$ Solenoid Connection Terminals: $U_i = 30 \text{ Vdc}$, $I_i = 120 \text{ mA}$

* When a = BN, CN

Switch/Sensor:

For T6, $T_a^* =$	For T5, $T_a^* =$	For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Potentiometer; $U_i = 26 \text{ Vdc}$, $I_i = 14 \text{ mA}$, $C_i = 0 \text{ nF}$, $L_i = 0 \text{ mH}$, $P_i = 50 \text{ mW}$

* When a = 2A, 4A

For T6, $T_a^* =$	For T5, $T_a^* =$	For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

* When a = 5A, 7A

Switch/Sensor:

For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-40°C to +80°C	16	25	34	50	0.15
-40°C to +80°C	16	25	64	50	0.15
-40°C to +74°C	16	52	169	50	0.15
-40°C to +61°C	16	76	242	50	0.15

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 66 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$

* When a = TA

Switch/Sensor

For T6, $T_a^* =$	For T5, $T_a^* =$	For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$ Solenoid Connection Terminals: $U_i = 30 \text{ Vdc}$, $I_i = 120 \text{ mA}$

* When a = BA, CA

Switch/Sensor:

For T6, $T_a^* =$	For T5, $T_a^* =$	For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Potentiometer; $U_i = 26 \text{ Vdc}$, $I_i = 14 \text{ mA}$, $C_i = 0 \text{ nF}$, $L_i = 0 \text{ mH}$, $P_i = 50 \text{ mW}$

* When a = 2B

For T6, $T_a^* =$	For T5, $T_a^* =$	For T4...T1, $T_a^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-25°C to +57°C	-25°C to +69°C	-25°C to +80°C	16	25	34	100	0.20
-25°C to +52°C	-25°C to +64°C	-25°C to +80°C	16	25	64	100	0.20
-25°C to +34°C	-25°C to +46°C	-25°C to +74°C	16	52	169	100	0.20
-25°C to +22°C	-25°C to +34°C	-25°C to +61°C	16	76	242	100	0.20

QXabcde-f.g. Valve Position Monitor.**Ex ia IIC T6...T1 Ga Ta*, IP66 IP67**

- a = Function: 2J, 4J, 5J, 7J, BJ, CJ, 2M, 4M, 5M, 7M, BM, CM, 5O, 7O, TO, BO, CO, 2N, 4N, 5N, 6N, 7N, TN, BN, CN, 2A, 4A, 5A, 7A, TA, BA, CA, 2B, 4B, 5B, 7B, B4, C4, 4S, 5R, 7R, TR, BR or CR
- b = Enclosure: R, T, K or N
- c = Junction: 02, 03, 05, or 06
- d = Shaft Output: X, S, N or H
- e = Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, B, E, Y, H, J, K, M, P, N, D, A, S, T, U, V or W
- f = Branding: A or M
- g = Options: '1-5 alpha or numeric digits for special and marketing identification'

*When a = 5O, 7O

For T4 Ta* = -40°C to +80°C

Entity Limitation Parameters: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = TO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30 Vdc, li = 120 mA

*When a = BO, CO

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters: Ui = 26 V, li = 14 mA, Pi = 50 mW, Ci = 0 nF, Li = 0 mH

*When a = 2J, 4J, 2M, 4M

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

*When a = 5J, 7J, 5M, 7M

For T4 Ta* = -40°C to +80°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = BJ, CJ, BM, CM

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Switch/Sensor: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0.8 mH, Pi = 2.0 W

Potentiometer: Ui = 26 Vdc, li = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

*When a = 44

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 2W, Ci = 98 nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

*When a = 54, 74

For T4 Ta* = -40°C to +80°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 2W, Ci = 98 nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

Transmitter: Ui = 30 Vdc, li = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

*When a = B4, C4

For T5 Ta* = -40°C to +80°C; For T6 Ta* = -40°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, li = 120 mA, Pi = 2W, Ci = 98nF, Li = 0.8 mH

Solenoid Connection Terminals: Ui = 30V, li = 120mA

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Potentiometer: $U_i = 26 \text{ Vdc}$, $I_i = 14 \text{ mA}$, $C_i = 0 \text{ nF}$, $L_i = 0 \text{ mH}$, $P_i = 50 \text{ mW}$

*When $a = 45$

For T5 $Ta^* = -40^\circ\text{C}$ to $+80^\circ\text{C}$; For T6 $Ta^* = -40^\circ\text{C}$ to $+65^\circ\text{C}$

Energy Limitation Parameters:

Sensor Module: $U_i = 22 \text{ V}$, $I_i = 120 \text{ mA}$, $P_i = 0.4 \text{ W}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ mH}$

Solenoid Connection Terminals: $U_i = 30 \text{ V}$, $I_i = 120 \text{ mA}$

*When $a = 5R, 7R$

For T4 $Ta^* = -40^\circ\text{C}$ to $+80^\circ\text{C}$

Energy Limitation Parameters:

