



**4X270 MW BHADRADI TPS
DATA SHEET FOR CONTROL VALVES
(WITH PNEUMATIC ACTUATOR)**

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

INDEX

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3.	CD-21	EXCESS RETURN TO CST	4
4.	CD-25	CEP MINIMUM RECIRCULATION	4
5.	CD-76	CONDENSATE FOR VALVE GLAND SEALING	4
6.	CRH-2	DEAERATOR PEGGING FROM CRH	4
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8.	DR-9	HPH-6 ALT DRAIN TO HP FLASH TANK	4
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SPECIFICATION NO.: PE-TS-411-145-I104A

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SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
DEAERATOR PEGGING FROM AS HEADER
☐ INDOOR ☐ OUTDOOR
☐ ON/OFF ☒ MODULATING
Ø 273X6.35 | Ø 457X12.7
SA 106 Gr B | SA 106 Gr B

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH
FLOW
OUTLET VELOCITY

☐ **GLOBE** ☐ **ANGLE** | ☐ **TOP** ☒ **CAGE** | **ONE**

☒ **BWE** ☐ **SWE** ☐ **FLANGED**
☒ **A216 WCB** ☐ **A217 WC6** ☐ **SS** ☐ **A217 C5**
☐ **A351 CF8M**
☐ **PTFE** ☒ **GRAFOIL** ☐ **DOUBLE** ☒ **SINGLE**
☐ **STD** ☐ **EXTENDED** ☐ **FINNED**
☐ **LINEAR** ☒ **EQ. PERCENTAGE**
☐ **QUICK OPEN (ON/OFF)**

SS 316 STELLITED | **SS 316 STELLITED**

17-4 PH SS | **SS 316 STELLITED**
☐ **BELOW SEAT** ☐ **ABOVE SEAT**
☐ **< 7 M/SEC (WATER)** | ☐ **MAC NO. < 1/3 (STM)**

☐ **II** ☐ **III** ☒ **IV** ☐ **V** ☐ **VI**

LESS THAN 85 dBA

☐ **YES** ☒ **NO**
☐ **YES** ☒ **NO**

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

☒ TO OPEN ☐ STAYPUT ☐ TO CLOSE
☒ STAYPUT

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

SPECIFICATION NO.: PE-TS-411-145-I104A

SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

PERFORMANCE OF VALVE

LINEARITY
HYSTERESIS
SENSITIVITY
ACCURACY (OVERALL)

$\pm 2\%$
$\pm 1\%$
$\pm 0.5\%$
$+ 2\%$

.....

.....

.....

.....

SERVICE
CONDITION*

SL. No.	+
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LOAD

FLOW
(T/HR)

INLET PR.
KG/CM2(A)

OUTLET
PR.
KG/CM2(A)

TEMP
DEG (C)

CALCULATED
CV

[illegible]

VALVE
O/L
VELOCITY

1.0

MIN.

6.0

11

15

320

2.0

CASE-1

18

11

15

320

3.0

MAX.

30

11

3.5

320

VALVE TYPE

☐ CAVITATION ☐ FLASHING
☒ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)	15
* BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C)	15 | 360
* IBR FORM III-C	☒ REQUIRED ☐ NOT REQUIRED

.....

.....|.....

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

.....

NOTES:

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
EXCESS RETURN TO CST
☒ INDOOR ☐ OUTDOOR
☐ ON/OFF ☒ MODULATING
Ø 168.3x7.11 | Ø 168.3x7.11
SA 106 Gr B | SA 106 Gr B

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

☒ BWE ☐ SWE ☐ FLANGED
☒ A216 WCB ☐ A217 WC6 ☐ SS ☐ A217 C5
☐ A351 CF8M

☐ PTFE ☐ GRAFOIL ☐ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☐ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)

SS 316 STELLITED | SS 316 STELLITED
17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STM)

