FIRST LETTER		SECOND & SUCCEEDING LETTERS																		
		DISPLAY DEVICES							CONTROLLING DEVICES							SENSING DEVICES					
MEASURED VARIABLE	SYMBOL FOR MEASURED VARIABLES	INDICATING	RECORDING	INTEGRATING INDICATOR (SEE NOTE 5)	SCAN (SEE NOTE 7)	ALARM (SEE NOTE 4)			INDICATING	RECORDING	BLIND	CONTROL VALVE	SELF ACTUATED VALVE (SEE NOTE 9)	FINAL CONTROL ELEMENT (SEE NOTE 11)	SWITCH (SEE NOTE 6)	PRIMARY ELEMENT	BLIND TRANSMITTER	INDICATING TRANSMITTER	LOCAL OBSERVATION GLASS	TEST CONNECTION	RELAY OR CONVERTER (BLIND) (SEE NOTE 2)
						LOW	HIGH	LOW HIGH												
TYPICAL SYMBOL	( )	( ) I	( ) R	( ) QI	( ) J ( )	( ) AL	( ) AH	( ) AHL	( ) IC	( ) RC	( ) C	( ) V	( ) CV	( ) Z	( ) S ( )	( ) E	( ) T	( ) IT	( ) G	( ) P	( ) Y
ANALYSIS (SEE NOTE 1)	A	AI	AR		AJ ( )	AAL	AAH	AAHL	AIC	ARC	AC	AV		AZ	AS ( )	AE	AT	AIT		AP	AY
BURNER FLAME	B	BI	BR		BJ ( )	BAL					BC	BV			BS ( )	BE	BT		BG	BP	BY
CONDUCTIVITY	C	CI	CR		CJ ( )	CAL	CAH	CAHL	CIC	CRC		CV		CZ	CS ( )	CE	CT	CIT		CP	CY
DENSITY	D	DI	DR		DJ ( )	DAL	DAH	DAHL	DIC	DRC		DV		DZ	DS ( )	DE	DT	DIT		DP	DY
VOLTAGE (EMF)	E	EI	ER		EJ ( )	EAL	EAH	EAHL	EIC	ERC	EC			EZ	ES ( )	EE	ET	EIT			EY
FLOW (SEE NOTE 10)	F	FI	FR	FQI	FJ ( )	FAL	FAH	FAHL	FIC	FRC	FC	FV	FCV	FZ	FS ( )	FE	FT	FIT	FG	FP	FY
FLOW RATIO TOTAL	FF	FFI	FFR		FFJ ( )				FFIC	FFRC	FFC	FFV		FFZ							
GAGING (DIMENSIONAL)	G	GI	GR		GJ ( )	GAL	GAH	GAHL	GIC	GRC	GC	GV		GZ	GS ( )	GE	GT	GIT			
HAND	H								HIC		HC	HV	HCV	HZ	HS ( )						
CURRENT	I	II	IR	IQI	IJ ( )	IAL	IAH	IAHL	IIC	IRC	IC			IZ	IS ( )	IE	IT	IIT			IY
POWER	J	JI	JR	JQI	JJ ( )	JAL	JAH	JAHL	JIC	JRC	JC			JZ	JS ( )	JE	JT	JIT			JY
TIME	K	KI	KR	KQI	KJ ( )	KAL	KAH	KAHL	KIC	KRC	KC	KV		KZ	KS ( )		KT	KIT			KY
LEVEL	L	LI	LR		LJ ( )	LAL	LAH	LAHL	LIC	LRC	LC	LV	LCV	LZ	LS ( )	LE	LT	LIT	LG	LP	LY
MOISTURE	M	MI	MR		MJ ( )	MAL	MAH	MAHL	MIC	MRC	MC	MV		MZ	MS ( )	ME	MT	MIT		MP	MY
CAMERA	N																				
TORQUE	O	OI	OR		OJ ( )	OAL	OAH	OAHL	OIC	ORC	OC	OV		OZ	OS ( )	OE	OT				OY
PRESSURE	P	PI	PR		PJ ( )	PAL	PAH	PAHL	PIC	PRC	PC	PV	PCV	PZ	PS ( )	PE	PT	PIT		PP	PY
PRESSURE DIFFERENTIAL	PD	PDI	PDR			PDAL	PDAH	PDAHL	PDIC	PDRC	PDC	PDV	PDCV	PDZ	PDS ( )		PDT	PDIT			
QUANTITY OR EVENT	Q	QI	QR	QQI	QJ ( )	QAL	QAH	QAHL	QIC	QRC	QC	QV		QZ	QS ( )		QT	QIT			QY
RADIATION	R	RI	RR	RQI	RJ ( )	RAL	RAH	RAHL	RIC	RRC	RC			RZ	RS ( )	RE	RT	RIT		RP	RY
SPEED OR FREQUENCY	S	SI	SR	SQI	SJ ( )	SAL	SAH	SAHL	SIC	SRC	SC			SZ	SS ( )		ST	SIT			SY
TEMPERATURE	T	TI	TR		TJ ( )	TAL	TAH	TAHL	TIC	TRC	TC	TV	TCV	TZ	TS ( )	TE	TT	TIT		TW	TY
TEMPERATURE DIFFERENTIAL	TD	TDI	TDR			TDAL	TDAH	TDAHL	TDIC	TDRC	TDC	TDV	TDCV	TDZ	TDS ( )	(SEE NOTE 8)				(SEE NOTE 8)	
MULTI-VARIABLE	U	UI	UR		UJ ( )	UAL	UAH	UAHL	UIC	URC	UC	UV		UZ	US ( )			UIT			UY
VIBRATION	V	VI	VR		VJ ( )	VAL	VAH	VAHL	VIC	VRC	VC	VV		VZ	VS ( )	VE	VT	VIT			VY
WEIGHT	W	WI	WR	WQI	WJ ( )	WAL	WAH	WAHL	WIC	WRC	WC	WV		WZ	WS ( )	WE	WT	WIT			WY
UNCLASSIFIED (SEE NOTE 3)	X	XI	XR		XJ ( )	XAL	XAH	XAHL	XIC	XRC	XC	XV		XZ	XS ( )	XE	XT	XIT			XY
EVENT, STATE , PRESENCE	Y										YC (SEE NOTE 12)										YY
POSITION	Z	ZI	ZR		ZJ ( )	ZAL	ZAH	ZAHL	ZIC	ZRC	ZC			ZZ	ZS ( )	ZE	ZT	ZIT			ZY