Sensor Module: $U_i = 22 \text{ V}$, $I_i = 120 \text{ mA}$, $P_i = 0.4 \text{ W}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ mH}$

Solenoid Connection Terminals: $U_i = 30 \text{ V}$, $I_i = 120 \text{ mA}$

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 66 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$

*When $a = TR$

For T5 $Ta^* = -40^\circ\text{C}$ to $+80^\circ\text{C}$; For T6 $Ta^* = -40^\circ\text{C}$ to $+65^\circ\text{C}$

Energy Limitation Parameters:

Sensor Module: $U_i = 22 \text{ Vdc}$, $I_i = 120 \text{ mA}$, $P_i = 0.4 \text{ W}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ mH}$

Solenoid Connection Terminals: $U_i = 30 \text{ V}$, $I_i = 120 \text{ mA}$

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$

Solenoid Connection Terminals: $U_i = 30 \text{ V}$, $I_i = 120 \text{ mA}$

*When $a = BR, CR$

For T5 $Ta^* = -40^\circ\text{C}$ to $+80^\circ\text{C}$; For T6 $Ta^* = -40^\circ\text{C}$ to $+65^\circ\text{C}$

Energy Limitation Parameters:

Sensor Module: $U_i = 22 \text{ V}$, $I_i = 120 \text{ mA}$, $P_i = 0.4 \text{ W}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ mH}$

Solenoid Connection Terminals: $U_i = 30 \text{ V}$, $I_i = 120 \text{ mA}$

Transmitter: $U_i = 26 \text{ Vdc}$, $I_i = 14 \text{ mA}$, $C_i = 0 \text{ nF}$, $L_i = 0 \text{ mH}$, $P_i = 50 \text{ mW}$

* When $a = 2N, 4N, 6N$

For T6, $Ta^* =$	For T5, $Ta^* =$	For T4...T1, $Ta^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-25°C to $+56^\circ\text{C}$	-25°C to $+68^\circ\text{C}$	-25°C to $+80^\circ\text{C}$	16	25	34	40	0.05
-25°C to $+49^\circ\text{C}$	-25°C to $+61^\circ\text{C}$	-25°C to $+80^\circ\text{C}$	16	25	64	40	0.05
-25°C to $+28^\circ\text{C}$	-25°C to $+40^\circ\text{C}$	-25°C to $+68^\circ\text{C}$	16	52	169	40	0.05
-25°C to $+13^\circ\text{C}$	-25°C to $+25^\circ\text{C}$	-25°C to $+53^\circ\text{C}$	16	76	242	40	0.05

* When $a = 5N, 7N$

Switch/Sensor:

For T4...T1, $Ta^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-25°C to $+80^\circ\text{C}$	16	25	34	40	0.05
-25°C to $+80^\circ\text{C}$	16	25	64	40	0.05
-25°C to $+68^\circ\text{C}$	16	52	169	40	0.05
-25°C to $+53^\circ\text{C}$	16	76	242	40	0.05

Transmitter; $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 66 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$

* When $a = TN$

Switch/Sensor

For T6, $Ta^* =$	For T5, $Ta^* =$	For T4...T1, $Ta^* =$	U_i V	I_i mA	P_i mW	C_i nF	L_i mH
-25°C to $+56^\circ\text{C}$	-25°C to $+68^\circ\text{C}$	-25°C to $+80^\circ\text{C}$	16	25	34	40	0.05
-25°C to $+49^\circ\text{C}$	-25°C to $+61^\circ\text{C}$	-25°C to $+80^\circ\text{C}$	16	25	64	40	0.05
-25°C to $+28^\circ\text{C}$	-25°C to $+40^\circ\text{C}$	-25°C to $+68^\circ\text{C}$	16	52	169	40	0.05
-25°C to $+13^\circ\text{C}$	-25°C to $+25^\circ\text{C}$	-25°C to $+53^\circ\text{C}$	16	76	242	40	0.05

Transmitter: $U_i = 30 \text{ Vdc}$, $I_i = 100 \text{ mA}$, $C_i = 3 \text{ nF}$, $L_i = 0 \text{ H}$, $P_i = 0.75 \text{ W}$

Solenoid Connection Terminals: $U_i = 30 \text{ Vdc}$, $I_i = 120 \text{ mA}$

* When a = BN, CN

Switch/Sensor:

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-25°C to +56°C	-25°C to +68°C	-25°C to +80°C	16	25	34	40	0.05
-25°C to +49°C	-25°C to +61°C	-25°C to +80°C	16	25	64	40	0.05
-25°C to +28°C	-25°C to +40°C	-25°C to +68°C	16	52	169	40	0.05
-25°C to +13°C	-25°C to +25°C	-25°C to +53°C	16	76	242	40	0.05

Potentiometer; Ui = 26Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 mH, Pi = 50mW

* When a = 2A, 4A

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

* When a = 5A, 7A

Switch/Sensor:

For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-40°C to +80°C	16	25	34	50	0.15
-40°C to +80°C	16	25	64	50	0.15
-40°C to +74°C	16	52	169	50	0.15
-40°C to +61°C	16	76	242	50	0.15

Transmitter; Ui = 30Vdc, Ii = 100 mA, Ci = 66 nF, Li = 0 H, Pi = 0.75 W

* When a = TA

Switch/Sensor

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Transmitter; Ui = 30 Vdc, Ii = 100 mA, Ci = 3 nF, Li = 0 H, Pi = 0.75 W

Solenoid Connection Terminals: Ui = 30 Vdc, Ii = 120 mA

* When a = BA, CA

Switch/Sensor:

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-40°C to +57°C	-40°C to +69°C	-40°C to +80°C	16	25	34	50	0.15
-40°C to +52°C	-40°C to +64°C	-40°C to +80°C	16	25	64	50	0.15
-40°C to +34°C	-40°C to +46°C	-40°C to +74°C	16	52	169	50	0.15
-40°C to +22°C	-40°C to +34°C	-40°C to +61°C	16	76	242	50	0.15

Potentiometer; Ui = 26Vdc, Ii = 14 mA, Ci = 0 nF, Li = 0 H, Pi = 50mW

* When a = 2B

For T6, Ta*=	For T5, Ta*=	For T4...T1, Ta*=	Ui V	Ii mA	Pi mW	Ci nF	Li mH
-25°C to +57°C	-25°C to +69°C	-25°C to +80°C	16	25	34	100	0.20
-25°C to +52°C	-25°C to +64°C	-25°C to +80°C	16	25	64	100	0.20
-25°C to +34°C	-25°C to +46°C	-25°C to +74°C	16	52	169	100	0.20
-25°C to +22°C	-25°C to +34°C	-25°C to +61°C	16	76	242	100	0.20

Ex ia IIC T6...T1 Ga Ta*, IP66

- a = Function: 45
- b = Enclosure: K, N, R or T
- c = Junction: 03 or 06
- d = Shaft Output: X, S, N or H
- e = Visual Indication: X, G, R, C, 1, 2, 3, 4, 5, 0, B, E, Y, H, J, K, M, P, N, D, A, S, T, U, V or W
- f = Branding: A or M
- g = Options: '1-5 alpha or numeric digits for special and marketing identification'

*When a = 45

For T5 Ta* = -55°C to +80°C; For T6 Ta* = -55°C to +65°C

Energy Limitation Parameters:

Sensor Module: Ui = 22V, Ii = 120 mA, Pi = 0.4W, Ci = 3 nF, Li = 0 H

Solenoid Connection Terminals: Ui = 30V, Ii = 120mA

Based on the following documentation:

IECEx FMG 19.0016X Issue No.: 1 and/or FM 10 ATEX 0039X Up to Supplement 5

2. INSTALLATION INSTRUCTIONS

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

3. SPECIAL CONDITIONS FOR SAFE USE *(denoted by "X" after certificate number)*

Parts of the enclosure are non-conducting and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions which might cause a build up of electrostatic charge on non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.

When installed within a Zone 0 location, the aluminium alloy enclosure shall be installed in such a manner as to prevent the possibility of sparks resulting from friction or impact.

Using the box provided on the nameplate, the user shall permanently mark the type of protection chosen for the specific installation. Once the type of protection has been marked it shall not be changed.

4. SCHEDULE OF LIMITATIONS *(denoted by "U" after certificate number)*

None.

5. CONDITIONS OF CERTIFICATION

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

6.

MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier : Neles South Africa (Pty) Ltd
Manufacturer : Neles USA Inc. dba StoneL
Equipment : Valve Position Monitors
Model/Type : Quartz QN, QX and QC Series
Serial No. : ---
Ex Rating : QN and QX Series:
Ex ia IIC T6...T1 Ga Ta*, IP66 IP67
QC Series:
Ex ia IIC T6...T1 Ga Ta*, IP66
IA Certificate No : S-XPL/13.1598 X

Responsible Testing Officer:

D Maree

Technical Specialist

EXPLOLABS EXPLOSION PREVENTION SERVICES

This report/certificate shall not be reproduced except in full without the written approval of the company Explolabs (Pty) Ltd shall not be liable for any losses or damages sustained on account of any failure or omission to properly perform our duties in terms of any contract undertaken by us. This disclaimer is immutable and automatically incorporated in any contract undertaken by us; notwithstanding anything to the contrary, save for the express written waiver of our managing director. By marking the equipment in accordance with the documentation/standard, the manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of the relevant standards and that the routine verifications and tests have been successfully completed and that the product complies with the documentation and standard(s). The contents of electronic reports/certificates cannot be guaranteed. Original certification documents will be kept on file at Explolabs (Pty) Ltd

This certificate supersedes all previous documents bearing the reference no XPL/14841/13.1598 Issue 5.

DOCUMENT No: XPL0213

RELEASE DATE: 29/05/2018

REV : 7