☐ II ☐ III ☒ IV ☐ V ☐ VI
LESS THAN 85 dBA
☐ YES ☒ NO
☐ YES ☒ NO

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

☐ TO OPEN ☒ STAYPUT ☐ TO CLOSE
☒ STAYPUT

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A			
							VOLUME			
							SECTION			
							REV. NO.	2	DATE : 18.05.15	
							SHEET			
Tag No.: CD-21/LCA33AA101 Qty.: ONE Data Sheet No. PES-145-06-DS1-0										
DATA SHEET – A & B										
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)		
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....			
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY	
	1.	MINIMUM	20	26.5	1.5	46.8				
	2.	MAXIMUM	240	19	2.0	46.8				
	VALVE TYPE						☐ CAVITATION ☐ FLASHING ☒ HIGH DP			
	* MAX SHUT OFF PRESS (KG/CM2g) 28 * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 28 | 60 * IBR FORM III-C ☐ REQUIRED ☒ NOT REQUIRED						..... ..... .....			
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....			
NOTES: 1. * TO BE FILLED BY MSE										

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A			
							VOLUME			
							SECTION			
							REV. NO.	2	DATE : 18.05.15	
							SHEET			
Tag No.: CD-25/LCA31AA101 Qty.: ONE Data Sheet No. PES-145-06-DS1-0										
DATA SHEET – A & B										
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)		
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....			
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY	
	1.	MINIMUM	15	26.5	0.7	46.8				
	2.	MAXIMUM	300	25.0	0.9	46.8				
	VALVE TYPE						☐ CAVITATION ☐ FLASHING ☐ HIGH DP			
	* MAX SHUT OFF PRESS (KG/CM2g) 28 * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 28 | 60 * IBR FORM III-C ☐ REQUIRED ☒ NOT REQUIRED						..... ..... .....			
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....			
NOTES: 1. * TO BE FILLED BY MSE										

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Date Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
CONDENSATE TO SG VALVES
☒ INDOOR ☐ OUTDOOR
☐ ON/OFF ☒ MODULATING
Ø 48.3 X 5.08 | Ø 48.3 X 5.08
SA 106 Gr B | SA 106 Gr B

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

☐ BWE ☒ SWE ☐ FLANGED
☒ A216 WCB ☐ A217 WC6 ☐ SS ☐ A217 CS
☐ A351 CF8M

☐ PTFE ☐ GRAFOIL ☐ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☐ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)

SS 316 STELLITED | SS 316 STELLITED
17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STM)

☐ II ☐ III ☒ IV ☐ V ☐ VI
LESS THAN 85 dBA
☐ YES ☒ NO
☐ YES ☒ NO

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

☐ TO OPEN ☐ STAYPUT ☐ TO CLOSE
☐ STAYPUT

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☐ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A			
							VOLUME			
							SECTION			
							REV. NO. 2		DATE : 18.05.15	
							SHEET			
Tag No.: CD-76/LCA35AA101 Qty.: ONE Date Sheet No. PES-145-06-DS1-0										
DATA SHEET – A & B										
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)		
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....			
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY	
	1.	MINIMUM	4.0	18	3.5	46.8				
	2.	MAXIMUM	4.0	26	3.5	46.8				
	VALVE TYPE						☐ CAVITATION ☐ FLASHING ☒ HIGH DP			
	* MAX SHUT OFF PRESS (KG/CM2g) 28 * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 28 | 60 * IBR FORM III-C ☐ REQUIRED ☒ NOT REQUIRED						..... ..... .....			
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....			

SPECIFICATION NO.: PE-TS-411-145-I104A

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

PERFORMANCE OF VALVE

LINEARITY
HYSTERISIS
SENSITIVITY
ACCURACY (OVERALL)

<u>$\pm 2\%$</u>
<u>$\pm 1\%$</u>
<u>$\pm 0.5\%$</u>
$\pm 2\%$

.....

.....

.....

.....

SERVICE
CONDITION*

SL.
No.
+

LOAD

FLOW
(T/HR)

INLET PR.
KG/CM2(A)

OUTLET
PR.
KG/CM2(A)

TEMP
DEG (C)

CALCULATED
CV

[illegible]

VALVE
O/L
VELOCITY

1.

MIN.

17.5

10.2

3.5

230

2.

60% BYPASS

72

26.2

36

330

3.

MAX.

90

21.6

5.9

330

VALVE TYPE

☐ CAVITATION ☐ FLASHING
☒ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)	47
* BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C)	47 | 360
* IBR FORM III-C	☒ REQUIRED ☐ NOT REQUIRED

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

.....