NOTES

(1) "A" IS USED FOR ALL ANALYTICAL VARIABLES, FOR EXAMPLE: O_2, H_2O, CO_2, pH, CHROMATOGRAPH, BOILING POINT, FREEZING POINT, COMBUSTIBLES, ETC. THE CHEMICAL FORMULA SUCH AS O_2 OR A DESCRIPTION DENOTING THE FUNCTION OF THE ANALYZER SHOULD BE NOTED ON THE P&ID OUTSIDE THE INSTRUMENT SYMBOL.

(2) THE EQUATION OR DESCRIPTION DENOTING THE FUNCTION OF THE RELAY "Y" SHOULD BE SHOWN ON THE P&ID. FOR EXAMPLE: A = B+C+K, LP SELECTOR, VOLUME BOOSTER.

(3) "X" IS USED TO REPRESENT ANY "SPECIAL" VARIABLES AND MAY BE DEFINED AS REQUIRED.

(4) HIGH-HIGH ALARMS WILL BE DESIGNATED "( )AHH" AND LOW-LOW ALARMS "( )ALL". FOR EXAMPLE: LAHH DENOTES "HIGH-HIGH LEVEL ALARM".

(5) WHEN "Q" IS USED AS A SECOND OR SUCCEEDING LETTER IT DENOTES AN INTEGRATING FUNCTION. FOR EXAMPLE: "FQI" IS AN INDICATING FLOW INTEGRATOR (OR TOTALIZER). NOTE THAT THE INTEGRATING FUNCTION SHALL BE SHOWN WITH SEPARATE IDENTIFICATION: FOR EXAMPLE: FQI/FRS OR FR/FQIS.

(6) STARTUP AND SHUTDOWN DEVICES ARE USUALLY BLIND, BUT MAY BE INDICATING. IF SO, ADD "I" AFTER MEASURED VARIABLE. FOR EXAMPLE: FIS. IF THE SWITCH PERFORMS AN ON-OFF CONTROL FUNCTION, REPLACE "S" BY "C". FOR EXAMPLE: "FS" BECOMES "FC". SWITCH FUNCTIONS SHALL BE FURTHER MODIFIED BY "L" FOR LOW AND "H" FOR HIGH.

(7) THE DESIGNATION "AJ ( )" MAY DENOTE A SCANNING ANALYZER INDICATOR, RECORDER, TRANSMITTER, ETC., BY USING THE DESIGNATION AJI, AJR, AJT,

(8) FOR STREAM MEASUREMENTS, "TW" DENOTES AN EMPTY THERMOWELL. "TE" DENOTES A THERMOWELL WITH A THERMOCOUPLE OR RESISTANCE BULB AND HEAD SUITABLE FOR USE WITH A SECONDARY INSTRUMENT.