NOTES:

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A		
							VOLUME		
							SECTION		
							REV. NO.	2	DATE : 18.05.15
							SHEET		
Tag No.: DR-2/LCH21AA101 Qty.: ONE Data Sheet No. PES-145-06-DS1-0									
DATA SHEET – A & B									
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)	
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....		
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG °C	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY
	1.	VWO	81.2	39.2	16.7	207.5			
	2.	100%	73.4	37.7	16.2	205.9			
	3.	60%	37.5	23.9	10.3	185.4			
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP		
	* MAX SHUT OFF PRESS (KG/CM2g) 47 * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 47 | 215 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED						..... ..... .....		
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....		
NOTES:									

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A		
							VOLUME		
							SECTION		
							REV. NO.	2	DATE : 18.05.15
							SHEET		
Tag No.: DR-9/LCH22AA101 Qty.: ONE Data Sheet No. PES-145-06-DS1-0 DATA SHEET – A & B									
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)	
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....		
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG °C	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY
	1.	VWO	81.2	40.4	0.3	207.5			
	2.	100%	73.4	38.9	0.3	205.9			
	3.	60%	37.5	25.1	0.1	185.4			
	4.	MAX	115	35	0.3	173			
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP		
	* MAX SHUT OFF PRESS (KG/CM2g) 47/VAC * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 47/VAC | 215 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED						..... ..... .....		
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg									

SPECIFICATION NO.: PE-TS-411-145-I104A

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SECTION

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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
HPH-5 ALT DRAIN TO HP FLASH TANK

☐ INDOOR	☐ OUTDOOR
☐ ON/OFF	☒ MODULATING
Ø 219.1 X 6.35	Ø 273 X 9.27
SA 106 Gr B	SA 106 Gr C

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

☒ BWE ☐ SWE ☐ FLANGED
☐ A216 WCB ☐ A217 WC6 ☐ SS ☒ A217 C5
☐ A351 CF8M

☐ PTFE ☐ GRAFOIL ☐ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☐ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)
 SS 316 STELLITED | SS 316 STELLITED
 17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STD)

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

[■] TO OPEN [] STAYPUT [] TO CLOSE
[■] TO OPEN

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A				
							VOLUME				
							SECTION				
							REV. NO.	2	DATE : 18.05.15		
							SHEET				
Tag No.: DR-16/ LCH12AA101 Qty.: ONE									Data Sheet No. PES-145-06-DS1-0		
DATA SHEET – A & B											
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)									DATA SHEET – B (TO BE FILLED UP BY BIDDER)		
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....				
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY		
	1.	VWO	128	17.9	0.3	171.9					
	2.	100%	116	17.4	0.3	170.9					
	3.	60%	61.5	11.5	0.2	152.5					
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP				
	* MAX SHUT OFF PRESS (KG/CM2g) 19/VAC * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 19/VAC | 175 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED						..... ..... .....				
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....				
NOTES:											



**4X270 MW BHADRADI TPS
DATA SHEET FOR CONTROL VALVES
(WITH PNEUMATIC ACTUATOR)**

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Tag No.: **DR-19/LCJ10AA101** Qty.: **ONE**

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

**DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)**

**DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)**

PERFORMANCE OF VALVE	LINEARITY		± 2%							
	HYSTERESIS		± 1%							
	SENSITIVITY		± 0.5%							
	ACCURACY (OVERALL)		± 2%							
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCU- LATED CV	% VALVE LIFT	VALVE O/L VELOCITY	
	1.	VWO	34.1	2.5	0.96	100.1				
	2.	100%	31.2	2.4	0.94	99.4				
	3.	60%	17.6	1.6	0.61	87.6				
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP			
	* MAX SHUT OFF PRESS (KG/CM2g) 7/VAC * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 7/VAC | 130 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED						..... .....|..... .....			
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....			

NOTES:

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
LPH-3 ALT DRAIN TO LP FLASH TANK

☒ INDOOR	☐ OUTDOOR
☐ ON/OFF	☒ MODULATING
Ø 114.3 X 6.02	Ø 168.3 X 7.11
SA 106 Gr B	SA 106 Gr B

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

☐ GLOBE ☐ ANGLE | ☐ TOP ☐ CAGE | ONE

☒ BWE ☐ SWE ☐ FLANGED
☐ A216 WCB ☐ A217 WC6 ☐ SS ☒ A217 C5
☐ A351 CF8M
☐ PTFE ☒ GRAFOIL ☒ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☒ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)
SS 316 STELLITED | SS 316 STELLITED
17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STM)

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM2g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

■ TO OPEN □ STAYPUT □ TO CLOSE

■ TO OPEN

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED



**4X270 MW BHADRADI TPS
DATA SHEET FOR CONTROL VALVES
(WITH PNEUMATIC ACTUATOR)**

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Tag No.: **DR-22/LCJ31AA101** Qty.: **ONE**

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

**DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)**

**DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)**

PERFORMANCE OF VALVE	LINEARITY	$\pm 2\%$	
	HYSTERESIS	$\pm 1\%$	
	SENSITIVITY	$\pm 0.5\%$	
	ACCURACY (OVERALL)	$\pm 2\%$	

SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCU- LATED CV	% VALVE LIFT	VALVE O/L VELOCITY
	1.	VWO	34.1	2.9	0.1	100.1			
	2.	100%	31.2	2.9	0.1	99.4			
	3.	60%	17.6	2.1	0.1	87.6			
	4.	MAX	45	2.2	0.1	84			
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP		
	* MAX SHUT OFF PRESS (KG/CM2g) 7/VAC * BODY DESIGN : PRESS (KG/CM2g) TEMP (DEG C) 7/VAC 130 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED								

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

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NOTES:



**4X270 MW BHADRADI TPS
DATA SHEET FOR CONTROL VALVES
(WITH PNEUMATIC ACTUATOR)**

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Tag No.: **DR-25/LCJ20AA101** Qty.: **ONE**

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

**DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)**

**DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)**

PERFORMANCE OF VALVE	LINEARITY		± 2%							
	HYSTERESIS		± 1%							
	SENSITIVITY		± 0.5%							
	ACCURACY (OVERALL)		± 2%							
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCU- LATED CV	% VALVE LIFT	VALVE O/L VELOCITY	
	1.	VWO	60.8	0.98	0.39	77				
	2.	100%	55.5	0.96	0.39	76.7				
	3.	60%	30.1	0.63	0.27	68.4				
	VALVE TYPE						☐ CAVITATION ☒ FLASHING ☐ HIGH DP			
	* MAX SHUT OFF PRESS (KG/CM2g) 7/VAC * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 7/VAC | 105 * IBR FORM III-C ☐ REQUIRED ☒ NOT REQUIRED						..... .....|..... .....			
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....			

NOTES:

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
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SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
LPH-2 ALT DRAIN TO LP FLASH TANK

☒ INDOOR	☐ OUTDOOR
☐ ON/OFF	☒ MODULATING
Ø 168.3 X 7.11	Ø 219.1 X 8.18
SA 106 Gr B	SA 106 Gr C

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

☒ BWE ☐ SWE ☐ FLANGED
☐ A216 WCB ☐ A217 WC6 ☐ SS ☒ A217 C5
☐ A351 CF8M

☐ PTFE ☐ GRAFOIL ☐ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☐ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)
 SS 316 STELLITED | SS 316 STELLITED
 17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STM)

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

[■] TO OPEN [] STAYPUT [] TO CLOSE
[■] TO OPEN

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

PERFORMANCE OF VALVE

LINEARITY
HYSTERESIS
SENSITIVITY
ACCURACY (OVERALL)

$\pm 2\%$
$\pm 1\%$
$\pm 0.5\%$
$\pm 2\%$

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.....

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.....

SERVICE
CONDITION*

SL.
No.
+

LOAD

FLOW
(T/HR)

INLET PR.
KG/CM2(A)

OUTLET
PR.
KG/CM2(A)

TEMP
DEG (C)

CALCULATED
CV

% VALVE
LIFT

VALVE
O/L
VELOCITY

1.