(9) PRESSURE RELIEF VALVES AND RUPTURE DISKS SHALL BE IDENTIFIED AS "PSV" AND "PSE" RESPECTIVELY.

(10) "FO" IS USED TO DESIGNATE A RESTRICTION ORIFICE.

(11) FOR FINAL CONTROL DEVICES OTHER THAN CONTROL VALVES, SUCH AS HYDRAULIC COUPLINGS, VARIABLE SPEED DRIVES, ETC.

(12) YC DENOTES A TYPICAL CONTROL FUNCTION OF MOTOR OR VALVE BY THE DCS OR PLC. THIS INCLUDES TYPICALLY START/STOP COMMANDS, LOCAL/REMOTE AND AUTO/MANUAL SELECTIONS, READY/RUNNING STATUS INDICATION, OVERLOAD ALARM ETC.

(13) THIS DRAWING IS BASED ON ANSI/ISA-5.1-2009 STANDARD INSTRUMENTATION SYMBOLS AND IDENTIFICATION.

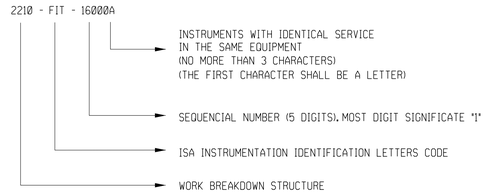
(14) TAG OF PULLCORDS AND MISALIGNMENT ON CONVEYORS SHALL USE SUFFIX "ANN" FOR THE INSTRUMENTS ON THE LEFT SIDE AND "BNN" FOR INSTRUMENTS ON THE RIGHT SIDE OF FLOW DIRECTION. NN USES THE FOLLOWING SECUENCE FROM THE TAIL TO HEAD OF THE CONVEYOR: 0...99.

(15) TAG OF MACHINERY PROTECTION INSTRUMENTS FOR A EQUIPMENT OR MOTOR WITH BEARINGS SHALL USE SUFFIX "ANN" FOR THE INSTRUMENTS ON THE D.E. BEARING AND "BNN" FOR INSTRUMENTS ON THE N.D.E. BEARING. NN USES THE FOLLOWING SECUENCE: 0...99.

PROJECT INSTRUMENT TAG NUMBERS

EACH INSTRUMENT WILL BE TAGGED IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD ISA S5.1.

EXAMPLE:



PARA REVISION FOR REVIEW

BHP

amec foster wheeler

- [ ] Revisado / Reviewed
- [ ] Revisado con Comentarios / Reviewed with comments
- [ ] Rechazado y volver a emitir / Rejected, reissue
- [x] Solo Información / Information Only

Fecha / Date: 17-05-2019

Firma / Signature: Marcial Mendoza

- [ ] SPANISH LANGUAGE GOVERNS
- [x] ENGLISH LANGUAGE GOVERNS

Rev. No.	DATE	REVISIONS	DIS.	REV.	D.L.	BHP	REFERENCE DOCUMENTS	BHP N°	NOTE
2	03-may-19	ISSUED APPROVED FOR CONSTRUCTION	FC	GG	HG/JB				
1	20-dec-18	ISSUED APPROVED FOR CONSTRUCTION	SKC	RM	SA/JB				
0	17-jan-18	ISSUED APPROVED FOR DESIGN	AB	DP	HG				
0A	21-sep-17	ISSUED FOR COMPANY APPROVAL	AB	DP	HG				
A	25-jul-17	ISSUED FOR INTERNAL REVIEW	AB	DP	HG				

Fluor-Salfa

ENGINEERING	SCALE	DATE		DATE
	DESIGNED BY:		DRAWN BY: SYAM	11-12-18
	REVISED BY: R. MONDAL	11-12-18	DISCIPLINE LEADER: ADAPA/ BARRERA	11-12-18
	ENGINEERING MGR: JOSHI/LEGGETT	11-12-18	PROJECT MGR: A. KING	11-12-18
BHP	ENGINEERING MGR:		PROJECT MGR:	

VENDOR DRAWING N°: 4-V2-2000-PR-PID-000005

BHP MINERA SPENCE S.A.

SGO PROJECT

MINERAL PROCESS FACILITIES

CODES & DESCRIPTION FOR INSTRUMENTS P&ID

CONTRACT N°: 8500135645

BHP DRWG N°: 4-V2-2000-PR-PID-000005

REV.: 2

03-May-19 12:09:45

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