MAXIMUM

90

9.0

0.11

159.7

VALVE TYPE

☐ CAVITATION ☒ FLASHING
☐ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)

10/VAC

* BODY DESIGN : PRESS (KG/CM ² g) TEMP (DEG C)	10/VAC	170
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* IBR FORM III-C

☒ REQUIRED ☐ NOT REQUIRED

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

NOTES:

	4X270 MW BHADRADI TPS DATA SHEET FOR CONTROL VALVES (WITH PNEUMATIC ACTUATOR)						SPECIFICATION NO.: PE-TS-411-145-I104A		
							VOLUME		
							SECTION		
							REV. NO.	2	DATE : 18.05.15
							SHEET		
Tag No.: FD-17/LAB60AA102 Qty.: ONE Data Sheet No. PES-145-06-DS1-0									
DATA SHEET – A & B									
DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR) (TO BE FILLED BY PURCHASER)								DATA SHEET – B (TO BE FILLED UP BY BIDDER)	
PERFORMANCE OF VALVE	LINEARITY HYSTERESIS SENSITIVITY ACCURACY (OVERALL)				$\pm 2\%$ $\pm 1\%$ $\pm 0.5\%$ $\pm 2\%$		..... ..... ..... .....		
SERVICE CONDITION*	SL. No. +	LOAD	FLOW (T/HR)	INLET PR. KG/CM2(A)	OUTLET PR. KG/CM2(A)	TEMP DEG (C)	CALCULATED CV	% VALVE LIFT	VALVE O/L VELOCITY
	1.	MIN.	250	162	156	138			
	2.	60%	486.8	169	163	222.9			
	3.	100%	796.5	186	180	246.0			
	4.	MAX.	865	183	177	248			
	VALVE TYPE						☐ CAVITATION ☐ FLASHING ☒ HIGH DP		
	* MAX SHUT OFF PRESS (KG/CM2g) 280 * BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C) 280 | 260 * IBR FORM III-C ☒ REQUIRED ☐ NOT REQUIRED						..... ..... .....		
TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg							.....		

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

PERFORMANCE OF VALVE

LINEARITY
HYSTERESIS
SENSITIVITY
ACCURACY (OVERALL)

$\pm 2\%$
$\pm 1\%$
$\pm 0.5\%$
$+ 2\%$

.....

.....

.....

.....

SERVICE
CONDITION*

SL.
No.
+

LOAD

FLOW
(T/HR)

INLET PR.
KG/CM2(A)

OUTLET
PR.
KG/CM2(A)

TEMP
DEG (C)

CALCULATED
CV

% VALVE LIFT
0
10
20
30
40
50
60
70
80
90
100

VALVE
O/L
VELOCITY

1.

MIN.

40

75

20

111

2.

MAX.

260

166

160

138

VALVE TYPE

☐ CAVITATION ☐ FLASHING
☒ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)

280

* BODY DESIGN : PRESS (KG/CM ² g) | TEMP (DEG C)	280 | 260
* IBR FORM III-C	[■] REQUIRED [] NOT REQUIRED

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
---	-----------------

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – A FOR CONTROL VALVE (WITH PNEUMATIC ACTUATOR)
(TO BE FILLED BY PURCHASER)

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
EMERGENCY MAKE-UP TO CONDENSER

☒ INDOOR	☐ OUTDOOR
☐ ON/OFF	☒ MODULATING
Ø 114.3X3.05	| Ø 114.3X3.05
SA 106 Gr C	| SA 106 Gr C

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

☐ BWE ☐ SWE ☐ FLANGED
☐ A216 WCB ☐ A217 WC6 ☐ SS ☐ A217 C5
☐ A351 CF8M
☐ PTFE ☐ GRAFOIL ☐ DOUBLE ☐ SINGLE
☐ STD ☐ EXTENDED ☐ FINNED
☐ LINEAR ☐ EQ. PERCENTAGE
☐ QUICK OPEN (ON/OFF)
 SS 316 STELLITED | SS 316 STELLITED
 17-4 PH SS | SS 316 STELLITED
☐ BELOW SEAT ☐ ABOVE SEAT
☐ < 7 M/SEC (WATER) | ☐ MAC NO. < 1/3 (STM)

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

☐ TO OPEN ☒ STAYPUT ☐ TO CLOSE
☒ STAYPUT

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

SPECIFICATION NO.: PE-TS-411-145-I104A

SECTION

REV. NO.

2	DATE : 18.05.15
---	-----------------

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

$\pm 2\%$
$\pm 1\%$
$\pm 0.5\%$
$+ 2\%$

VALVE
O/L
VELOCITY

☒ CAVITATION ☐ FLASHING
☐ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)	7
* BODY DESIGN : PRESS (KG/CM2g) | TEMP (DEG C)	7 | 55
* IBR FORM III-C	☒ REQUIRED ☐ NOT REQUIRED

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2	DATE : 18.05.15
---	-----------------

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP
BY BIDDER)

GENERAL.*

PROJECT
SERVICE
LOCATION
DUTY
PIPE SIZE (inlet / outlet)
PIPE MATERIAL (inlet / outlet)

4X270 MW MANUGURU TPS
NORMAL MU TO CONDENSER
☒ INDOOR ☐ OUTDOOR
☐ ON/OFF ☒ MODULATING
Ø 88.9 X 3.05 | Ø 88.9 X 3.05
SA 106 Gr C | SA 106 Gr C

BODY*

MODEL NO.
TYPE OF BODY: GUIDING : NO. OF PORTS
BODY SIZE: PORT SIZE: DESIGN CV
END CONNECTION & RATING (ANSI)
BODY MATERIAL.

PACKING: MATERIAL SINGLE / DOUBLE
BONNET TYPE
TRIM FORM

TRIM MATERIAL: SEAT | PLUG
: CAGE | GUIDE BUSH

FLOW
OUTLET VELOCITY

REQUIRED LEAKAGE CLASS
NOISE LEVEL (dBA) (spec. 3.1.14)
VACUUM SERVICE
ANTI CAVITATION TRIM

[■] GLOBE [] ANGLE | [] TOP [■] CAGE | ONE

[■] BWE [] SWE [] FLANGED
[] A216 WCB [■] A217 WC6 [] SS [] A217 C5
[] A351 CF8M
[] PTFE [■] GRAFOIL [] DOUBLE [■] SINGLE
[] STD [] EXTENDED [] FINNED
[] LINEAR [■] EQ. PERCENTAGE
[] QUICK OPEN (ON/OFF)
SS 316 STELLITED | SS 316 STELLITED
17-4 PH SS | SS 316 STELLITED
[] BELOW SEAT [] ABOVE SEAT
[] < 7 M/SEC (WATER) [] MAC NO. < 1/3 (STM)

PNEUMATIC ACTUATOR

MODEL NO. & SIZE
CLOSE AT : OPEN AT (KG/CM²g)
*TRAVEL TIME FOR
OPEN TO CLOSE, CLOSE TO OPEN
*VLV POSN. ON ELEC SIGNAL FAILURE
*VALVE POSN. ON SUPPLY AIR FAILURE

< 10 SEC

2

☐ TO OPEN ☒ STAYPUT ☐ TO CLOSE
☒ TO OPEN

ACCESSORIES

POSITIONER(SMART)HART COMPATIBLE
AIR FILTER REGULATOR
AIR LOCK RELAY
POSITION LIMIT SWITCH
POSITION TRANSMITTER
SOLENOID VALVE
E/P CONVERTOR
JUNCTION BOX
HAND WHEEL (SIDE MOUNTED)
LOCAL POSITION INDICATOR
PRESSURE GAUGES

☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED ☐ NOT REQUIRED
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☐ REQUIRED ☒ NOT REQUIRED
 PART OF POSITIONER
☒ REQUIRED ☐ NOT REQUIRED
☒ REQUIRED
☒ REQUIRED ☐ NOT REQUIRED

SPECIFICATION NO.: PE-TS-411-145-I104A

VOLUME

SECTION

REV. NO.

2

DATE : 18.05.15

SHEET

Data Sheet No. PES-145-06-DS1-0

DATA SHEET – A & B

DATA SHEET – B
(TO BE FILLED UP BY
BIDDER)

PERFORMANCE OF VALVE

LINEARITY
HYSTERESIS
SENSITIVITY
ACCURACY (OVERALL)

$\pm 2\%$
$\pm 1\%$
$\pm 0.5\%$
$+ 2\%$

SERVICE
CONDITION*

SL.
No.
+

LOAD

FLOW
(T/HR)

INLET PR.
KG/CM2(A)

OUTLET
PR.
KG/CM2(A)

TEMP
DEG (C)

CALCULATED
CV

VALVE LIFT	VALVE LIFT	
	INCHES	MILLIMETERS
0.000	0.000	0.000
0.001	0.001	0.025
0.002	0.002	0.051
0.003	0.003	0.076
0.004	0.004	0.102
0.005	0.005	0.127
0.006	0.006	0.152
0.007	0.007	0.178
0.008	0.008	0.203
0.009	0.009	0.229
0.010	0.010	0.254
0.011	0.011	0.279
0.012	0.012	0.305
0.013	0.013	0.330
0.014	0.014	0.355
0.015	0.015	0.381
0.016	0.016	0.406
0.017	0.017	0.432
0.018	0.018	0.457
0.019	0.019	0.482
0.020	0.020	0.508
0.021	0.021	0.533
0.022	0.022	0.559
0.023	0.023	0.584
0.024	0.024	0.610
0.025	0.025	0.635
0.026	0.026	0.660
0.027	0.027	0.686
0.028	0.028	0.711
0.029	0.029	0.737
0.030	0.030	0.762
0.031	0.031	0.787
0.032	0.032	0.813
0.033	0.033	0.838
0.034	0.034	0.863
0.035	0.035	0.889
0.036	0.036	0.914
0.037	0.037	0.939
0.038	0.038	0.965
0.039	0.039	0.990
0.040	0.040	1.015
0.041	0.041	1.041
0.042	0.042	1.066
0.043	0.043	1.091
0.044	0.044	1.117
0.045	0.045	1.142
0.046	0.046	1.167
0.047	0.047	1.193
0.048	0.048	1.218
0.049	0.049	1.243
0.050	0.050	1.268
0.051	0.051	1.294
0.052	0.052	1.319
0.053	0.053	1.344
0.054	0.054	1.369
0.055	0.055	1.395
0.056	0.056	1.420
0.057	0.057	1.445
0.058	0.058	1.470
0.059	0.059	1.496
0.060	0.060	1.521
0.061	0.061	1.546
0.062	0.062	1.572
0.063	0.063	1.597
0.064	0.064	1.622
0.065	0.065	1.647
0.066	0.066	1.673
0.067	0.067	1.698
0.068	0.068	1.723
0.069	0.069	1.748
0.070	0.070	1.773
0.071	0.071	1.799
0.072	0.072	1.824
0.073	0.073	1.849
0.074	0.074	1.874
0.075	0.075	1.900
0.076	0.076	1.925
0.077	0.077	1.950
0.078	0.078	1.975
0.079	0.079	2.001
0.080	0.080	2.026
0.081	0.081	2.051
0.082	0.082	2.076
0.083	0.083	2.101
0.084	0.084	2.127
0.085	0.085	2.152
0.086	0.086	2.177
0.087	0.087	2.202
0.088	0.088	2.227
0.089	0.089	2.253
0.090	0.090	2.278
0.091	0.091	2.303
0.092	0.092	2.328
0.093	0.093	2.353
0.094	0.094	2.379
0.095	0.095	2.404
0.096	0.096	2.429
0.097	0.097	2.454
0.098	0.098	2.479
0.099	0.099	2.504
0.100	0.10	

VALVE
O/L
VELOCITY

1.

MIN.

3.0

4.0

0.7

45

2.

MAX.

26.0

30

09

45

VALVE TYPE

☒ CAVITATION ☐ FLASHING
☐ HIGH DP

* MAX SHUT OFF PRESS (KG/CM2g)

7

* BODY DESIGN : PRESS (KG/CM2g) TEMP (DEG C)	7	55
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7 | 55

* IBR FORM III-C

☒ REQUIRED ☐ NOT REQUIRED

TOTAL WEIGHT (VALVE + ACTUATOR + ACCESSORIES) Kg